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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
PHOENIX, ARIZONA

FOUNTAIN HILLS AREA DRAINAGE MASTER PLAN FCD 94-16

RECONNAISSANCE STUDY
and
ALTERNATIVE EVALUATION
for
GOLDEN EAGLE PARK DAM

INTERIM REPORT

APPENDICES

George V. Sabol Consulting Engineers, Inc.
Scottsdale, Arizona

NOVEMBER 1996

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
PHOENIX, ARIZONA

FOUNTAIN HILLS AREA DRAINAGE MASTER PLAN FCD 94-16

RECONNAISSANCE STUDY
and
ALTERNATIVE EVALUATION
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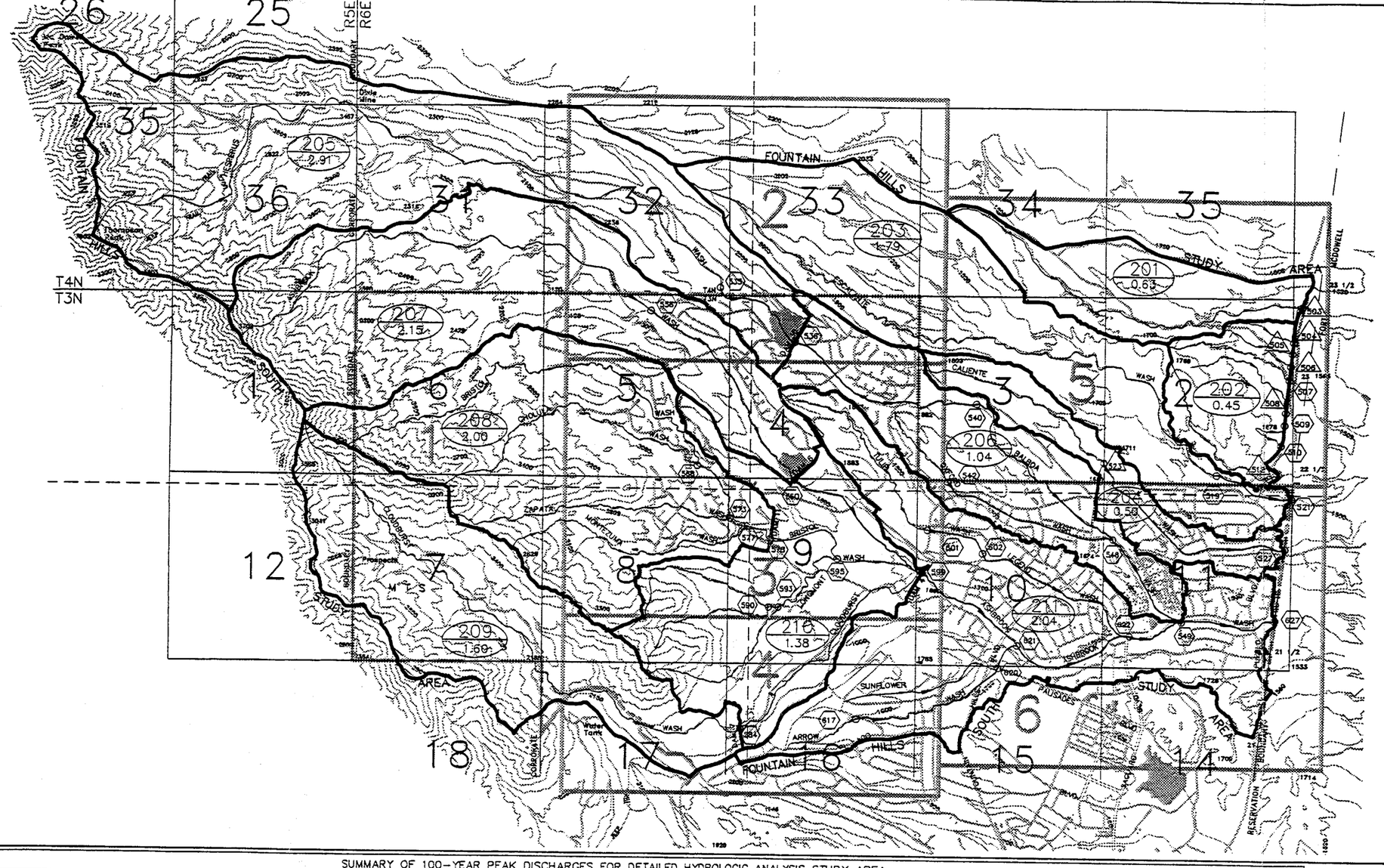
George V. Sabol Consulting Engineers, Inc.
Scottsdale, Arizona

NOVEMBER 1996

APPENDIX A

Ftn Hills FDS hydrology exhibits



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FLOOD DELINEATION STUDY OF FOUNTAIN HILLS NORTH

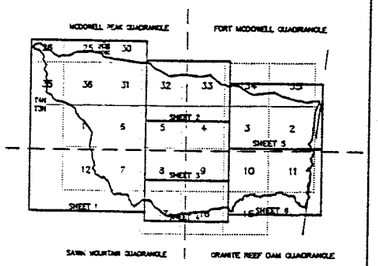
F.C.D. CONTRACT NO. FCD 92-04

LEGEND

- MAJOR BASIN NUMBER / AREA IN SQUARE MILES — 201 / 0.63
- KEY CONCENTRATION POINT
- HEC-1 IDENTIFIER AT KEY CONCENTRATION POINT 584 — 584
- HEC-1 IDENTIFIER FOR DIVERSION AT KEY CONCENTRATION POINT 523 — 523
- MAJOR DRAINAGE BASIN BOUNDARY
- HEC-2 STUDY REACH
- WASH FLOW PATH
- FORT MCDOWELL INDIAN RESERVATION BOUNDARY
- FOUNTAIN HILLS CORPORATE BOUNDARY
- RANGE AND TOWNSHIP BOUNDARY
- USGS QUADRANGLE MAP BOUNDARY
- SECTION LINE
- SHEET BOUNDARY FOR EXHIBIT "D"

NOTES

INDEX MAP



HYDROLOGY EXHIBIT "A"

DRAINAGE BASIN MAP AND SHEET INDEX FOR EXHIBIT "D"

1500 0' 1500 3000

SCALE: 1" = 1500'

CONTOUR INTERVAL = 20FEET

GEORGE V. SABOL CONSULTING ENGINEERS, INC.

	BY	DATE
DESIGN	N/A	-
DESIGN CHK.	N/A	-
PLANS	PK	7/94
PLANS CHK.	TRL	7/94

SUBMITTED BY: DATE

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 1 OF 1

Drawing Name: V:\FHILLS\ACAD\EX-A.dwg
Date: REV. 17 OCT 1994 08:00am

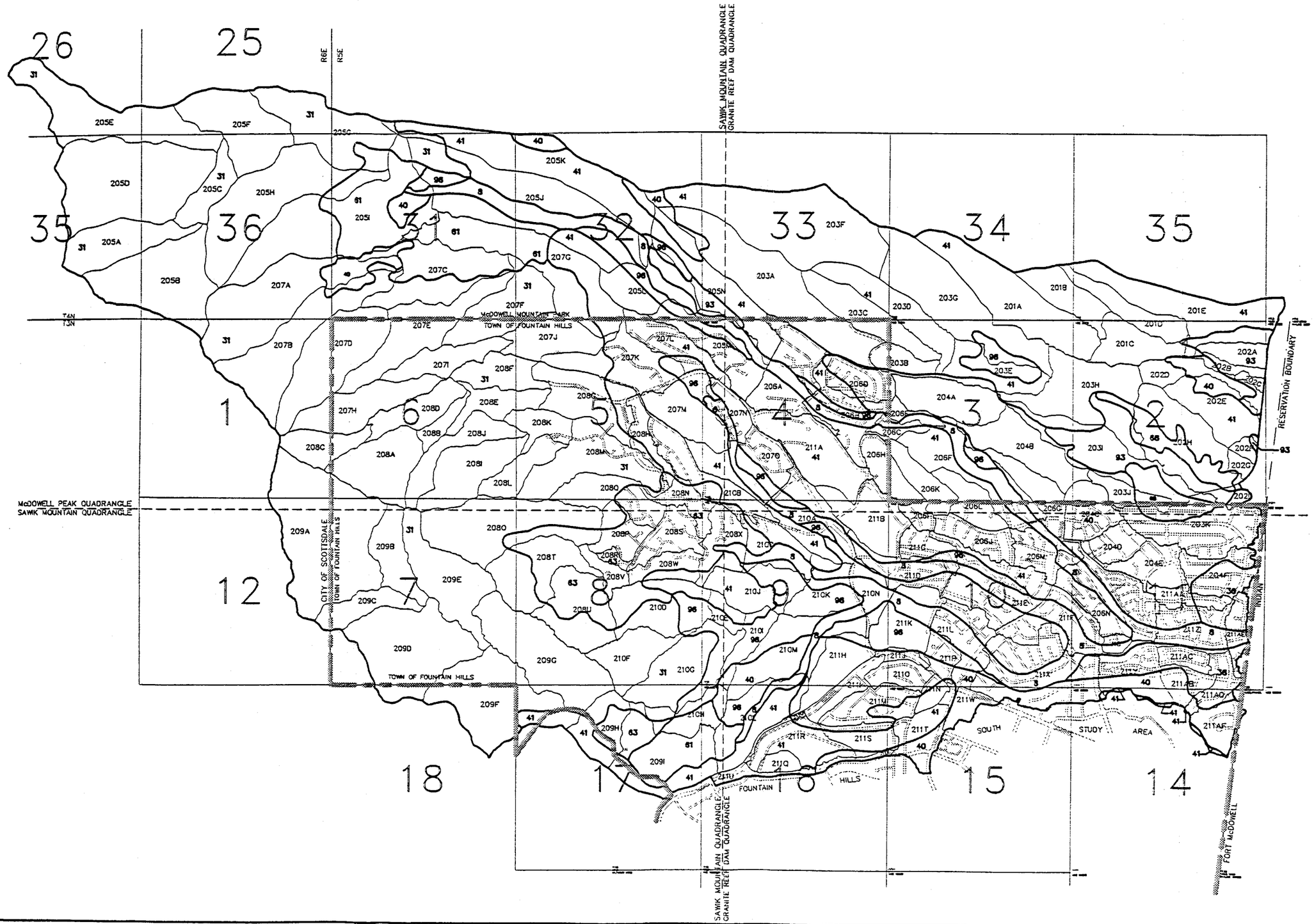
SUMMARY OF 100-YEAR PEAK DISCHARGES FOR DETAILED HYDROLOGIC ANALYSIS STUDY AREA

HEC-1 Identifier	Description	Peak Discharge (cfs)	Area (sm)
D503L	Culvert 503 flow into Ft. McDowell Indian Reservation.	323	0.63
D504L	Culvert 504 flow into Ft. McDowell Indian Reservation.	22	0.67
D505L	Culvert 505 flow into Ft. McDowell Indian Reservation.	14	0.69
D506L	Culvert 506 flow into Ft. McDowell Indian Reservation.	0	0.69
C5070	Culvert 507 on McDowell Mountain Road.	203	0.86
D508R	Culvert 508 flow into Ft. McDowell Indian Reservation.	72	0.10
C509	Culvert 509 flow at Ft. McDowell Indian Reservation.	36	0.01
C510	Culvert 510 flow at Ft. McDowell Indian Reservation.	38	0.01
D512L	Stock Tank flow into Ft. McDowell Indian Reservation.	72	0.20
C519	Escalante Wash start of Floodplain Delineation.	1406	1.99
C521	Escalante Wash at Ft. McDowell Indian Reservation.	1407	1.99
D523L	Culvert 523 flow in Caliente Wash.	266	0.23
C527	Caliente Wash at Ft. McDowell Indian Reservation (Culvert 527).	565	0.50
C535	Hesperus Wash start of Floodplain Delineation.	2520	2.62
C536I	Dam 36, inflow.	2586	2.91
C536O	Dam 36, outflow.	326	2.91
C540	End Hesperus Wash, start Balboa Wash.	560	3.24
C542	Oxford Wash, start of Floodplain Delineation.	153	0.06
C548L	Balboa Wash U/S of confluence with Oxford Wash.	721	3.72
C548R	Oxford Wash U/S of confluence with Balboa Wash.	635	0.32
C548	Confluence of Oxford and Balboa Washes.	1038	4.04
C549L	Balboa Wash U/S of confluence with Ashbrook Wash.	1128	4.19
C549R	Ashbrook Wash U/S of confluence with Balboa Wash.	2112	8.87
C549	Confluence of Balboa and Ashbrook Washes.	3095	13.06

HEC-1 Identifier	Description	Peak Discharge (cfs)	Area (sm)
C556	Ashbrook Wash, start of Floodplain Delineation.	1752	1.64
C560I	Dam 6, inflow.	1989	2.15
C560O	Dam 6, outflow.	287	2.15
C568L	Bristol Wash U/S of confluence with Cholula Wash.	961	0.61
C568R	Cholula Wash U/S of confluence with Bristol Wash.	701	0.46
C568	Confluence of Cholula and Bristol Washes.	1428	1.07
C573L	Bristol Wash U/S of confluence with Zapata Wash.	1460	1.12
C573R	Zapata Wash U/S of confluence with Bristol Wash.	772	0.46
C573	Confluence of Zapata and Bristol Washes.	1872	1.58
C577L	Bristol Wash U/S of confluence with Montezuma Wash.	1872	1.58
C577R	Montezuma Wash U/S of confluence with Bristol Wash.	800	0.34
C577	Confluence of Montezuma and Bristol Washes.	2187	1.92
C578I	Dam 11, inflow.	2231	2.00
C578O	Dam 11, outflow.	381	2.00
C584I	Dam 7, inflow.	1999	1.60
C584O	Dam 7, outflow.	469	1.60
C590L	Longmont Wash Left Branch U/S of confluence with Main Branch.	353	0.17
C590R	Longmont Wash Main Branch U/S of confluence with Main Branch	472	0.25
C590	Confluence of Left and Main Branches of Longmont Wash.	819	0.42
C593L	Longmont Wash Main Branch U/S of confluence with Right Branch.	819	0.42
C593R	Longmont Wash Right Branch U/S of confluence with Main Branch.	158	0.07

HEC-1 Identifier	Description	Peak Discharge (cfs)	Area (sm)
C593	Confluence of Right and Main Branches of Longmont Wash.	972	0.49
C595L	Bristol Wash U/S of confluence with Longmont Wash.	468	2.19
C595R	Longmont Wash U/S of confluence with Bristol Wash.	1119	0.64
C595	Confluence of Longmont and Bristol Washes.	1205	2.83
C599I	Dam 4, inflow.	1967	7.13
C599O	Dam 4, outflow.	966	7.13
C601	Tulip Wash, start of Floodplain Delineation.	462	0.25
C602	End Tulip Wash, start Legend Wash.	635	0.37
C617	Arrow Wash, start of Floodplain Delineation.	270	0.13
C620L	Sunflower Wash U/S of confluence with Arrow Wash (Culvert 611).	151	0.14
C620R	Arrow Wash U/S of confluence with Sunflower Wash (Culvert 619).	335	0.28
C620	Confluence of Sunflower and Arrow Washes.	485	0.42
C621L	Ashbrook Wash U/S of confluence with Arrow Wash.	975	7.64
C621R	Arrow Wash U/S of confluence with Ashbrook Wash.	482	0.42
C621	Confluence of Arrow and Ashbrook Washes.	1184	7.93
C622L	Legend Wash U/S of confluence with Ashbrook Wash.	1121	0.63
C622R	Ashbrook Wash U/S of confluence with Legend Wash.	1384	8.14
C622	Confluence of Legend and Ashbrook Washes.	2053	8.78
C627	Ashbrook Wash at Ft. McDowell Indian Reservation.	3187	13.32

THIS MAP WAS PREPARED USING THE USGS QUADRANGLE MAPS FOR BASE TOPOGRAPHY. REFER TO SECTION 2 OF THE HYDROLOGY REPORT.



SOILS DATA PREPARED BY DIGITIZING SCS SOILS MAP UNIT BOUNDARIES FROM THE "SOIL SURVEY OF AGUILA-CAREFREE AREA, PARTS OF MARICOPA AND PINAL COUNTIES, ARIZONA"

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FLOOD DELINEATION STUDY OF FOUNTAIN HILLS NORTH

F.C.D. CONTRACT NO. FCD 92-04

LEGEND

MAJOR DRAINAGE BASIN BOUNDARY	
DRAINAGE SUB-BASIN BOUNDARY	
DRAINAGE SUB-BASIN IDENTIFIER	202A
SCS SOILS MAP UNIT BOUNDARY	
SCS SOILS MAP UNIT IDENTIFIER	41
SECTION LINE	
TOWNSHIP AND RANGE LINE	
USGS QUADRANGLE MAP BOUNDARY	
TOWN OF FOUNTAIN HILLS BOUNDARY	
FORT McDOWELL INDIAN RESERVATION BOUNDARY	

HYDROLOGY EXHIBIT "B"

DRAINAGE SUB-BASIN SOILS MAP

1000 0' 1000 2000

SCALE: 1" = 1000'

CONTOUR INTERVAL = NONE

GEORGE V. SABOL CONSULTING ENGINEERS, INC.

	BY	DATE
DESIGN	N/A	-
DESIGN CHK.	N/A	-
PLANS	PK	10/93
PLANS CHK.	TPL	10/93
SUBMITTED BY:		DATE

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

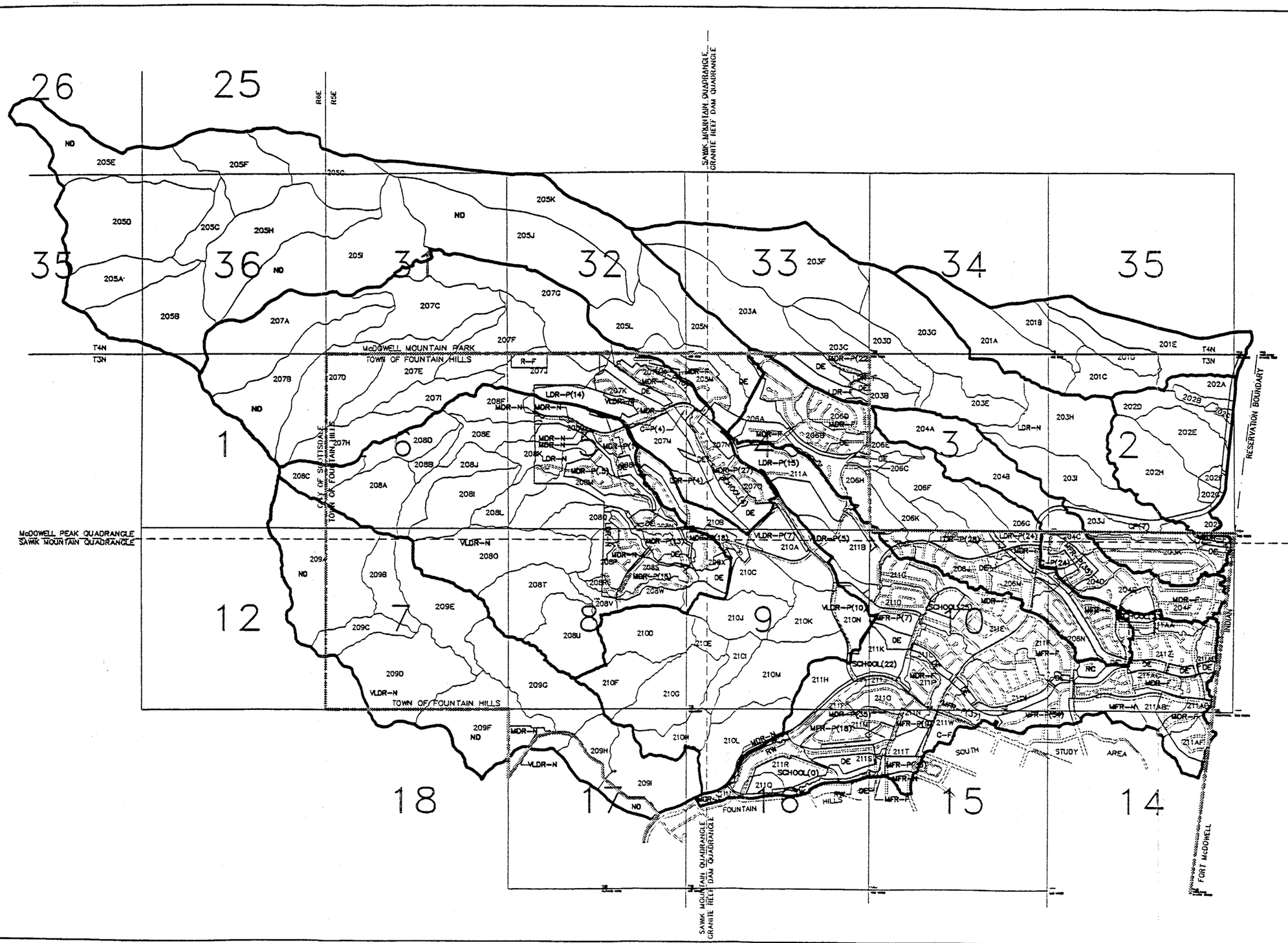
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 1 OF 1

Dwg. Name: P:\FTHILLS\ACADFE-B.dwg
Date: REV AUG 23, 1994 09:36am



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FLOOD DELINEATION STUDY OF FOUNTAIN HILLS NORTH

F.C.D. CONTRACT NO. FCD 92-04

LEGEND

MAJOR DRAINAGE BASIN BOUNDARY	
DRAINAGE SUB-BASIN BOUNDARY	
DRAINAGE SUB-BASIN IDENTIFIER	203E
LAND USE BOUNDARY	
LAND USE IDENTIFIERS:	
Very Low Density Residential	VLDR
Light Density Residential	LDR
Medium Density Residential	MDR
Multi-Family Residential	MFR
Commercial	C
Industrial	I
Schools	School
Drainage Easement	DE
Street Right-of-Way	RW
Natural Desert	ND
Qualifers:	
Fully Developed	F
Less Than 50% Developed	P
Undeveloped	N
Value in parenthesis is estimated % impervious	(##)

Example: VLDR-P(23) indicates a partially developed VLDR land use with an estimated average percent impervious value of 23% for the entire parcel.

SECTION LINE	
RANGE AND TOWNSHIP BOUNDARY	
USGS QUADRANGLE MAP BOUNDARY	
TOWN OF FOUNTAIN HILLS BOUNDARY	
FORT McDOWELL INDIAN RESERVATION BOUNDARY	

HYDROLOGY EXHIBIT "C"

DRAINAGE SUB-BASIN LAND USE MAP

N

1000 0' 1000 2000

SCALE: 1" = 1000'

CONTOUR INTERVAL = NONE

GEORGE V. SABOL CONSULTING ENGINEERS, INC.

	BY	DATE
DESIGN	N/A	-
DESIGN CHK.	N/A	-
PLANS	PK	10/93
PLANS CHK.	TRL	10/93
SUBMITTED BY:		DATE

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

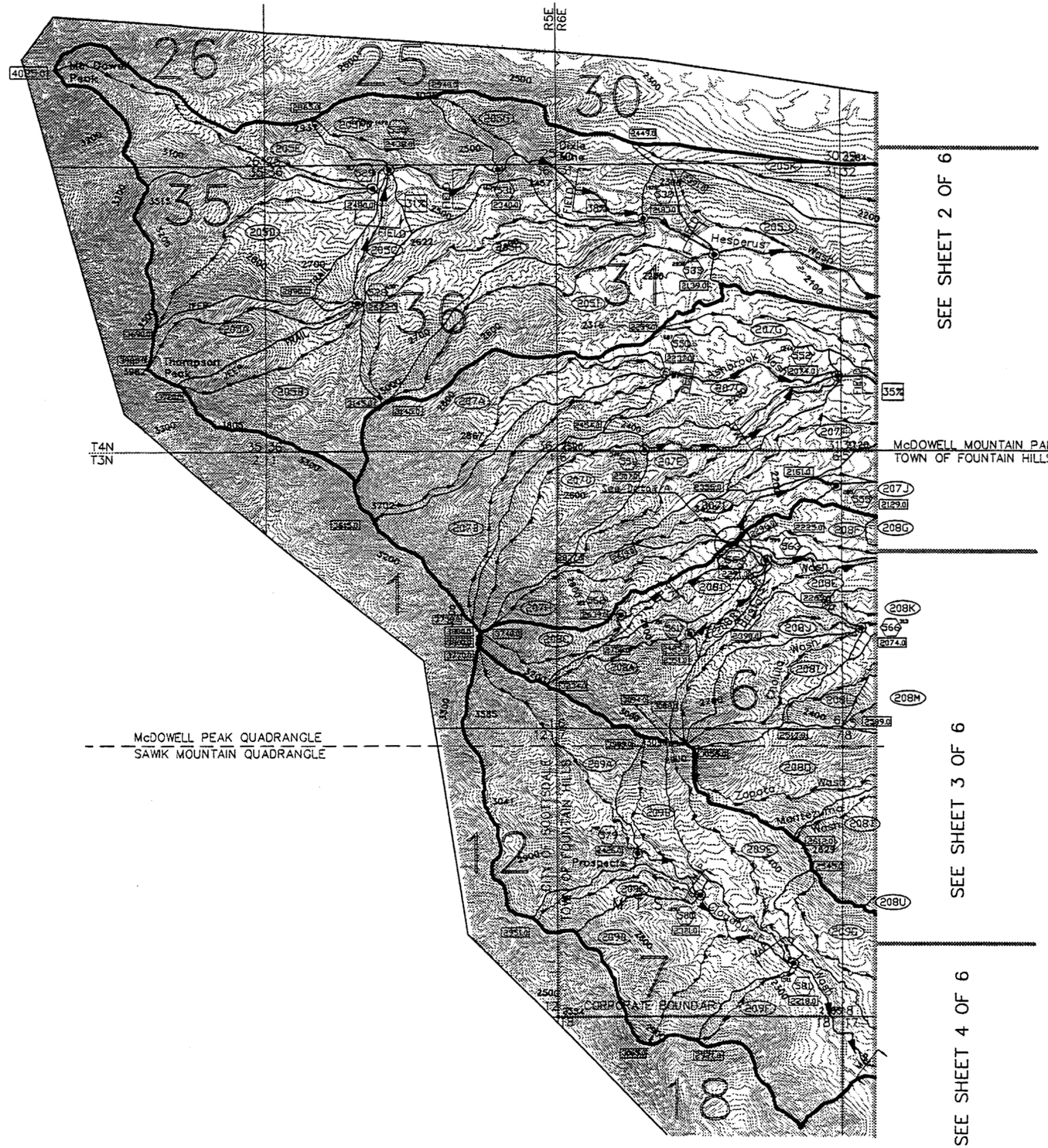
APPROVED BY: DATE

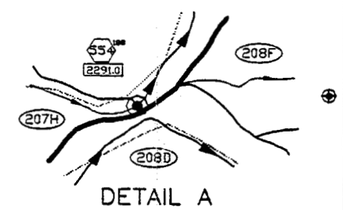
CHIEF ENGINEER AND GENERAL MANAGER

SHEET 1 OF 1

Dwg. Name: P:\FTHILLS\VCADS\E-C.dwg
Date: REV. OCT. 17, 1994 08:02am

THIS MAP WAS PREPARED USING THE TOWN OF FOUNTAIN HILLS ZONING MAP (In AutoCAD format) AS A BASE. THE ZONING MAP AUTOCAD FILE IS DATED 11/92.





FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FLOOD DELINEATION STUDY OF FOUNTAIN HILLS NORTH

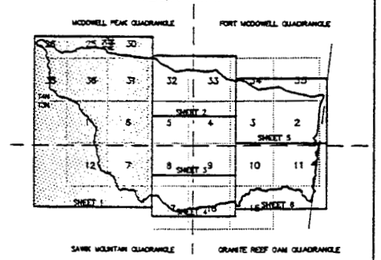
F.C.D. CONTRACT NO. FCD 92-04

LEGEND

NOTE: ALL FLOW RATES ARE FOR THE 100-YEAR PEAK DISCHARGE.

- DRAINAGE SUB-BASIN IDENTIFIER FOR SUBBASIN 207L — 207L
- DRAINAGE SUB-BASIN CONCENTRATION POINT 552 PEAK DISCHARGE IS 1244 cfs — 552
- HEC-1 RESERVOIR ROUTE AT CONCENTRATION POINT 513 INFLOW IS 389 cfs, OUTFLOW IS 369 cfs — 513
- DRAINAGE SUB-BASIN FLOW SPLIT CONCENTRATION POINT 505 PEAK DISCHARGE IS 32 cfs; 18 cfs SPLIT RIGHT, and 14 cfs SPLIT LEFT. — 505
- HEC-1 RESERVOIR ROUTE AND FLOW SPLIT AT CONCENTRATION POINT 523. PEAK INFLOW IS 386 cfs, OUTFLOW IS 286 cfs; 19 cfs SPLIT RIGHT, 266 cfs SPLIT LEFT. — 523
- ELEVATION AT CONCENTRATION POINT OR TOP OF Tc PATH — 1972.0
- VEGETATION COVER DENSITY (FIELD MEASURED) — 35%
- DRAINAGE SUB-BASIN CONCENTRATION POINT
- MAJOR DRAINAGE BASIN BOUNDARY
- DRAINAGE SUB-BASIN BOUNDARY
- HEC-1 ROUTING PATH
- Tc FLOW PATH
- FORT MCDOWELL INDIAN RESERVATION BOUNDARY
- CORPORATE BOUNDARY
- RANGE AND TOWNSHIP BOUNDARY
- USGS QUADRANGLE MAP BOUNDARY
- SECTION LINE
- LIMITS OF 200 SCALE MAPPING
- HEC-1 REACH ROUTE CROSS SECTION LOCATION
  - Ashbrook Wash HEC-2 Section 5.254 — AS-5.254
  - Field Survey Cross Section — FIELD
  - Cross Section From Available Mapping — MAP
- NON-CONTRIBUTING DRAINAGE AREA

INDEX MAP



HYDROLOGY EXHIBIT "D"

DRAINAGE SUB-BASIN DELINEATION TIME OF CONCENTRATION FLOW PATHS AND FLOOD ROUTING MAP

N

1000' 0' 1000' 2000'

SCALE: 1" = 1000'
CONTOUR INTERVAL = 20 FEET

GEORGE V. SABOL CONSULTING ENGINEERS, INC.

	BY	DATE
DESIGN	N/A	–
DESIGN CHK.	N/A	–
PLANS	P.K.	8/94
PLANS CHK.	TRL	8/94
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

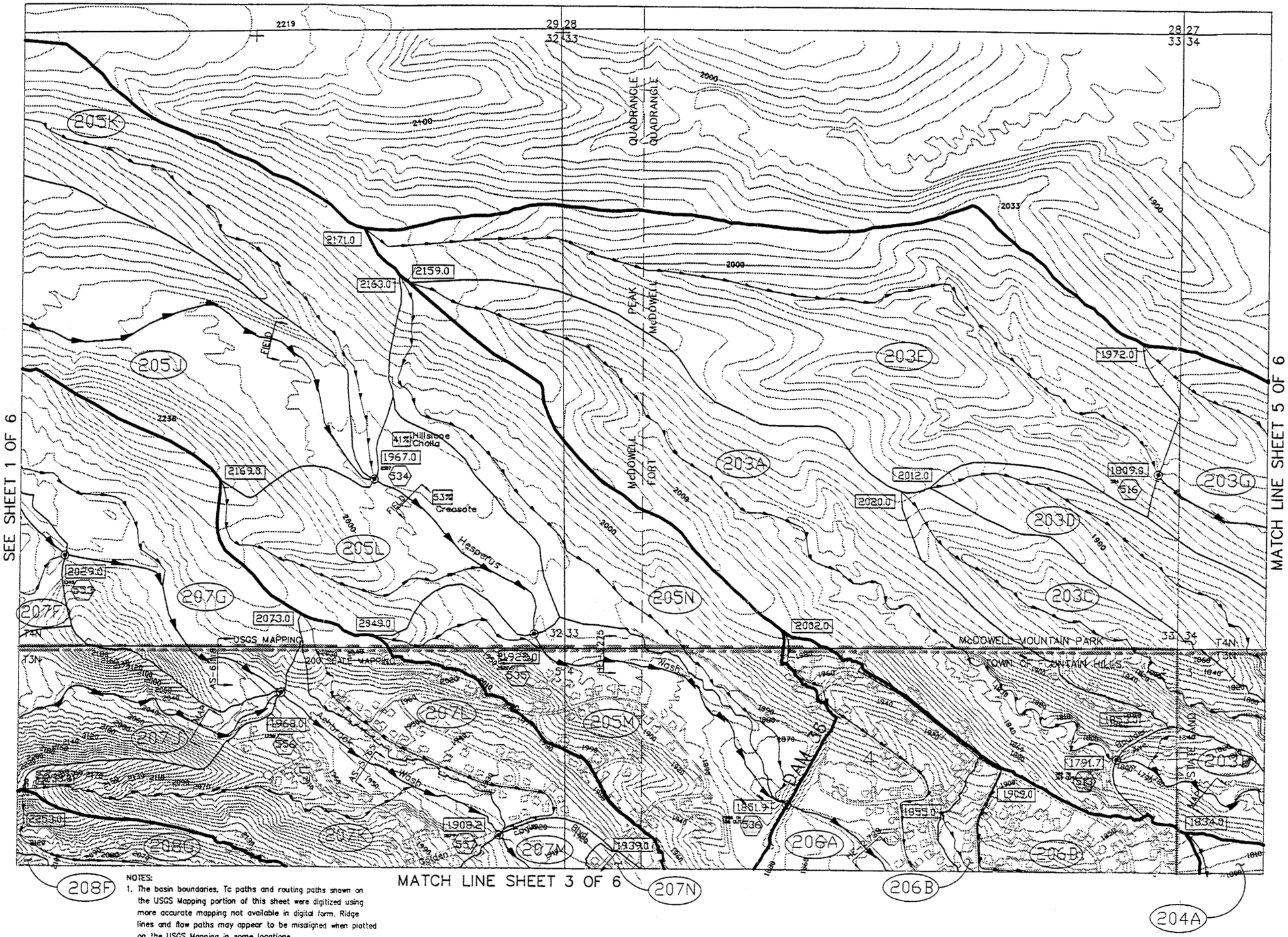
APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 1 OF 6

Dwg. Name: \P\FTHILLS\ACAD\SHEET1.dwg
Date: REV. 17 OCT 1994 8:03am

THE TOPOGRAPHY ON WHICH THIS MAP IS BASED (USGS MAPPING) CAME FROM THE REFERENCED USGS QUADRANGLE MAPS (7.5 MINUTE, 1"=2000'). ONLY 100-FOOT CONTOURS ARE SHOWN.



NOTES:

1. The basin boundaries, Tc paths and routing paths shown on the USGS Mapping portion of this sheet were digitized using more accurate mapping not available in digital form. Ridge lines and flow paths may appear to be misaligned when plotted on the USGS Mapping in some locations.

200 Scale Mapping: Kenney Aerial Mapping Flight Date = 8/91

USGS Mapping: US Geological Survey Flight Date = 1962

THE CONTOURS AND PLANIMETRICS FOR THE 200 SCALE MAPPING WERE PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS 1"=200' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS AND BASED ON GROUND CONTROL SURVEY DATA PROVIDED BY ANDERSON-NELSON, INC. THE CONTOURS FOR THE USGS MAPPING CAME FROM THE USGS QUADRANGLE MAPS(7.5 MINUTE 1"=2000'). ONLY 10-FOOT CONTOURS ARE SHOWN FOR THE 200 SCALE MAPPING, AND 20-FOOT CONTOURS FOR THE USGS MAPPING.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FLOOD DELINEATION STUDY OF FOUNTAIN HILLS NORTH

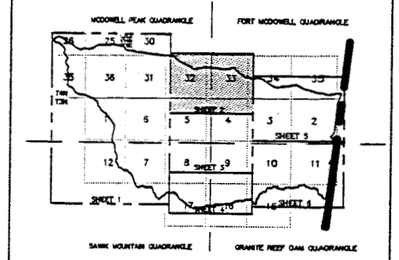
F.C.D. CONTRACT NO. FCD 92-04

LEGEND

NOTE: ALL FLOW RATES ARE FOR THE 100-YEAR PEAK DISCHARGE.

- DRAINAGE SUB-BASIN IDENTIFIER FOR SUBBASIN 207L — 207L
- DRAINAGE SUB-BASIN CONCENTRATION POINT 552 PEAK DISCHARGE IS 1244 cfs — 552
- HEC-1 RESERVOIR ROUTE AT CONCENTRATION POINT 513 INFLOW IS 389 cfs, OUTFLOW IS 389 cfs — 513
- DRAINAGE SUB-BASIN FLOW SPLIT CONCENTRATION POINT 505 PEAK DISCHARGE IS 32 cfs: 18 cfs SPLIT RIGHT, and 14 cfs SPLIT LEFT. — 505
- HEC-1 RESERVOIR ROUTE AND FLOW SPLIT AT CONCENTRATION POINT 523. PEAK INFLOW IS 336 cfs, OUTFLOW IS 286 cfs: 19 cfs SPLIT RIGHT, 266 cfs SPLIT LEFT. — 523
- ELEVATION AT CONCENTRATION POINT OR TOP OF Tc PATH — 1972.0
- VEGETATION COVER DENSITY (FIELD MEASURED) — 35%
- DRAINAGE SUB-BASIN CONCENTRATION POINT
- MAJOR DRAINAGE BASIN BOUNDARY
- DRAINAGE SUB-BASIN BOUNDARY
- HEC-1 ROUTING PATH
- Tc FLOW PATH
- FORT MCDOWELL INDIAN RESERVATION BOUNDARY
- CORPORATE BOUNDARY
- RANGE AND TOWNSHIP BOUNDARY
- USGS QUADRANGLE MAP BOUNDARY
- SECTION LINE
- LIMITS OF 200 SCALE MAPPING
- HEC-1 REACH ROUTE CROSS SECTION LOCATION
  - Ashbrook Wash HEC-2 Section 5.254 — AS-5.254
  - Field Survey Cross Section — FIELD
  - Cross Section From Available Mapping — MAP
- NON-CONTRIBUTING DRAINAGE AREA

INDEX MAP



HYDROLOGY EXHIBIT "D"

DRAINAGE SUB-BASIN DELINEATION TIME OF CONCENTRATION FLOW PATHS AND FLOOD ROUTING MAP

N

400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = VARIES

GEORGE V. SABOL CONSULTING ENGINEERS, INC.

	BY	DATE
DESIGN	N/A	-
DESIGN CHK.	N/A	-
PLANS	PK	8/94
PLANS CHK.	TRL	8/94
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

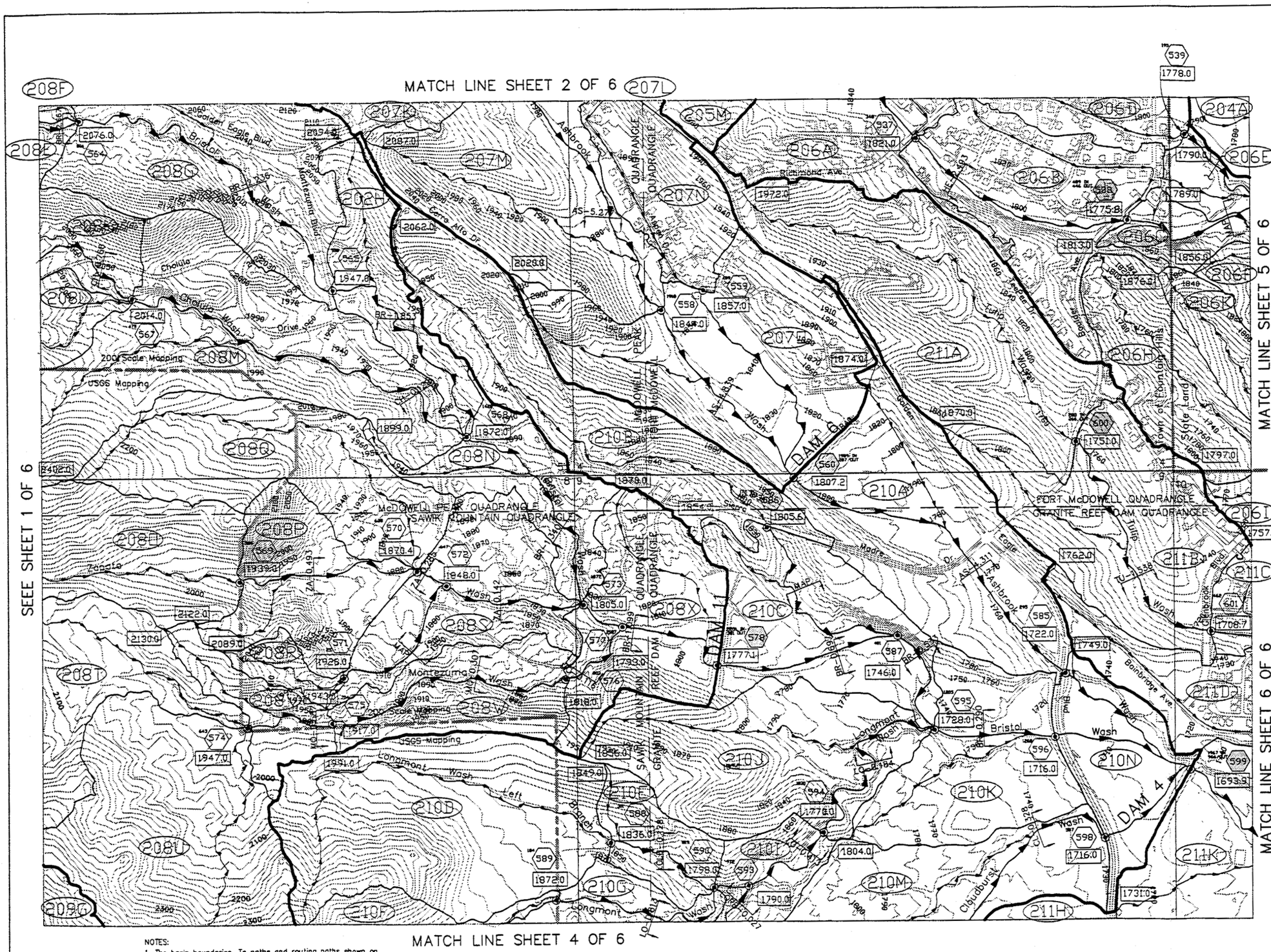
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 2 OF 6

Dwg. Name: \P\FTHILLS\ACAD\SHEET2.dwg
Date: REV. 17 OCT 1994 8:04am



NOTES:

1. The basin boundaries, Tc paths and routing paths shown on the USGS Mapping portion of this sheet were digitized using more accurate mapping not available in digital form. Ridge lines and flow paths may appear to be misaligned when plotted on the USGS Mapping in some locations.

200 Scale Mapping: Kenney Aerial Mapping
Flight Date = 8/91

USGS Mapping: US Geological Survey
Flight Date = 1962

THE CONTOURS AND PLANIMETRICS FOR THE 200 SCALE MAPPING WERE PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS 1"=200' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS AND BASED ON GROUND CONTROL SURVEY DATA PROVIDED BY ANDERSON-NELSON, INC. THE CONTOURS FOR THE USGS MAPPING CAME FROM THE USGS QUADRANGLE MAPS(7.5 MINUTE, 1"=2000'). ONLY 10-FOOT CONTOURS ARE SHOWN FOR THE 200 SCALE MAPPING, AND 20-FOOT CONTOURS FOR THE USGS MAPPING.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FLOOD DELINEATION STUDY OF FOUNTAIN HILLS NORTH

F.C.D. CONTRACT NO. FCD 92-04

LEGEND

NOTE: ALL FLOW RATES ARE FOR THE 100-YEAR PEAK DISCHARGE.

- DRAINAGE SUB-BASIN IDENTIFIER FOR SUBBASIN 207L — 207L
- DRAINAGE SUB-BASIN CONCENTRATION POINT 552 PEAK DISCHARGE IS 1244 cfs — 552
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- DRAINAGE SUB-BASIN BOUNDARY
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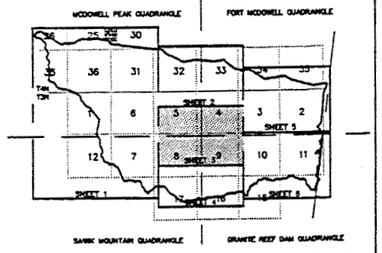
- HEC-1 REACH ROUTE CROSS SECTION LOCATION Ashbrook Wash HEC-2 Section 5.254 — AS-5.254
- Field Survey Cross Section — FIELD
- Cross Section From Available Mapping — MAP
- NON-CONTRIBUTING DRAINAGE AREA

INDEX MAP



HYDROLOGY EXHIBIT "D"

DRAINAGE SUB-BASIN DELINEATION TIME OF CONCENTRATION FLOW PATHS AND FLOOD ROUTING MAP

N

400' 0' 400' 800'

SCALE: 1"= 400'
CONTOUR INTERVAL = VARIES

GEORGE V. SABOL CONSULTING ENGINEERS, INC.

	BY	DATE
DESIGN	N/A	-
DESIGN CHK.	N/A	-
PLANS	PK	8/94
PLANS CHK.	TRL	8/94

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

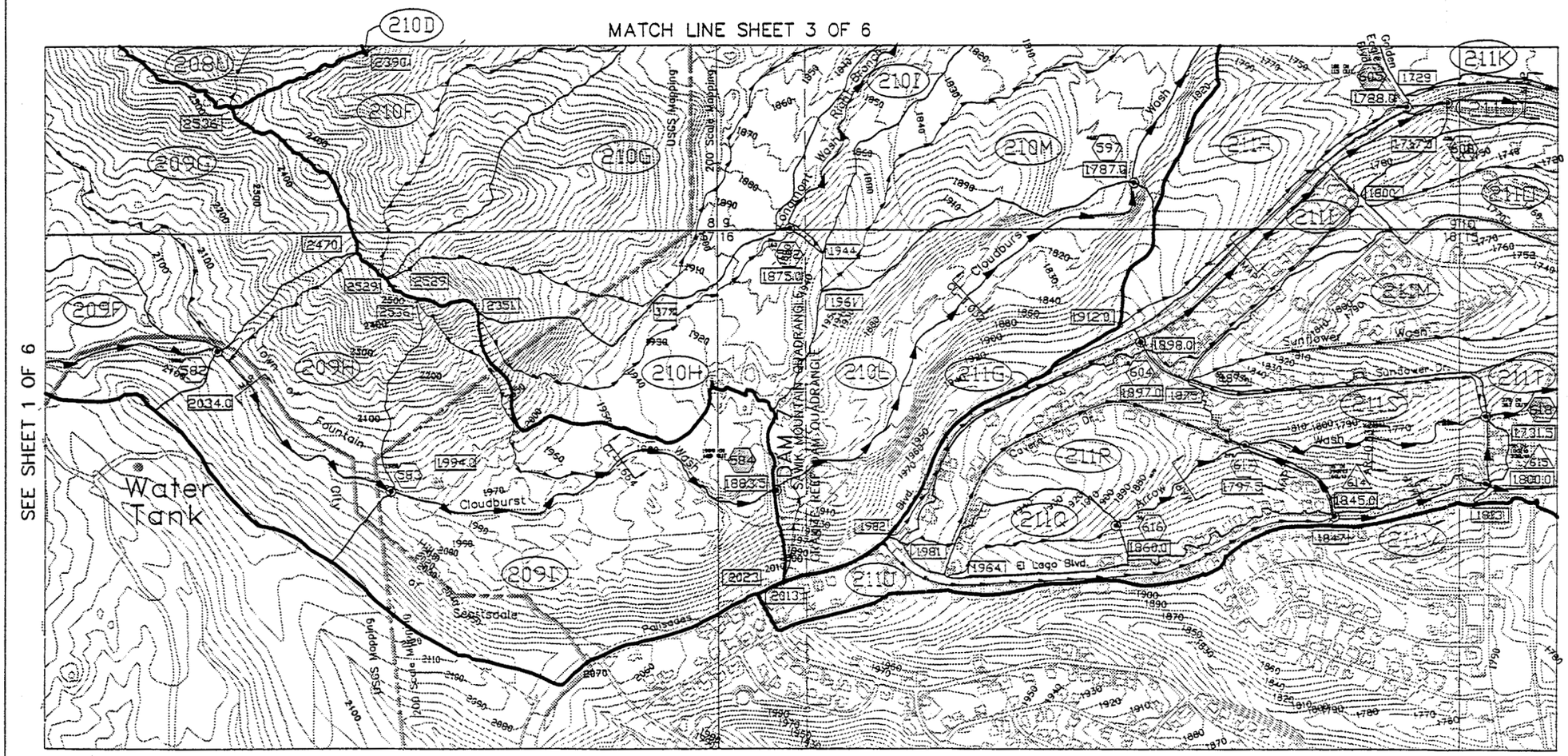
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 3 OF 6

Dwg. Name: V:\FHILLS\ACAD\SHEET3.dwg
Date: REV. 17 OCT 1994 08:01am



NOTES:

1. The basin boundaries, Tc paths and routing paths shown on the USGS Mapping portion of this sheet were digitized using more accurate mapping not available in digital form. Ridge lines and flow paths may appear to be misaligned when plotted on the USGS Mapping in some locations.

200 Scale Mapping: Kenney Aerial Mapping Flight Date = 8/91

USGS Mapping: US Geological Survey Flight Date = 1962

THE CONTOURS AND PLANIMETRICS FOR THE 200 SCALE MAPPING WERE PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS 1"=200' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS AND BASED ON GROUND CONTROL SURVEY DATA PROVIDED BY ANDERSON-NELSON, INC. THE CONTOURS FOR THE USGS MAPPING CAME FROM THE USGS QUADRANGLE MAPS(7.5 MINUTE, 1"=2000'). ONLY 10-FOOT CONTOURS ARE SHOWN FOR THE 200 SCALE MAPPING AND 20-FOOT CONTOURS FOR THE USGS MAPPING.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FLOOD DELINEATION STUDY OF FOUNTAIN HILLS NORTH

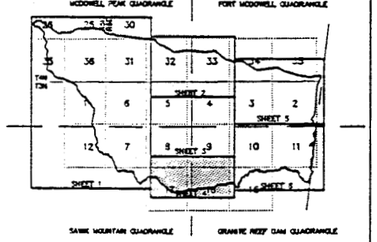
F.C.D. CONTRACT NO. FCD 92-04

LEGEND

NOTE: ALL FLOW RATES ARE FOR THE 100-YEAR PEAK DISCHARGE.

- DRAINAGE SUB-BASIN IDENTIFIER FOR SUBBASIN 207L — 207L
- DRAINAGE SUB-BASIN CONCENTRATION POINT 552 PEAK DISCHARGE IS 1244 cfs — 552
- HEC-1 RESERVOIR ROUTE AT CONCENTRATION POINT 513 INFLOW IS 389 cfs, OUTFLOW IS 369 cfs — 513
- DRAINAGE SUB-BASIN FLOW SPLIT CONCENTRATION POINT 505 PEAK DISCHARGE IS 32 cfs: 18 cfs SPLIT RIGHT, and 14 cfs SPLIT LEFT. — 505
- HEC-1 RESERVOIR ROUTE AND FLOW SPLIT AT CONCENTRATION POINT 521, PEAK INFLOW IS 386 cfs, OUTFLOW IS 286 cfs: 19 cfs SPLIT RIGHT, 256 cfs SPLIT LEFT. — 521
- ELEVATION AT CONCENTRATION POINT OR TOP OF Tc PATH — 1972.0
- VEGETATION COVER DENSITY (FIELD MEASURED) — 35%
- DRAINAGE SUB-BASIN CONCENTRATION POINT
- MAJOR DRAINAGE BASIN BOUNDARY
- DRAINAGE SUB-BASIN BOUNDARY
- HEC-1 ROUTING PATH
- Tc FLOW PATH
- FORT MCDOWELL INDIAN RESERVATION BOUNDARY
- CORPORATE BOUNDARY
- RANGE AND TOWNSHIP BOUNDARY
- USGS QUADRANGLE MAP BOUNDARY
- SECTION LINE
- LIMITS OF 200 SCALE MAPPING
- HEC-1 REACH ROUTE CROSS SECTION LOCATION Ashbrook Wash HEC-2 Section 5.254 — AS-5.254
- Field Survey Cross Section — FIELD
- Cross Section From Available Mapping — MAP
- NON-CONTRIBUTING DRAINAGE AREA

INDEX MAP



HYDROLOGY EXHIBIT "D"

DRAINAGE SUB-BASIN DELINEATION TIME OF CONCENTRATION FLOW PATHS AND FLOOD ROUTING MAP

400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = VARIES

GEORGE V. SABOL CONSULTING ENGINEERS, INC.

	BY	DATE
DESIGN	N/A	-
DESIGN CHK.	N/A	-
PLANS	PK	9/94
PLANS CHK.	TRL	9/94
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

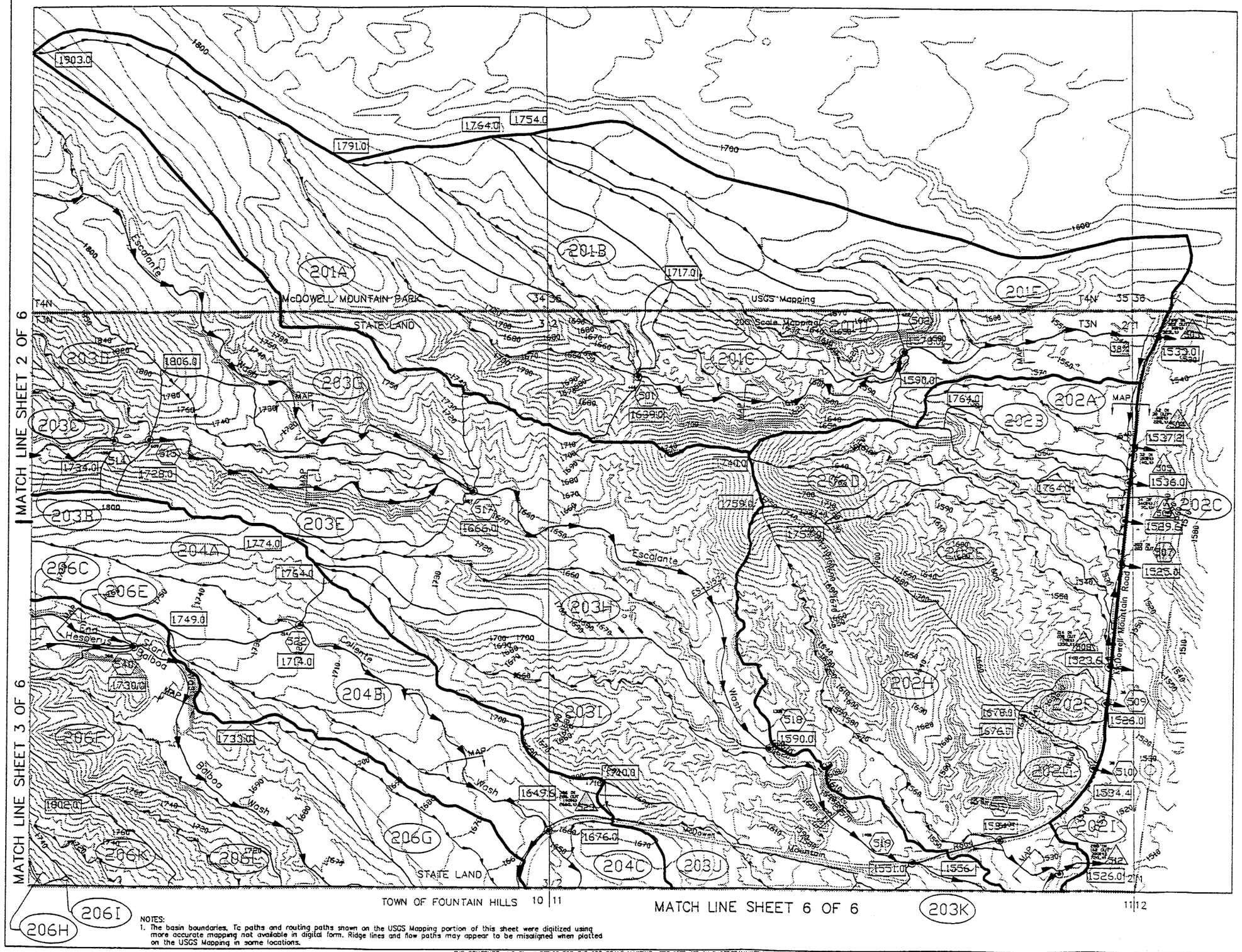
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 4 OF 6

Dwg. Name: \P\FHILLS\ACAD\SHEET4.dwg
Date: REV. 17 OCT 1994 09:15am



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FLOOD DELINEATION STUDY OF FOUNTAIN HILLS NORTH

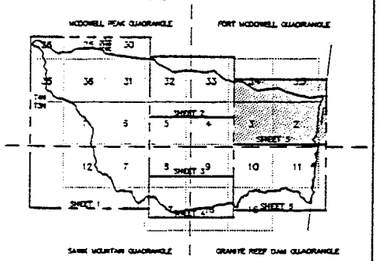
F.C.D. CONTRACT NO. FCD 92-04

LEGEND

NOTE: ALL FLOW RATES ARE FOR THE 100-YEAR PEAK DISCHARGE.

- DRAINAGE SUB-BASIN IDENTIFIER FOR SUBBASIN 207L — 207L
- DRAINAGE SUB-BASIN CONCENTRATION POINT 552 PEAK DISCHARGE IS 1244 cfs — 552
- HEC-1 RESERVOIR ROUTE AT CONCENTRATION POINT 513 INFLOW IS 389 cfs, OUTFLOW IS 369 cfs — 513
- DRAINAGE SUB-BASIN FLOW SPLIT CONCENTRATION POINT 505 PEAK DISCHARGE IS 32 cfs: 18 cfs SPLIT RIGHT, and 14 cfs SPLIT LEFT. — 505
- HEC-1 RESERVOIR ROUTE AND FLOW SPLIT AT CONCENTRATION POINT 523. PEAK INFLOW IS 286 cfs, OUTFLOW IS 286 cfs: 18 cfs SPLIT RIGHT, 268 cfs SPLIT LEFT. — 523
- ELEVATION AT CONCENTRATION POINT OR TOP OF Tc PATH — 1972.0
- VEGETATION COVER DENSITY (FIELD MEASURED) — 35%
- DRAINAGE SUB-BASIN CONCENTRATION POINT
- MAJOR DRAINAGE BASIN BOUNDARY
- DRAINAGE SUB-BASIN BOUNDARY
- HEC-1 ROUTING PATH
- Tc FLOW PATH
- FORT MCDOWELL INDIAN RESERVATION BOUNDARY
- CORPORATE BOUNDARY
- RANGE AND TOWNSHIP BOUNDARY
- USGS QUADRANGLE MAP BOUNDARY
- SECTION LINE
- LIMITS OF 200 SCALE MAPPING
- HEC-1 REACH ROUTE CROSS SECTION LOCATION
  - Ashbrook Wash HEC-2 Section 5.254 — AS-5.254
  - Field Survey Cross Section — FIELD
  - Cross Section From Available Mapping — MAP
- NON-CONTRIBUTING DRAINAGE AREA

INDEX MAP



HYDROLOGY EXHIBIT "D"

DRAINAGE SUB-BASIN DELINEATION TIME OF CONCENTRATION FLOW PATHS AND FLOOD ROUTING MAP

N

400' 0' 400' 800'

SCALE: 1" = 400'
CONTOUR INTERVAL = VARIES

GEORGE V. SABOL CONSULTING ENGINEERS, INC.

	BY	DATE
DESIGN	N/A	–
DESIGN CHK.	N/A	–
PLANS	PK	3/94
PLANS CHK.	TRL	3/94
SUBMITTED BY:		DATE

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 5 OF 6

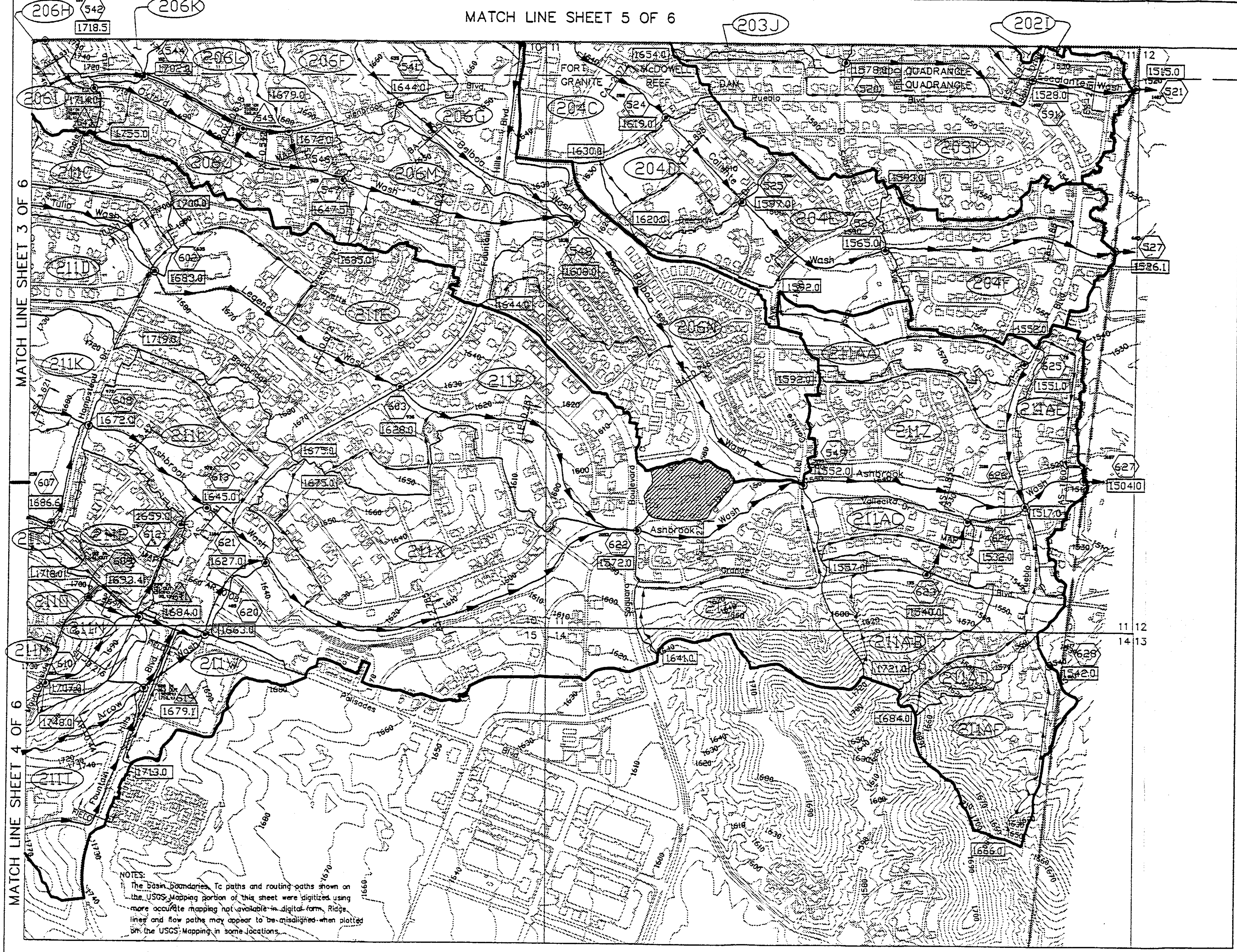
Dwg. Name: \P\FTHILLS\ACAD\SHEET5.dwg
Date: REV. 17 OCT 1994 09:45am

NOTES:
1. The basin boundaries, Tc paths and routing paths shown on the USGS Mapping portion of this sheet were digitized using more accurate mapping not available in digital form. Ridge lines and flow paths may appear to be misaligned when plotted on the USGS Mapping in some locations.

200 Scale Mapping: Kenney Aerial Mapping, Flight Date = 8/91

USGS Mapping: US Geological Survey, Flight Date = 1962

THE CONTOURS AND PLANIMETRICS FOR THE 200 SCALE MAPPING WERE PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS 1"=200' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS AND BASED ON GROUND CONTROL SURVEY DATA PROVIDED BY ANDERSON-NELSON, INC. THE CONTOURS FOR THE USGS MAPPING CAME FROM THE USGS QUADRANGLE MAPS(7.5 MINUTE, 1"=2000'). ONLY 10-FOOT CONTOURS ARE SHOWN FOR THE 200 SCALE MAPPING, AND 20-FOOT CONTOURS FOR THE USGS MAPPING.



NOTES:
1. The basin boundaries, Tc paths and routing paths shown on the USGS Mapping portion of this sheet were digitized using more accurate mapping not available in digital form. Ridge lines and flow paths may appear to be misaligned when plotted on the USGS Mapping in some locations.

200 Scale Mapping: Kenney Aerial Mapping
Flight Date = 8/91

USGS Mapping: US Geological Survey
Flight Date = 1962

THE CONTOURS AND PLANIMETRICS FOR THE 200 SCALE MAPPING WERE PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS 1"=200' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS AND BASED ON GROUND CONTROL SURVEY DATA PROVIDED BY ANDERSON-NELSON, INC. THE CONTOURS FOR THE USGS MAPPING CAME FROM THE USGS QUADRANGLE MAPS(7.5 MINUTE, 1"=2000'). ONLY 10-FOOT CONTOURS ARE SHOWN FOR THE 200 SCALE MAPPING, AND 20-FOOT CONTOURS FOR THE USGS MAPPING.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

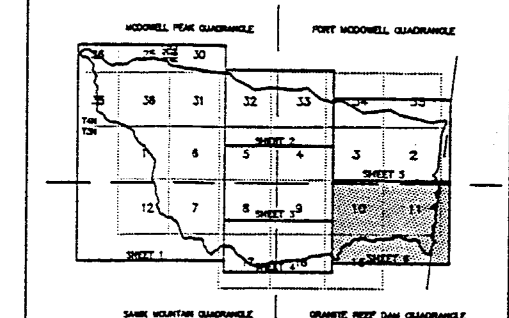
FLOOD DELINEATION STUDY OF FOUNTAIN HILLS NORTH

F.C.D. CONTRACT NO. FCD 92-04

LEGEND

NOTE: ALL FLOW RATES ARE FOR THE 100-YEAR PEAK DISCHARGE.

DRAINAGE SUB-BASIN IDENTIFIER FOR SUBBASIN 207L	207L
DRAINAGE SUB-BASIN CONCENTRATION POINT 552 PEAK DISCHARGE IS 1244 cfs	552
HEC-1 RESERVOIR ROUTE AT CONCENTRATION POINT 513 INFLOW IS 389 cfs, OUTFLOW IS 369 cfs	513
DRAINAGE SUB-BASIN FLOW SPLIT CONCENTRATION POINT 505 PEAK DISCHARGE IS 32 cfs; 18 cfs SPLIT RIGHT, and 14 cfs SPLIT LEFT.	505
HEC-1 RESERVOIR ROUTE AND FLOW SPLIT AT CONCENTRATION POINT 523. PEAK INFLOW IS 386 cfs, OUTFLOW IS 286 cfs; 19 cfs SPLIT RIGHT, 266 cfs SPLIT LEFT.	523
ELEVATION AT CONCENTRATION POINT OR TOP OF Tc PATH	1972.0
VEGETATION COVER DENSITY (FIELD MEASURED)	35%
DRAINAGE SUB-BASIN CONCENTRATION POINT	
MAJOR DRAINAGE BASIN BOUNDARY	
DRAINAGE SUB-BASIN BOUNDARY	
HEC-1 ROUTING PATH	
Tc FLOW PATH	
FORT MCDOWELL INDIAN RESERVATION BOUNDARY	
CORPORATE BOUNDARY	
RANGE AND TOWNSHIP BOUNDARY	
USGS QUADRANGLE MAP BOUNDARY	
SECTION LINE	
LIMITS OF 200 SCALE MAPPING	
HEC-1 REACH ROUTE CROSS SECTION LOCATION Ashbrook Wash HEC-2 Section 5.254	AS-5.254
Field Survey Cross Section	FIELD
Cross Section From Available Mapping	MAP
NON-CONTRIBUTING DRAINAGE AREA	



HYDROLOGY EXHIBIT "D"

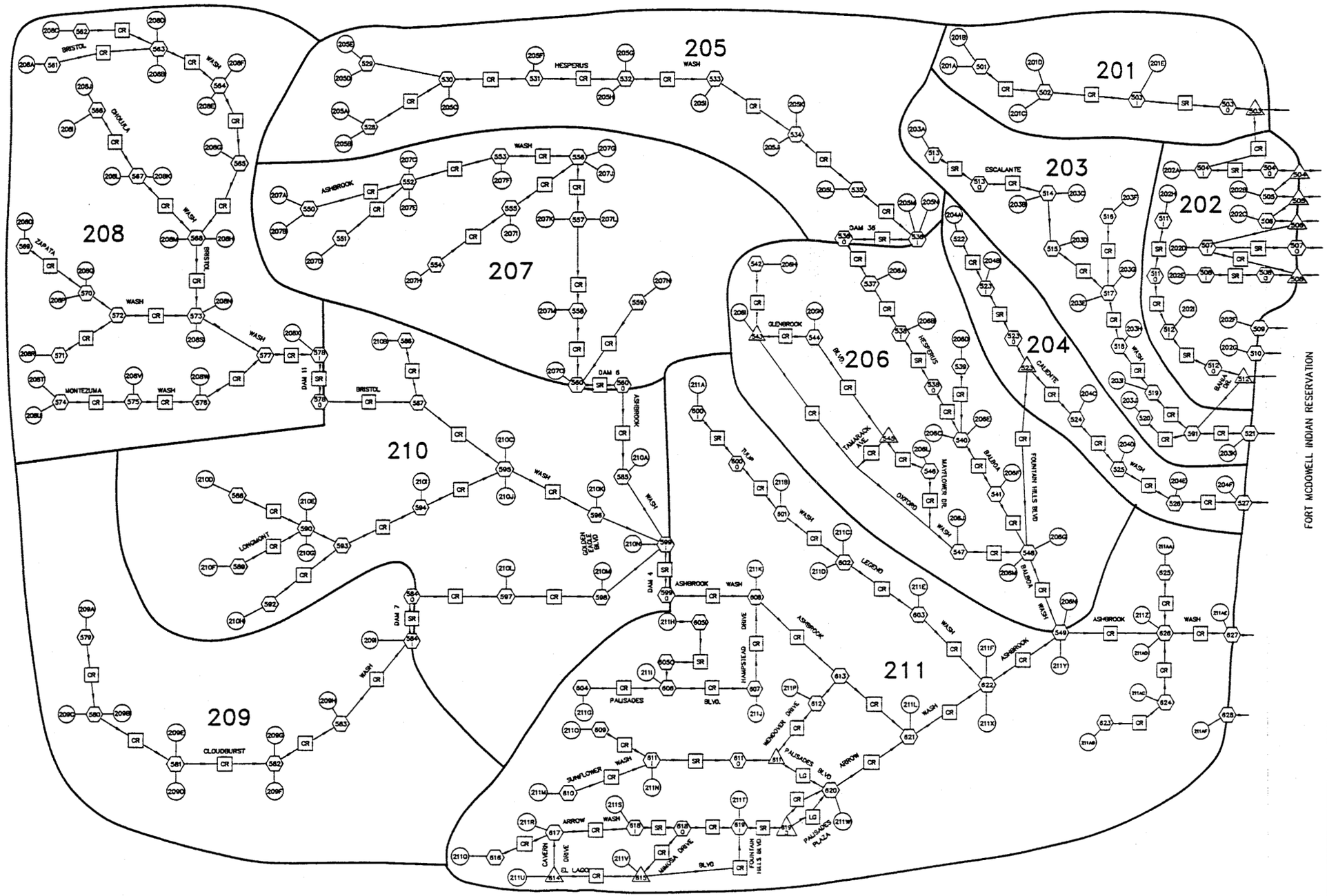
DRAINAGE SUB-BASIN DELINEATION TIME OF CONCENTRATION FLOW PATHS AND FLOOD ROUTING MAP

400' 0' 400' 800'
SCALE: 1" = 400'
CONTOUR INTERVAL = 10 FEET

GEORGE V. SABOL CONSULTING ENGINEERS, INC.

	BY	DATE	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN	N/A	-	
DESIGN CHK.	N/A	-	RECOMMENDED BY: DATE
PLANS	PK	8/94	APPROVED BY: DATE
PLANS CHK.	TRL	8/94	CHIEF ENGINEER AND GENERAL MANAGER
SUBMITTED BY: DATE:			SHEET 6 of 6

Dwg. Name: \P\FTHILLS\ACAD\SHEET6.dwg
Date: REV. 17 OCT 1994 10:30am



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FLOOD DELINEATION STUDY OF FOUNTAIN HILLS NORTH

F.C.D. CONTRACT NO. 92-04

LEGEND

MAJOR BASIN BOUNDARY

DIRECTION OF FLOW

HYDROGRAPH CALCULATION FOR SUB BASIN 207L — 207L

HYDROGRAPH COMBINATION OPERATION AND/OR CONCENTRATION POINT AT NODE 544 — 544

HYDROGRAPH COMBINATION OPERATION AND/OR CONCENTRATION POINT FOR A STORAGE ROUTE OPERATION AT NODE 599 — 599 (I / O)
I FOR INFLOW TO STORAGE ROUTE OPERATION
O FOR OUTFLOW OF STORAGE ROUTE OPERATION

HYDROGRAPH ROUTING OPERATION — CR
CR = NORMAL DEPTH CHANNEL ROUTE
SR = STORAGE ROUTE
LG = LAG ROUTE

DIVERSION OPERATION TO SIMULATE FLOW SPLIT AT NODE 543 — 543

MAJOR BASIN 202 — 202

NOTES

EXHIBIT "E"

HEC-1 FLOOD ROUTING DIAGRAM

N

GEORGE V. SABOL CONSULTING ENGINEERS, INC.

	BY	DATE
DESIGN	N/A	–
DESIGN CHK.	N/A	–
PLANS	PK	3/94
PLANS CHK.	TRL	3/94
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 1 OF 1

Dwg. Name: \P\FHILLS\ACAD\EX-E.dwg
Date: REV. JUL. 24, 1994 02:45pm

APPENDIX B

Multiple basin HEC-1 output

```
1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*              MAY   1991           *
*           VERSION 4.0.1E          *
*                                   *
*  RUN DATE  10/16/96  TIME  10:14:57 *
*                                   *
*************************************
```

```
*************************************
*                                   *
*   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        FOUNTAIN HILLS ADMP - Project No. 63
  2           ID        Future Condition Model                          File:   MODEL-6.IH1
  3           ID        100-Year, 6-Hour Storm, Clark Unit Hydrograph   Date:  03/08/96 CCC
              *
  4           IT       1                    1080
  5           IO       5
  6           IN      15
              *DIAGRAM
              *
  7           JD    3.30    0.01
  8           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
  9           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
 10           PC   0.962   0.972   0.983   0.991   1.000
 11           JD    3.28    0.50
 12           JD    3.23    2.80
 13           PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.067   0.076
 14           PC   0.087   0.100   0.120   0.163   0.252   0.451   0.694   0.837   0.900   0.938
 15           PC   0.950   0.963   0.975   0.988   1.000
 16           JD    3.04    16.0
 17           PC   0.000   0.015   0.020   0.030   0.048   0.063   0.076   0.090   0.105   0.119
 18           PC   0.135   0.152   0.175   0.222   0.304   0.472   0.670   0.796   0.868   0.912
 19           PC   0.946   0.960   0.973   0.987   1.000
 20           JD    2.67    90.0
 21           PC   0.000   0.021   0.035   0.051   0.071   0.087   0.105   0.125   0.143   0.160
 22           PC   0.179   0.201   0.232   0.281   0.364   0.500   0.658   0.773   0.841   0.888
 23           PC   0.927   0.945   0.964   0.982   1.000
 24           JD    1.88   500.0
 25           PC   0.000   0.024   0.043   0.059   0.078   0.098   0.119   0.141   0.162   0.186
 26           PC   0.212   0.239   0.271   0.321   0.408   0.515   0.627   0.735   0.814   0.864
 27           PC   0.907   0.930   0.954   0.977   1.000
              *
              *

 28           KK    207A
 29           KM   Sub-Basin   207A
 30           KM
 31           KM      The Clark Unit Hydrograph is used for this basin.
 32           KM          The Natural time-area relation is used for this basin.
 33           KM
 34           KM      Time of Concentration for this sub-basin is based on the following:
 35           KM          6-Hour Rainfall, Pattern No.  1.00
 36           KM          An rainfall areal reduction factor of 0.997
 37           KM
 38           KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 39           KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 40           KM   .45 .44 .44 .13 .09 .08 .04 .03 .03 .03 .03 .03 .01 .01 .01 .01 .01 .01
 41           KM
 42           KM          L=   1.356 miles, S=  351 feet/mile, Kb= .13
 43           KM
 44           BA   0.256
 45           LG    0.24    0.35    4.55    0.37   29.81
```

```
 46          UC   0.467   0.440
 47          UA       0       3       5       8      12      20      43      75      90      96
 48          UA     100
             *
1                                          HEC-1 INPUT                                          PAGE  2

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

 49          KK    207B
 50          KM   Sub-Basin   207B
 51          KM
 52          KM      The Clark Unit Hydrograph is used for this basin.
 53          KM          The Natural time-area relation is used for this basin.
 54          KM
 55          KM      Time of Concentration for this sub-basin is based on the following:
 56          KM          6-Hour Rainfall, Pattern No.  1.00
 57          KM          An rainfall areal reduction factor of 0.997
 58          KM
 59          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 60          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 61          KM   .45 .44 .44 .13 .09 .08 .04 .04 .03 .03 .03 .03 .01 .01 .01 .01 .01 .01
 62          KM
 63          KM          L=   1.312 miles, S=  359 feet/mile, Kb= .13
 64          KM
 65          BA   0.208
 66          LG    0.24    0.35    4.45    0.38   32.42
 67          UC   0.450   0.463
 68          UA       0       3       5       8      12      20      43      75      90      96
 69          UA     100
             *

 70          KK    C550
 71          KM      Hydrograph combine 207A + 207B at C550
 72          HC       2
             *

 73          KK  550552
 74          KM      Normal depth channel route from C550 to C552
 75          KM      Source:  Hydrology Field Reconnaissance
 76          RS       4    FLOW      -1
 77          RC   0.050   0.045   0.050  4410.0  0.0528
 78          RX  1000.0  1005.0  1018.0  1028.0  1038.0  1043.0  1048.0  1055.0
 79          RY  2188.0  2184.0  2180.0  2176.0  2176.0  2180.0  2184.0  2188.0
             *

 80          KK    207C
 81          KM   Sub-Basin   207C
 82          KM
 83          KM      The Clark Unit Hydrograph is used for this basin.
 84          KM          The Natural time-area relation is used for this basin.
 85          KM
 86          KM      Time of Concentration for this sub-basin is based on the following:
 87          KM          6-Hour Rainfall, Pattern No.  1.00
 88          KM          An rainfall areal reduction factor of 0.998
 89          KM
 90          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 91          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 92          KM   .45 .44 .44 .13 .09 .08 .03 .03 .03 .01 .01 .01 .00 .00 .00 .00 .00 .00
 93          KM
 94          KM          L=   0.974 miles, S=  297 feet/mile, Kb= .11
 95          KM
 96          BA   0.173
1                                          HEC-1 INPUT                                          PAGE  3

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

 97          LG    0.19    0.37    5.30    0.26   13.69
 98          UC   0.354   0.311
 99          UA       0       3       5       8      12      20      43      75      90      96
100          UA     100
             *

101          KK   C552L
102          KM      Hydrograph combine 550552 + 207C at C552 left branch
103          HC       2
             *

104          KK    207D
105          KM   Sub-Basin   207D
106          KM
107          KM      The Clark Unit Hydrograph is used for this basin.
108          KM          The HEC-1 time-area relation is used for this basin.
109          KM
110          KM      Time of Concentration for this sub-basin is based on the following:
111          KM          6-Hour Rainfall, Pattern No.  1.00
112          KM          An rainfall areal reduction factor of 0.997
113          KM
114          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
```

```
115          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
116          KM   .46 .45 .45 .15 .11 .10 .05 .05 .04 .04 .04 .04 .01 .01 .01 .01 .01 .01
117          KM
118          KM          L=   1.036 miles, S=  373 feet/mile, Kb= .09
119          KM
120          BA   0.197
121          LG    0.18    0.31    4.35    0.38   41.30
122          UC   0.288   0.241
             *

123          KK  551552
124          KM      Normal depth channel route from C551 to C552
125          KM      Source:  100 Scale 4' CI Mapping
126          RS       5    FLOW      -1
127          RC   0.050   0.045   0.050  4410.0  0.0528
128          RX  1000.0  1005.0  1018.0  1028.0  1038.0  1043.0  1048.0  1055.0
129          RY  2188.0  2184.0  2180.0  2176.0  2176.0  2180.0  2184.0  2188.0
             *

130          KK    207E
131          KM   Sub-Basin   207E
132          KM
133          KM      The Clark Unit Hydrograph is used for this basin.
134          KM          The Urban time-area relation is used for this basin.
135          KM
136          KM      Time of Concentration for this sub-basin is based on the following:
137          KM          6-Hour Rainfall, Pattern No.  1.00
138          KM          An rainfall areal reduction factor of 0.998
139          KM
140          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
141          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
142          KM   .46 .46 .46 .15 .12 .11 .05 .05 .04 .04 .04 .04 .01 .01 .01 .01 .01 .01
143          KM
```

1 HEC-1 INPUT PAGE 4

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

144          KM          L=   1.366 miles, S=  315 feet/mile, Kb= .07
145          KM
146          BA   0.157
147          LG    0.15    0.29    4.35    0.38   44.41
148          UC   0.308   0.370
149          UA       0       5      16      30      65      77      84      90      94      97
150          UA     100
             *

151          KK   C552R
152          KM      Hydrograph combine 551552 + 207E at C552 right branch
153          HC       2
             *

154          KK    C552
155          KM      Hydrograph combine C552L + C552R at C552
156          HC       2
             *

157          KK  552553
158          KM      Normal depth channel route from C552 to C553
159          KM      Source:  Hydrology Field Reconnaissance
160          RS       2    FLOW      -1
161          RC   0.060   0.050   0.060  1336.0  0.0337
162          RX   993.0  1010.0  1055.0  1061.0  1082.0  1096.0  1105.0  1127.0
163          RY    98.0    94.3    94.4    94.0    94.3    94.5    96.2    98.0
             *

164          KK    207F
165          KM   Sub-Basin   207F
166          KM
167          KM      The Clark Unit Hydrograph is used for this basin.
168          KM          The HEC-1 time-area relation is used for this basin.
169          KM
170          KM      Time of Concentration for this sub-basin is based on the following:
171          KM          6-Hour Rainfall, Pattern No.  1.00
172          KM          An rainfall areal reduction factor of 0.998
173          KM
174          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
175          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
176          KM   .46 .45 .45 .14 .11 .09 .04 .04 .04 .03 .03 .03 .01 .01 .01 .01 .01 .01
177          KM
178          KM          L=   0.794 miles, S=  296 feet/mile, Kb= .11
179          KM
180          BA   0.126
181          LG    0.20    0.32    4.40    0.39   38.35
182          UC   0.304   0.267
             *

183          KK    C553
184          KM      Hydrograph combine 552553 + 207F at C553
185          HC       2
```

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

 186          KK  553556
 187          KM      Normal depth channel route from C553 to C556
 188          KM      Source:  HEC-2 Cross Section: AS 6.118
 189          RS       2    FLOW      -1
 190          RC   0.055   0.045   0.060  2393.0  0.0255
 191          RX  9904.4  9945.9  9974.0  9987.4  9994.9 10008.6 10027.0 10045.3
 192          RY  2004.2  2003.9  1991.7  1990.4  1987.9  1988.2  1997.5  2006.7
              *

 193          KK    207G
 194          KM   Sub-Basin   207G
 195          KM
 196          KM      The Clark Unit Hydrograph is used for this basin.
 197          KM          The HEC-1 time-area relation is used for this basin.
 198          KM
 199          KM      Time of Concentration for this sub-basin is based on the following:
 200          KM          6-Hour Rainfall, Pattern No.  1.00
 201          KM          An rainfall areal reduction factor of 0.997
 202          KM
 203          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 204          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 205          KM   .45 .44 .44 .13 .10 .08 .04 .03 .03 .01 .01 .01 .00 .00 .00 .00 .00 .00
 206          KM
 207          KM          L=   1.467 miles, S=  198 feet/mile, Kb= .10
 208          KM
 209          BA   0.236
 210          LG    0.17    0.37    5.60    0.23    9.10
 211          UC   0.521   0.555
              *

 212          KK   C556L
 213          KM      Hydrograph combine 553556 + 207G at C556 left branch
 214          HC       2
              *

 215          KK    207H
 216          KM   Sub-Basin   207H
 217          KM
 218          KM      The Clark Unit Hydrograph is used for this basin.
 219          KM          The Urban time-area relation is used for this basin.
 220          KM
 221          KM      Time of Concentration for this sub-basin is based on the following:
 222          KM          6-Hour Rainfall, Pattern No.  1.00
 223          KM          An rainfall areal reduction factor of 0.998
 224          KM
 225          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 226          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 227          KM   .47 .46 .46 .16 .13 .12 .05 .05 .05 .04 .04 .04 .01 .01 .01 .01 .01 .01
 228          KM
 229          KM          L=   1.044 miles, S=  371 feet/mile, Kb= .05
 230          KM
 231          BA   0.124
 232          LG    0.13    0.27    4.35    0.36   46.78
 233          UC   0.204   0.215
```



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

 234          UA       0       5      16      30      65      77      84      90      94      97
 235          UA     100
              *

 236          KK  554555
 237          KM      Normal depth channel route from C554 to C555
 238          KM      Source:  100 Scale 4' CI Mapping
 239          RS       3    FLOW      -1
 240          RC   0.050   0.045   0.050  2497.0  0.0649
 241          RX  1000.0  1025.0  1080.0  1100.0  1120.0  1130.0  1140.0  1155.0
 242          RY  2192.0  2188.0  2186.0  2184.0  2184.0  2188.0  2192.0  2194.0
              *

 243          KK    207I
 244          KM   Sub-Basin   207I
 245          KM
 246          KM      The Clark Unit Hydrograph is used for this basin.
 247          KM          The Urban time-area relation is used for this basin.
 248          KM
 249          KM      Time of Concentration for this sub-basin is based on the following:
 250          KM          6-Hour Rainfall, Pattern No.  1.00
 251          KM          An rainfall areal reduction factor of 0.999
 252          KM
 253          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 254          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
```

```
 255          KM   .47 .47 .47 .16 .13 .13 .06 .06 .05 .04 .04 .04 .01 .01 .01 .01 .01 .01
 256          KM
 257          KM          L=   0.810 miles, S=  320 feet/mile, Kb= .03
 258          KM
 259          BA   0.073
 260          LG    0.09    0.25    4.40    0.35   50.00
 261          UC   0.142   0.159
 262          UA       0       5      16      30      65      77      84      90      94      97
 263          UA     100
              *

 264          KK    C555
 265          KM      Hydrograph combine 554555 + 207I at C555
 266          HC       2
              *

 267          KK  555556
 268          KM      Normal depth channel route from C555 to C556
 269          KM      Source:  200 Scale Mapping
 270          RS       5    FLOW      -1
 271          RC   0.050   0.050   0.055  3353.0  0.0480
 272          RX  1000.0  1050.0  1090.0  1095.0  1130.0  1150.0  1160.0  1185.0
 273          RY  2020.0  2016.5  2006.0  2004.0  2005.0  2006.0  2010.0  2020.0
              *
1                                          HEC-1 INPUT                                          PAGE  7

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

 274          KK    207J
 275          KM   Sub-Basin   207J
 276          KM
 277          KM      The Clark Unit Hydrograph is used for this basin.
 278          KM          The Urban time-area relation is used for this basin.
 279          KM
 280          KM      Time of Concentration for this sub-basin is based on the following:
 281          KM          6-Hour Rainfall, Pattern No.  1.00
 282          KM          An rainfall areal reduction factor of 0.999
 283          KM
 284          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 285          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 286          KM   .47 .47 .47 .16 .13 .12 .06 .06 .05 .04 .04 .04 .01 .01 .01 .01 .01 .01
 287          KM
 288          KM          L=   0.714 miles, S=  248 feet/mile, Kb= .04
 289          KM
 290          BA   0.093
 291          LG    0.10    0.26    4.40    0.34   48.61
 292          UC   0.171   0.154
 293          UA       0       5      16      30      65      77      84      90      94      97
 294          UA     100
              *

 295          KK   C556R
 296          KM      Hydrograph combine 555556 + 207J at C556 right branch
 297          HC       2
              *

 298          KK    C556
 299          KM      Hydrograph combine C556L + C556R at C556
 300          HC       2
              *

 301          KK  556557
 302          KM      Normal depth channel route from C556 to C557
 303          KM      Source:  HEC-2 Cross Section: AS 5.765
 304          RS       3    FLOW      -1
 305          RC   0.055   0.045   0.060  2298.0  0.0260
 306          RX  9957.1  9995.6 10000.0 10010.0 10040.4 10084.4 10104.2 10180.7
 307          RY  1949.3  1935.9  1935.8  1936.7  1936.7  1938.2  1947.1  1949.9
              *

 308          KK    207K
 309          KM   Sub-Basin   207K
 310          KM
 311          KM      The Clark Unit Hydrograph is used for this basin.
 312          KM          The Urban time-area relation is used for this basin.
 313          KM
 314          KM      Time of Concentration for this sub-basin is based on the following:
 315          KM          6-Hour Rainfall, Pattern No.  1.00
 316          KM          An rainfall areal reduction factor of 0.998
 317          KM
 318          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 319          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1                                          HEC-1 INPUT                                          PAGE  8

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

 320          KM   .47 .47 .47 .16 .13 .13 .06 .06 .05 .04 .04 .03 .01 .01 .01 .01 .01 .01
 321          KM
```

```
322          KM          L=   0.859 miles, S=  294 feet/mile, Kb= .05
323          KM
324          BA   0.130
325          LG    0.11    0.27    5.40    0.21   37.19
326          UC   0.196   0.172
327          UA       0       5      16      30      65      77      84      90      94      97
328          UA     100
             *

329          KK   C557R
330          KM     Hydrograph combine 556557 + 207K at C557
331          HC       2
             *

332          KK    207L
333          KM   Sub-Basin   207L
334          KM
335          KM     The Clark Unit Hydrograph is used for this basin.
336          KM         The Urban time-area relation is used for this basin.
337          KM
338          KM     Time of Concentration for this sub-basin is based on the following:
339          KM         6-Hour Rainfall, Pattern No.  1.00
340          KM         An rainfall areal reduction factor of 0.999
341          KM
342          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
343          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
344          KM   .48 .47 .47 .17 .14 .13 .06 .06 .06 .05 .05 .04 .01 .01 .01 .01 .01 .01
345          KM
346          KM         L=   0.667 miles, S=  236 feet/mile, Kb= .04
347          KM
348          BA   0.080
349          LG    0.09    0.26    6.00    0.16   33.25
350          UC   0.167   0.154
351          UA       0       5      16      30      65      77      84      90      94      97
352          UA     100
             *

353          KK    C557
354          KM     Hydrograph combine C557R + 207L at C557
355          HC       2
             *
             * *
             * * C557 is the total flow in Ashbrook Wash downstream of Golden Eagle Blvd.
             * * at fire station
             * *
             *

356          KK  557558
357          KM     Normal depth channel route from C557 to C558
358          KM     Source:  HEC-2 Cross Section: AS 5.254
359          RS       3    FLOW      -1
360          RC   0.055   0.045   0.060  2652.0  0.0242
361          RX  9662.0  9965.0  9967.0 10000.0 10072.0 10095.0 10122.0 10175.0
```



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

362          RY  1890.0  1885.9  1884.0  1878.0  1880.0  1886.0  1888.0  1890.0
             *

363          KK    207M
364          KM   Sub-Basin   207M
365          KM
366          KM     The Clark Unit Hydrograph is used for this basin.
367          KM         The Urban time-area relation is used for this basin.
368          KM
369          KM     Time of Concentration for this sub-basin is based on the following:
370          KM         6-Hour Rainfall, Pattern No.  1.00
371          KM         An rainfall areal reduction factor of 0.998
372          KM
373          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
374          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
375          KM   .47 .47 .46 .16 .13 .12 .06 .05 .05 .04 .03 .03 .01 .01 .01 .01 .01 .01
376          KM
377          KM         L=   0.636 miles, S=  295 feet/mile, Kb= .04
378          KM
379          BA   0.116
380          LG    0.11    0.28    6.00    0.17   23.09
381          UC   0.150   0.107
382          UA       0       5      16      30      65      77      84      90      94      97
383          UA     100
             *

384          KK    C558
385          KM     Hydrograph combine 557558 + 207M at C558
386          HC       2
             *

387          KK  558560
```

```
388          KM      Normal depth channel route from C558 to C560
389          KM      Source:  HEC-2 Cross Section: AS 4.839
390          RS       3    FLOW      -1
391          RC   0.055   0.045   0.060  1986.0  0.0185
392          RX  9777.0  9897.0  9933.1  9970.6 10042.2 10063.4 10121.6 10204.9
393          RY  1840.3  1837.3  1836.3  1824.3  1822.7  1828.5  1827.7  1842.7
             *

394          KK    2070
395          KM   Sub-Basin   2070
396          KM
397          KM      The Clark Unit Hydrograph is used for this basin.
398          KM          The Urban time-area relation is used for this basin.
399          KM
400          KM      Time of Concentration for this sub-basin is based on the following:
401          KM          6-Hour Rainfall, Pattern No.  1.00
402          KM          An rainfall areal reduction factor of 0.998
403          KM
404          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
405          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
406          KM   .47 .46 .46 .15 .12 .11 .05 .05 .05 .03 .02 .02 .01 .01 .01 .01 .01 .01
407          KM
408          KM          L=   0.643 miles, S=  275 feet/mile, Kb= .04
```



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

409          KM
410          BA   0.131
411          LG    0.13    0.29    5.60    0.21   23.47
412          UC   0.158   0.107
413          UA       0       5      16      30      65      77      84      90      94      97
414          UA     100
             *

415          KK   C560R
416          KM      Hydrograph combine 558560 + 2070 at C560 right branch
417          HC       2
             *

418          KK    207N
419          KM   Sub-Basin   207N
420          KM
421          KM      The Clark Unit Hydrograph is used for this basin.
422          KM          The Urban time-area relation is used for this basin.
423          KM
424          KM      Time of Concentration for this sub-basin is based on the following:
425          KM          6-Hour Rainfall, Pattern No.  1.00
426          KM          An rainfall areal reduction factor of 0.999
427          KM
428          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
429          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
430          KM   .47 .47 .47 .16 .13 .12 .06 .05 .05 .04 .04 .03 .01 .01 .01 .01 .01 .01
431          KM
432          KM          L=   0.431 miles, S=  190 feet/mile, Kb= .03
433          KM
434          BA   0.049
435          LG    0.09    0.25    4.80    0.27   35.87
436          UC   0.125   0.104
437          UA       0       5      16      30      65      77      84      90      94      97
438          UA     100
             *

439          KK  559560
440          KM      Normal depth channel route from C559 to C560
441          KM      Source:  200 Scale Mapping
442          RS       5    FLOW      -1
443          RC   0.050   0.045   0.050  2170.0  0.0230
444          RX  1000.0  1050.0  1080.0  1100.0  1110.0  1140.0  1170.0  1205.0
445          RY  1854.0  1852.0  1850.0  1848.0  1848.0  1850.0  1852.0  1854.0
             *

446          KK   C560I
447          KM      Hydrograph combine C560R + 559560 at C560I
448          HC       2
             *
             * *
             * * C560I is the total flow in Ashbrook Wash upstream of Dam 6
             * *
             *
```



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

449          KK   C560O
450          KM      Reservoir route at C560 (Dam 6).
451          RS       1    ELEV  1808.8
452          SV    0.00    1.71   14.81   34.65   60.43   93.47  135.64  183.00  186.00  191.44
```

```
453          SV  197.00  205.00  212.00  219.00  226.40  234.00  242.00  246.00  250.00  254.00
454          SE  1808.8  1812.0  1816.0  1820.0  1824.0  1828.0  1832.0  1835.4  1835.6  1836.0
455          SE  1836.4  1836.8  1837.2  1837.6  1838.0  1838.4  1838.8  1839.0  1839.2  1839.4
456          SQ       0      57     136     184     224     257     285     303     319     440
457          SQ     691    1055    1500    2018    2600    3243    3944    4315    4699    5097
458          RL                    0.40
             *
             * *
             * * End Basin 207.  Start Basin 210 temporarily
             * *
             *

459          KK  560585
460          KM      Normal depth channel route from C560 to C585
461          KM      Source:  HEC-2 Cross Section: AS4.311
462          RS       5    FLOW      -1
463          RC   0.050   0.025   0.050  3127.0  0.0272
464          RX  9850.4  9950.4  9974.4 10000.0 10035.5 10059.8 10080.4 10104.4
465          RY  1772.0  1771.7  1765.3  1765.3  1765.9  1768.5  1773.3  1773.7
             *

466          KK    210A
467          KM   Sub-Basin   210A
468          KM
469          KM      The Clark Unit Hydrograph is used for this basin.
470          KM          The Urban time-area relation is used for this basin.
471          KM
472          KM      Time of Concentration for this sub-basin is based on the following:
473          KM          6-Hour Rainfall, Pattern No.  1.00
474          KM          An rainfall areal reduction factor of 0.998
475          KM
476          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
477          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
478          KM   .46 .46 .46 .15 .12 .11 .05 .05 .04 .03 .03 .02 .00 .00 .00 .00 .00 .00
479          KM
480          KM          L=   0.631 miles, S=  233 feet/mile, Kb= .03
481          KM
482          BA   0.123
483          LG    0.09    0.25    5.00    0.24   16.65
484          UC   0.142   0.097
485          UA       0       5      16      30      65      77      84      90      94      97
486          UA     100
             *

487          KK    C585
488          KM      Hydrograph combine 560585 + 210A at C585
489          HC       2
             *
             * *
             * * C585 is the total flow in Ashbrook Wash at Golden Eagle Blvd. just
             * * upstream of DAM 4
             * *
             * * Temporarily stop Basin 210.  Start Basin 208
             * *
             * * Start Bristol Wash
             * *
             *
```

1 HEC-1 INPUT PAGE 12

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

490          KK    208A
491          KM   Sub-Basin   208A
492          KM
493          KM      The Clark Unit Hydrograph is used for this basin.
494          KM          The Urban time-area relation is used for this basin.
495          KM
496          KM      Time of Concentration for this sub-basin is based on the following:
497          KM          6-Hour Rainfall, Pattern No.  1.00
498          KM          An rainfall areal reduction factor of 0.998
499          KM
500          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
501          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
502          KM   .47 .47 .47 .16 .13 .13 .06 .06 .05 .04 .04 .04 .01 .01 .01 .01 .01 .01
503          KM
504          KM          L=   0.626 miles, S=  366 feet/mile, Kb= .03
505          KM
506          BA   0.139
507          LG    0.09    0.25    4.35    0.35   49.86
508          UC   0.121   0.075
509          UA       0       5      16      30      65      77      84      90      94      97
510          UA     100
             *

511          KK  561563
512          KM      Normal depth channel route from C561 to C563
513          KM      Source:  100 Scale 4' CI Mapping
514          RS       1    FLOW      -1
```

```
515          RC   0.050   0.045   0.050  2335.0  0.0856
516          RX  1000.0  1004.0  1009.0  1019.0  1037.0  1045.0  1060.0  1075.0
517          RY  2280.0  2276.0  2272.0  2268.0  2268.0  2272.0  2274.0  2276.0
             *

518          KK    208B
519          KM   Sub-Basin   208B
520          KM
521          KM      The Clark Unit Hydrograph is used for this basin.
522          KM          The Urban time-area relation is used for this basin.
523          KM
524          KM      Time of Concentration for this sub-basin is based on the following:
525          KM          6-Hour Rainfall, Pattern No.  1.00
526          KM          An rainfall areal reduction factor of 1.000
527          KM
528          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
529          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
530          KM   .47 .47 .47 .16 .13 .13 .06 .06 .05 .04 .04 .04 .01 .01 .01 .01 .01 .01
531          KM
532          KM          L=   0.491 miles, S=  325 feet/mile, Kb= .03
533          KM
534          BA   0.027
535          LG    0.09    0.25    4.35    0.35   50.00
536          UC   0.113   0.146
537          UA       0       5      16      30      65      77      84      90      94      97
538          UA     100
             *
```



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

539          KK   C563R
540          KM      Hydrograph combine 561563 + 206B at C563 right branch
541          HC       2
             *

542          KK    208C
543          KM   Sub-Basin   208C
544          KM
545          KM      The Clark Unit Hydrograph is used for this basin.
546          KM          The HEC-1 time-area relation is used for this basin.
547          KM
548          KM      Time of Concentration for this sub-basin is based on the following:
549          KM          6-Hour Rainfall, Pattern No.  1.00
550          KM          An rainfall areal reduction factor of 0.999
551          KM
552          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
553          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
554          KM   .46 .45 .45 .14 .11 .10 .05 .04 .04 .03 .03 .03 .01 .01 .01 .01 .01 .01
555          KM
556          KM          L=   0.639 miles, S=  387 feet/mile, Kb= .11
557          KM
558          BA   0.066
559          LG    0.20    0.32    4.35    0.38   40.11
560          UC   0.238   0.246
             *

561          KK  562563
562          KM      Normal depth channel route from C562 to C563
563          KM      Source:  100 Scale 4' CI Mapping
564          RS       $    FLOW      -1
565          RC   0.050   0.045   0.050  3745.0  0.1106
566          RX  1000.0  1007.0  1012.0  1017.0  1022.0  1027.0  1044.0  1064.0
567          RY  2420.0  2416.0  2412.0  2411.8  2411.8  2412.0  2416.0  2420.0
             *

568          KK    208D
569          KM   Sub-Basin   208D
570          KM
571          KM      The Clark Unit Hydrograph is used for this basin.
572          KM          The Urban time-area relation is used for this basin.
573          KM
574          KM      Time of Concentration for this sub-basin is based on the following:
575          KM          6-Hour Rainfall, Pattern No.  1.00
576          KM          An rainfall areal reduction factor of 0.999
577          KM
578          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
579          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
580          KM   .47 .47 .47 .16 .13 .13 .06 .06 .05 .04 .04 .04 .01 .01 .01 .01 .01 .01
581          KM
582          KM          L=   0.772 miles, S=  327 feet/mile, Kb= .03
583          KM
584          BA   0.075
585          LG    0.09    0.25    4.35    0.35   50.00
586          UC   0.138   0.146
```



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

```
587          UA       0       5      16      30      65      77      84      90      94      97
588          UA     100
             *

589          KK   C563L
590          KM      Hydrograph combine 562563 + 208D at C563 left branch
591          HC       2
             *

592          KK    C563
593          KM      Hydrograph combine C563R + C563L at C563
594          HC       2
             *

595          KK  563564
596          KM      Normal depth channel route from C563 to C564
597          KM      Source:  HEC-2 Cross Section: BR 2.667
598          RS       3    FLOW      -1
599          RC   0.080   0.080   0.080  2762.0  0.0540
600          RX  9947.0  9980.4  9986.4  9995.5 10000.0 10005.8 10021.9 10037.2
601          RY  2103.4  2089.5  2089.2  2084.5  2084.4  2084.3  2098.5  2100.6
             *

602          KK    208E
603          KM   Sub-Basin   208E
604          KM
605          KM      The Clark Unit Hydrograph is used for this basin.
606          KM          The Urban time-area relation is used for this basin.
607          KM
608          KM      Time of Concentration for this sub-basin is based on the following:
609          KM          6-Hour Rainfall, Pattern No.  1.00
610          KM          An rainfall areal reduction factor of 0.999
611          KM
612          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
613          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
614          KM   .47 .47 .47 .16 .13 .13 .06 .06 .05 .04 .04 .04 .01 .01 .01 .01 .01 .01
615          KM
616          KM          L=   0.644 miles, S=  306 feet/mile, Kb= .03
617          KM
618          BA   0.062
619          LG    0.09    0.25    4.35    0.35   50.00
620          UC   0.129   0.131
621          UA       0       5      16      30      65      77      84      90      94      97
622          UA     100
             *

623          KK   C564R
624          KM      Hydrograph combine 563564 + 208E at C564 right branch
625          HC       2
             *
```



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

626          KK    208F
627          KM   Sub-Basin   208F
628          KM
629          KM      The Clark Unit Hydrograph is used for this basin.
630          KM          The Urban time-area relation is used for this basin.
631          KM
632          KM      Time of Concentration for this sub-basin is based on the following:
633          KM          6-Hour Rainfall, Pattern No.  1.00
634          KM          An rainfall areal reduction factor of 0.999
635          KM
636          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
637          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
638          KM   .47 .47 .47 .16 .13 .13 .06 .06 .05 .04 .04 .04 .01 .01 .01 .01 .01 .01
639          KM
640          KM          L=   0.582 miles, S=  293 feet/mile, Kb= .03
641          KM
642          BA   0.069
643          LG    0.09    0.25    4.35    0.35   49.92
644          UC   0.125   0.109
645          UA       0       5      16      30      65      77      84      90      94      97
646          UA     100
             *

647          KK    C564
648          KM      Hydrograph combine C564R + 208F at C564
649          HC       2
             *

650          KK  564565
651          KM      Normal depth channel route from C564 to C565
652          KM      Source:  HEC-2 Cross Section: BR 2.236
653          RS       5    FLOW      -1
654          RC   0.080   0.080   0.080  3243.0  0.0398
655          RX  9937.7  9965.8  9985.5 10000.0 10008.6 10016.4 10037.5 10054.4
```

```
656          RY  1998.7  1998.1  1988.9  1988.8  1989.0  1990.4  1990.6  1999.1
             *

657          KK    208G
658          KM   Sub-Basin   208G
659          KM
660          KM      The Clark Unit Hydrograph is used for this basin.
661          KM          The Urban time-area relation is used for this basin.
662          KM
663          KM      Time of Concentration for this sub-basin is based on the following:
664          KM          6-Hour Rainfall, Pattern No.  1.00
665          KM          An rainfall areal reduction factor of 0.998
666          KM
667          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
668          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
669          KM   .48 .47 .47 .17 .14 .13 .06 .06 .06 .05 .05 .05 .01 .01 .01 .01 .01 .01
670          KM
671          KM          L=   0.772 miles, S=  299 feet/mile, Kb= .04
672          KM
673          BA   0.129
```



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

674          LG    0.11    0.26    4.60    0.31   54.19
675          UC   0.167   0.132
676          UA       0       5      16      30      65      77      84      90      94      97
677          UA     100
             *

678          KK    C565
679          KM      Hydrograph combine 564565 + 208G at C565
680          HC       2
             *

681          KK  565568
682          KM      Normal depth channel route from C565 to C568
683          KM      Source:  HEC-2 Cross Section: BR 1.853
684          RS       2    FLOW      -1
685          RC   0.050   0.060   0.045  2254.0  0.0333
686          RX  9966.2  9975.6  9985.0 10000.0 10017.9 10027.6 10040.1 10052.5
687          RY  1929.1  1924.5  1919.8  1918.3  1918.4  1919.6  1925.2  1930.8
             *

688          KK    208H
689          KM   Sub-Basin   208H
690          KM
691          KM      The Clark Unit Hydrograph is used for this basin.
692          KM          The Urban time-area relation is used for this basin.
693          KM
694          KM      Time of Concentration for this sub-basin is based on the following:
695          KM          6-Hour Rainfall, Pattern No.  1.00
696          KM          An rainfall areal reduction factor of 0.999
697          KM
698          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
699          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
700          KM   .47 .47 .47 .16 .13 .12 .06 .06 .05 .04 .03 .03 .01 .01 .01 .01 .01 .01
701          KM
702          KM          L=   0.632 miles, S=  283 feet/mile, Kb= .07
703          KM
704          BA   0.043
705          LG    0.12    0.30    5.60    0.21   35.43
706          UC   0.204   0.265
707          UA       0       5      16      30      65      77      84      90      94      97
708          UA     100
             *

709          KK   C568L
710          KM      Hydrograph combine 565568 + 208H at C568 left branch
711          HC       2
             *
             * *
             * * Start Cholula Wash
             * *
             *
```



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

712          KK    208I
713          KM   Sub-Basin   208I
714          KM
715          KM      The Clark Unit Hydrograph is used for this basin.
716          KM          The Urban time-area relation is used for this basin.
717          KM
718          KM      Time of Concentration for this sub-basin is based on the following:
719          KM          6-Hour Rainfall, Pattern No.  1.00
720          KM          An rainfall areal reduction factor of 0.998
```

```
721          KM
722          KM      EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
723          KM    5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
724          KM   .47 .47 .47 .16 .13 .13 .06 .06 .05 .04 .04 .04 .01 .01 .01 .01 .01 .01
725          KM
726          KM         L=   0.823 miles, S=  363 feet/mile, Kb= .03
727          KM
728          BA   0.117
729          LG    0.09    0.25    4.35    0.35   50.00
730          UC   0.138   0.119
731          UA      0       5      16      30      65      77      84      90      94      97
732          UA    100
             *

733          KK    208J
734          KM   Sub-Basin   208J
735          KM
736          KM      The Clark Unit Hydrograph is used for this basin.
737          KM          The Urban time-area relation is used for this basin.
738          KM
739          KM      Time of Concentration for this sub-basin is based on the following:
740          KM          6-Hour Rainfall, Pattern No.  1.00
741          KM          An rainfall areal reduction factor of 0.999
742          KM
743          KM      EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
744          KM    5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
745          KM   .47 .47 .47 .16 .13 .13 .06 .06 .05 .04 .04 .04 .01 .01 .01 .01 .01 .01
746          KM
747          KM         L=   0.974 miles, S=  353 feet/mile, Kb= .03
748          KM
749          BA   0.081
750          LG    0.09    0.25    4.35    0.35   50.00
751          UC   0.154   0.190
752          UA      0       5      16      30      65      77      84      90      94      97
753          UA    100
             *

754          KK    C566
755          KM      Hydrograph combine 208I + 208J at C566
756          HC      2
             *
```



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

757          KK  566567
758          KM      Normal depth channel route from C566 to C567
759          KM      Source:  HEC-2 Cross Section: CH 0.766
760          RS      2    FLOW      -1
761          RC   0.080   0.080   0.080  1463.0  0.0410
762          RX  9925.3  9949.0  9965.7  9988.3 10000.0 10016.2 10029.5 10042.7
763          RY  2047.9  2043.7  2035.3  2033.3  2031.4  2033.0  2040.1  2047.2
             *

764          KK    208K
765          KM   Sub-Basin   208K
766          KM
767          KM      The Clark Unit Hydrograph is used for this basin.
768          KM          The Urban time-area relation is used for this basin.
769          KM
770          KM      Time of Concentration for this sub-basin is based on the following:
771          KM          6-Hour Rainfall, Pattern No.  1.00
772          KM          An rainfall areal reduction factor of 0.999
773          KM
774          KM      EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
775          KM    5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
776          KM   .48 .47 .47 .17 .13 .13 .06 .06 .06 .05 .05 .05 .01 .01 .01 .01 .01 .01
777          KM
778          KM         L=   0.431 miles, S=  317 feet/mile, Kb= .03
779          KM
780          BA   0.048
781          LG    0.09    0.25    4.35    0.35   54.38
782          UC   0.104   0.087
783          UA      0       5      16      30      65      77      84      90      94      97
784          UA    100
             *

785          KK   C567L
786          KM      Hydrograph combine 566567 + 208K at C567 left branch
787          HC      2
             *

788          KK    208L
789          KM   Sub-Basin   208L
790          KM
791          KM      The Clark Unit Hydrograph is used for this basin.
792          KM          The Urban time-area relation is used for this basin.
793          KM
```

```
794          KM      Time of Concentration for this sub-basin is based on the following:
795          KM          6-Hour Rainfall, Pattern No.  1.00
796          KM          An rainfall areal reduction factor of 0.999
797          KM
798          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
799          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
800          KM   .47 .47 .47 .16 .13 .13 .06 .06 .05 .04 .04 .04 .01 .01 .01 .01 .01 .01
801          KM
802          KM          L=   0.655 miles, S=  334 feet/mile, Kb= .03
803          KM
804          BA   0.059
1                                          HEC-1 INPUT                                          PAGE 19

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

805          LG    0.09    0.25    4.40    0.35   51.31
806          UC   0.125   0.132
807          UA       0       5      16      30      65      77      84      90      94      97
808          UA     100
             *

809          KK    C567
810          KM      Hydrograph combine C567L + 208L at C567
811          HC       2
             *

812          KK  567568
813          KM      Normal depth channel route from C567 to C568
814          KM      Source:  HEC-2 Cross Section: CH 0.129
815          RS       5    FLOW      -1
816          RC   0.050   0.060   0.045  3650.0  0.0389
817          RX  9945.7  9958.4  9989.8 10000.0 10016.4 10028.3 10045.4 10059.8
818          RY  1912.1  1905.9  1899.0  1899.3  1898.9  1899.5  1907.1  1911.9
             *

819          KK    208M
820          KM   Sub-Basin   208M
821          KM
822          KM      The Clark Unit Hydrograph is used for this basin.
823          KM          The Urban time-area relation is used for this basin.
824          KM
825          KM      Time of Concentration for this sub-basin is based on the following:
826          KM          6-Hour Rainfall, Pattern No.  1.00
827          KM          An rainfall areal reduction factor of 0.998
828          KM
829          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
830          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
831          KM   .48 .48 .48 .17 .14 .14 .06 .06 .06 .05 .05 .05 .01 .01 .01 .01 .01 .01
832          KM
833          KM          L=   1.031 miles, S=  321 feet/mile, Kb= .03
834          KM
835          BA   0.159
836          LG    0.09    0.25    4.40    0.34   62.04
837          UC   0.163   0.144
838          UA       0       5      16      30      65      77      84      90      94      97
839          UA     100
             *

840          KK   C568R
841          KM      Hydrograph combine 567568 + 208M at C568 right branch
842          HC       2
             *

843          KK    C568
844          KM      Hydrograph combine C568L + C568R at C568
845          HC       2
             *
1                                          HEC-1 INPUT                                          PAGE 20

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

846          KK  568573
847          KM      Normal depth channel route from C568 to C573
848          KM      Source:  HEC-2 Cross Section: BR 1.340
849          RS       3    FLOW      -1
850          RC   0.098   0.075   0.075  2067.0  0.0324
851          RX  9921.8  9954.1  9968.9  9991.3 10000.0 10006.9 10025.2 10050.4
852          RY  1843.8  1840.4  1835.1  1834.7  1832.7  1833.3  1838.1  1854.0
             *

853          KK    208N
854          KM   Sub-Basin   208N
855          KM
856          KM      The Clark Unit Hydrograph is used for this basin.
857          KM          The Urban time-area relation is used for this basin.
858          KM
859          KM      Time of Concentration for this sub-basin is based on the following:
860          KM          6-Hour Rainfall, Pattern No.  1.00
```

```
861          KM          An rainfall areal reduction factor of 0.999
862          KM
863          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
864          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
865          KM   .49 .49 .49 .18 .15 .15 .07 .07 .07 .07 .06 .06 .01 .01 .01 .01 .01 .01
866          KM
867          KM          L=   0.589 miles, S=  160 feet/mile, Kb= .04
868          KM
869          BA   0.047
870          LG    0.09    0.25    6.20    0.15   62.49
871          UC   0.175   0.200
872          UA       0       5      16      30      65      77      84      90      94      97
873          UA     100
             *

874          KK   C573L
875          KM      Hydrograph combine 568573 + 208N at C573 left branch
876          HC       2
             *
             * *
             * * C573L is the total flow in Bristol Wash upstream of the confluence with
             * * Zapata Wash
             * *
             * * Start Zapata Wash
             * *
             *

877          KK    2080
878          KM   Sub-Basin   2080
879          KM
880          KM      The Clark Unit Hydrograph is used for this basin.
881          KM          The Urban time-area relation is used for this basin.
882          KM
883          KM      Time of Concentration for this sub-basin is based on the following:
884          KM          6-Hour Rainfall, Pattern No.  1.00
885          KM          An rainfall areal reduction factor of 0.997
886          KM
```



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

887          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
888          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
889          KM   .47 .47 .47 .16 .13 .13 .06 .06 .05 .05 .04 .04 .01 .01 .01 .01 .01 .01
890          KM
891          KM          L=   1.174 miles, S=  347 feet/mile, Kb= .03
892          KM
893          BA   0.230
894          LG    0.09    0.25    4.60    0.31   48.49
895          UC   0.167   0.133
896          UA       0       5      16      30      65      77      84      90      94      97
897          UA     100
             *

898          KK  569570
899          KM      Normal depth channel route from C569 to C570
900          KM      Source:  HEC-2 Cross Section: ZA 0.493
901          RS       1    FLOW      -1
902          RC   0.050   0.035   0.055  1696.0  0.0404
903          RX  9965.3  9985.5  9998.4 10000.0 10010.6 10019.1 10038.5 10038.5
904          RY  1919.3  1912.3  1908.1  1907.8  1905.2  1908.1  1920.1  1920.1
             *

905          KK    208P
906          KM   Sub-Basin   208P
907          KM
908          KM      The Clark Unit Hydrograph is used for this basin.
909          KM          The Urban time-area relation is used for this basin.
910          KM
911          KM      Time of Concentration for this sub-basin is based on the following:
912          KM          6-Hour Rainfall, Pattern No.  1.00
913          KM          An rainfall areal reduction factor of 0.999
914          KM
915          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
916          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
917          KM   .49 .48 .48 .18 .15 .14 .07 .07 .07 .06 .06 .06 .01 .01 .01 .01 .01 .01
918          KM
919          KM          L=   0.471 miles, S=  312 feet/mile, Kb= .03
920          KM
921          BA   0.058
922          LG    0.08    0.25    5.70    0.18   59.29
923          UC   0.108   0.087
924          UA       0       5      16      30      65      77      84      90      94      97
925          UA     100
             *

926          KK   C570R
927          KM      Hydrograph combine 569570 + 208P at C570 right branch
928          HC       2
```

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

  929             KK    208Q
  930             KM   Sub-Basin   208Q
  931             KM
  932             KM      The Clark Unit Hydrograph is used for this basin.
  933             KM          The Urban time-area relation is used for this basin.
  934             KM
  935             KM      Time of Concentration for this sub-basin is based on the following:
  936             KM          6-Hour Rainfall, Pattern No.  1.00
  937             KM          An rainfall areal reduction factor of 0.999
  938             KM
  939             KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
  940             KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
  941             KM   .48 .48 .48 .17 .14 .14 .06 .06 .06 .05 .05 .05 .01 .01 .01 .01 .01 .01
  942             KM
  943             KM          L=   0.823 miles, S=  324 feet/mile, Kb= .04
  944             KM
  945             BA   0.094
  946             LG    0.10    0.26    5.00    0.25   54.26
  947             UC   0.167   0.166
  948             UA      0       5      16      30      65      77      84      90      94      97
  949             UA    100
                  *

  950             KK    C570
  951             KM      Hydrograph combine C570R + 208Q at C570
  952             HC       2
                  *
                  * *
                  * * NOTE: 570572 is too short to route
                  * *
                  *

  953             KK    208R
  954             KM   Sub-Basin   208R
  955             KM
  956             KM      The Clark Unit Hydrograph is used for this basin.
  957             KM          The Urban time-area relation is used for this basin.
  958             KM
  959             KM      Time of Concentration for this sub-basin is based on the following:
  960             KM          6-Hour Rainfall, Pattern No.  1.00
  961             KM          An rainfall areal reduction factor of 1.000
  962             KM
  963             KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
  964             KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
  965             KM   .49 .48 .48 .18 .15 .14 .07 .07 .07 .06 .06 .06 .01 .01 .01 .01 .01 .01
  966             KM
  967             KM          L=   0.238 miles, S=  327 feet/mile, Kb= .03
  968             KM
  969             BA   0.010
  970             LG    0.08    0.23    6.20    0.15   55.16
  971             UC   0.083   0.100
  972             UA      0       5      16      30      65      77      84      90      94      97
  973             UA    100
                  *
```



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

  974             KK  571572
  975             KM      Normal depth channel route from C571 to C572
  976             KM      Source:  200 Scale Mapping
  977             RS       2    FLOW      -1
  978             RC   0.040   0.020   0.055  1379.0  0.0566
  979             RX  1000.0  1020.0  1040.0  1090.0  1122.0  1125.0  1135.0  1140.0
  980             RY  1894.0  1893.0  1892.0  1891.0  1891.0  1892.0  1894.0  1896.0
                  *

  981             KK    C572
  982             KM      Hydrograph combine C570 + 571572 at C572
  983             HC       2
                  *

  984             KK  572573
  985             KM      Normal depth channel route from C572 to C573
  986             KM      Source:  HEC-2 Cross Section: ZA 0.142
  987             RS       1    FLOW      -1
  988             RC   0.050   0.035   0.055  1285.0  0.0335
  989             RX  9961.8  9976.8  9982.5  9987.0 10009.5 10014.3 10022.1 10029.3
  990             RY  1840.3  1832.1  1831.2  1829.5  1829.2  1830.6  1831.2  1835.6
                  *

  991             KK    208S
```

```
 992          KM   Sub-Basin   208S
 993          KM
 994          KM      The Clark Unit Hydrograph is used for this basin.
 995          KM          The Urban time-area relation is used for this basin.
 996          KM
 997          KM      Time of Concentration for this sub-basin is based on the following:
 998          KM          6-Hour Rainfall, Pattern No.  1.00
 999          KM          An rainfall areal reduction factor of 0.999
1000          KM
1001          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1002          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1003          KM   .49 .49 .49 .18 .15 .15 .07 .07 .07 .07 .07 .07 .02 .02 .02 .02 .02 .02
1004          KM
1005          KM          L=   0.568 miles, S=  234 feet/mile, Kb= .03
1006          KM
1007          BA   0.068
1008          LG    0.08    0.24    6.20    0.15   67.07
1009          UC   0.129   0.112
1010          UA       0       5      16      30      65      77      84      90      94      97
1011          UA     100
              *

1012          KK   C573R
1013          KM      Hydrograph combine 572573 + 208S at C573 right branch
1014          HC       2
              *
1                                          HEC-1 INPUT                                          PAGE 24

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

1015          KK    C573
1016          KM      Hydrograph combine C573L + C573R at C573
1017          HC       2
              *
              * *
              * * NOTE: 573577 is too short to route
              * *
              * * C573 is the total flow in Bristol Wash upstream of the confluence
              * * with Montezuna Wash
              * *
              * * Start Montezuna Wash
              * *
              *

1018          KK    208T
1019          KM   Sub-Basin   208T
1020          KM
1021          KM      The Clark Unit Hydrograph is used for this basin.
1022          KM          The Urban time-area relation is used for this basin.
1023          KM
1024          KM      Time of Concentration for this sub-basin is based on the following:
1025          KM          6-Hour Rainfall, Pattern No.  1.00
1026          KM          An rainfall areal reduction factor of 0.998
1027          KM
1028          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1029          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1030          KM   .48 .47 .47 .17 .14 .13 .06 .06 .06 .05 .05 .04 .01 .01 .01 .01 .01 .01
1031          KM
1032          KM          L=   0.787 miles, S=  340 feet/mile, Kb= .03
1033          KM
1034          BA   0.132
1035          LG    0.09    0.25    5.20    0.22   44.80
1036          UC   0.138   0.107
1037          UA       0       5      16      30      65      77      84      90      94      97
1038          UA     100
              *

1039          KK    208U
1040          KM   Sub-Basin   208U
1041          KM
1042          KM      The Clark Unit Hydrograph is used for this basin.
1043          KM          The Urban time-area relation is used for this basin.
1044          KM
1045          KM      Time of Concentration for this sub-basin is based on the following:
1046          KM          6-Hour Rainfall, Pattern No.  1.00
1047          KM          An rainfall areal reduction factor of 0.998
1048          KM
1049          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1050          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1051          KM   .48 .47 .47 .17 .14 .13 .06 .06 .06 .05 .05 .04 .01 .01 .01 .01 .01 .01
1052          KM
1053          KM          L=   0.507 miles, S=  360 feet/mile, Kb= .03
1054          KM
1055          BA   0.134
1                                          HEC-1 INPUT                                          PAGE 25

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

```
1056          LG    0.09    0.25    5.30    0.21   44.19
1057          UC   0.108   0.057
1058          UA       0       5      16      30      65      77      84      90      94      97
1059          UA     100
              *

1060          KK    C574
1061          KM      Hydrograph combine 208T + 208U at C574
1062          HC       2
              *

1063          KK  574575
1064          KM      Normal depth channel route from C574 to C575
1065          KM      Source:  HEC-2 Cross Section: MO 0.587
1066          RS       1    FLOW      -1
1067          RC   0.070   0.050   0.055   823.0  0.0365
1068          RX  9945.0  9970.6  9986.7  9995.9 10002.3 10019.0 10036.7 10055.5
1069          RY  1932.6  1928.5  1922.9  1917.8  1917.7  1924.0  1931.1  1934.1
              *

1070          KK    208V
1071          KM   Sub-Basin   208V
1072          KM
1073          KM      The Clark Unit Hydrograph is used for this basin.
1074          KM          The Urban time-area relation is used for this basin.
1075          KM
1076          KM      Time of Concentration for this sub-basin is based on the following:
1077          KM          6-Hour Rainfall, Pattern No.  1.00
1078          KM          An rainfall areal reduction factor of 1.000
1079          KM
1080          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1081          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1082          KM   .48 .48 .48 .17 .14 .14 .07 .07 .06 .06 .06 .05 .01 .01 .01 .01 .01 .01
1083          KM
1084          KM          L=   0.354 miles, S=  319 feet/mile, Kb= .03
1085          KM
1086          BA   0.028
1087          LG    0.09    0.21    6.40    0.15   41.15
1088          UC   0.096   0.092
1089          UA       0       5      16      30      65      77      84      90      94      97
1090          UA     100
              *

1091          KK    C575
1092          KM      Hydrograph combine 574575 + 208V at C575
1093          HC       2
              *

1094          KK  575576
1095          KM      Normal depth channel route from C575 to C576
1096          KM      Source:  HEC-2 Cross Section: MO 0.307
1097          RS       2    FLOW      -1
1098          RC   0.070   0.050   0.055  2342.0  0.0423
1099          RX  9973.7  9974.0  9986.7 10000.0 10000.5 10009.7 10026.7 10037.3
1100          RY  1861.6  1861.5  1855.0  1853.0  1853.1  1854.8  1863.0  1867.1
              *
```



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

1101          KK    208W
1102          KM   Sub-Basin   208W
1103          KM
1104          KM      The Clark Unit Hydrograph is used for this basin.
1105          KM          The Urban time-area relation is used for this basin.
1106          KM
1107          KM      Time of Concentration for this sub-basin is based on the following:
1108          KM          6-Hour Rainfall, Pattern No.  1.00
1109          KM          An rainfall areal reduction factor of 0.999
1110          KM
1111          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1112          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1113          KM   .48 .48 .48 .17 .14 .14 .07 .07 .06 .06 .05 .05 .01 .01 .01 .01 .01 .01
1114          KM
1115          KM          L=   0.475 miles, S=  288 feet/mile, Kb= .03
1116          KM
1117          BA   0.050
1118          LG    0.09    0.23    6.20    0.16   42.74
1119          UC   0.113   0.099
1120          UA       0       5      16      30      65      77      84      90      94      97
1121          UA     100
              *

1122          KK    C576
1123          KM      Hydrograph combine 575576 + 208W at C576
1124          HC       2
              *
```

```
1125          KK  576577
1126          KM      Normal depth channel route from C576 to C577
1127          KM      Source:  HEC-2 Cross Section: MO 0.116
1128          RS       1    FLOW      -1
1129          RC   0.070   0.050   0.055   740.0  0.0338
1130          RX  9915.1  9960.0  9985.5 10000.0 10000.1 10007.0 10023.3 10023.4
1131          RY  1826.5  1826.4  1814.5  1812.3  1812.3  1814.8  1830.3  1830.4
              *
              * *
              * * 576577 is the total flow in Montezuna Wash just upstream of the confluence
              * * with Bristol Wash
              * *
              *

1132          KK    C577
1133          KM      Hydrograph combine C577L + 576577 at C570
1134          HC       2
              *
              * *
              * * C577 is the total flow in Bristol Wash downstream of the confluence
              * * with Montezuma Wash
              * *
              *
1                                        HEC-1 INPUT                                          PAGE 27

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

1135          KK  577578
1136          KM      Normal depth channel route from C577 to C578
1137          KM      Source:  HEC-2 Cross Section: BR 1.099
1138          RS       1    FLOW      -1
1139          RC   0.055   0.045   0.055  1078.0  0.0147
1140          RX  9865.3  9956.6  9991.1 10010.2 10034.3 10063.4 10139.7 10201.7
1141          RY  1821.8  1810.8  1793.2  1792.5  1795.5  1796.1  1813.8  1822.8
              *

1142          KK    208X
1143          KM   Sub-Basin   208X
1144          KM
1145          KM      The Clark Unit Hydrograph is used for this basin.
1146          KM          The Urban time-area relation is used for this basin.
1147          KM
1148          KM      Time of Concentration for this sub-basin is based on the following:
1149          KM          6-Hour Rainfall, Pattern No.  1.00
1150          KM          An rainfall areal reduction factor of 0.999
1151          KM
1152          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1153          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1154          KM   .47 .47 .47 .16 .13 .12 .06 .06 .05 .04 .04 .03 .01 .01 .01 .01 .01 .01
1155          KM
1156          KM          L=   0.417 miles, S=  223 feet/mile, Kb= .05
1157          KM
1158          BA   0.075
1159          LG    0.13    0.29    5.60    0.21   39.42
1160          UC   0.150   0.098
1161          UA       0       5      16      30      65      77      84      90      94      97
1162          UA     100
              *

1163          KK   C578I
1164          KM      Hydrograph combine 577578 + 208X at C578I
1165          HC       2
              *
              * *
              * * C578I is the total flow in Bristol Wash upstream of Dam 11
              * *
              *

1166          KK   C578O
1167          KM      Reservoir route at C578 (Dam 11).
1168          RS       1    ELEV  1779.2
1169          SV    0.00   16.38   31.30   53.65   84.39  126.17  138.00  143.00  147.00  154.47
1170          SV  161.00  167.00  174.00  181.00  187.43  194.00  202.00  205.00
1171          SE  1779.2  1794.0  1798.0  1802.0  1806.0  1810.0  1810.8  1811.2  1811.6  1812.0
1172          SE  1812.4  1812.8  1813.2  1813.6  1814.0  1814.4  1814.8  1815.0
1173          SQ       0     131     181     221     254     283     305     325     328     366
1174          SQ     522     812    1194    1651    2176    2763    3406    4104    4855    5250
1175          SE  1779.2  1786.0  1790.0  1794.0  1798.0  1802.0  1806.0  1810.0  1810.8  1811.2
1176          SE  1811.6  1812.0  1812.4  1812.8  1813.2  1813.6  1814.0  1814.4  1814.8  1815.0
1177          RL                    0.97
              *
              * *
              * * End Basin 208.  Rejoin Basin 210
              * *
              *
1                                        HEC-1 INPUT                                          PAGE 28

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

```
1178          KK  578587
1179          KM      Normal depth channel route from C578 to C587
1180          KM      Source:  HEC-2 Cross Section: BR 0.697
1181          RS       3    FLOW     -1
1182          RC   0.055   0.045   0.055  1628.0  0.0191
1183          RX  9926.4  9949.5  9960.1  9984.7 10000.0 10014.1 10031.5 10049.4
1184          RY  1763.0  1762.6  1761.8  1757.0  1757.1  1756.9  1761.4  1768.1
              *

1185          KK   210B
1186          KM   Sub-Basin   210B
1187          KM
1188          KM      The Clark Unit Hydrograph is used for this basin.
1189          KM          The Urban time-area relation is used for this basin.
1190          KM
1191          KM      Time of Concentration for this sub-basin is based on the following:
1192          KM          6-Hour Rainfall, Pattern No.  1.00
1193          KM          An rainfall areal reduction factor of 0.999
1194          KM
1195          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1196          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1197          KM   .48 .47 .47 .17 .14 .13 .06 .06 .06 .05 .05 .04 .01 .01 .01 .01 .01 .01
1198          KM
1199          KM          L=   0.930 miles, S=  251 feet/mile, Kb= .03
1200          KM
1201          BA   0.107
1202          LG    0.08    0.25    5.80    0.17   37.15
1203          UC   0.167   0.171
1204          UA       0       5      16      30      65      77      84      90      94      97
1205          UA     100
              *

1206          KK   C5860
1207          KM      Reservoir route at C586.
1208          RS       1    ELEV  1804.4
1209          SV    0.00    0.05    0.36    1.09    2.45    4.45    7.00    9.50    9.60   10.00
1210          SV   10.34   10.70   11.20   11.60   12.10   12.50
1211          SE  1804.4  1806.0  1808.0  1810.0  1812.0  1814.0  1816.0 1817.55  1817.6  1817.8
1212          SE  1818.0  1818.2  1818.4  1818.6  1818.8  1819.0
1213          SQ       0      37     130     219     284     322     353     375     377     393
1214          SQ     432     492     574     680     808     959
              *

1215          KK  586587
1216          KM      Normal depth channel route from C586 to C587
1217          KM      Source:  200 Scale Mapping
1218          RS       3    FLOW     -1
1219          RC   0.040   0.035   0.040  1905.0  0.0313
1220          RX  1000.0  1020.0  1050.0  1055.0  1065.0  1070.0  1130.0  1150.0
1221          RY  1782.0  1780.0  1772.0  1771.0  1771.0  1772.0  1778.0  1782.0
              *
```



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

1222          KK    C587
1223          KM      Hydrograph combine 578587 + 586587 at C578
1224          HC       2
              *

1225          KK  587595
1226          KM      Normal depth channel route from C587 to C595
1227          KM      Source:  HEC-2 Cross Section: BR 0.533
1228          RS       1    FLOW     -1
1229          RC   0.055   0.045   0.055  1039.0  0.0173
1230          RX  9977.2  9980.4  9983.6  9989.9 10009.9 10020.3 10028.8 10037.3
1231          RY  1745.2  1744.0  1742.8  1740.3  1740.3  1742.4  1743.0  1743.6
              *

1232          KK    210C
1233          KM   Sub-Basin   210C
1234          KM
1235          KM      The Clark Unit Hydrograph is used for this basin.
1236          KM          The Urban time-area relation is used for this basin.
1237          KM
1238          KM      Time of Concentration for this sub-basin is based on the following:
1239          KM          6-Hour Rainfall, Pattern No.  1.00
1240          KM          An rainfall areal reduction factor of 0.999
1241          KM
1242          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1243          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1244          KM   .46 .46 .46 .15 .12 .11 .05 .05 .04 .03 .02 .02 .01 .01 .01 .01 .01 .01
1245          KM
1246          KM          L=   0.637 miles, S=  198 feet/mile, Kb= .03
1247          KM
1248          BA   0.082
1249          LG    0.11    0.26    4.80    0.28   22.29
```

```
1250          UC   0.150   0.131
1251          UA       0       5      16      30      65      77      84      90      94      97
1252          UA     100
              *

1253          KK   C595L
1254          KM      Hydrograph combine 587595 + 210C at C595 left branch
1255          HC       2
              *
              * *
              * * C595L is the total flow in Bristol Wash upstream of the confluence
              * * with Longmont Wash
              * *
              * * Start Longmont Wash Left Branch
              * *
              *
1                                          HEC-1 INPUT                                          PAGE 30

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


1256          KK    210D
1257          KM   Sub-Basin   210D
1258          KM
1259          KM      The Clark Unit Hydrograph is used for this basin.
1260          KM          The Urban time-area relation is used for this basin.
1261          KM
1262          KM      Time of Concentration for this sub-basin is based on the following:
1263          KM          6-Hour Rainfall, Pattern No.  1.00
1264          KM          An rainfall areal reduction factor of 0.998
1265          KM
1266          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1267          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1268          KM   .48 .47 .47 .17 .13 .13 .06 .06 .06 .05 .04 .04 .01 .01 .01 .01 .01 .01
1269          KM
1270          KM          L=   0.832 miles, S=  325 feet/mile, Kb= .03
1271          KM
1272          BA   0.140
1273          LG    0.09    0.25    5.80    0.18   33.66
1274          UC   0.146   0.116
1275          UA       0       5      16      30      65      77      84      90      94      97
1276          UA     100
              *

1277          KK  588590
1278          KM      Normal depth channel route from C588 to C590
1279          KM      Source:  HEC-2 Cross Section: LO-LB1 0.128
1280          RS       1    FLOW      -1
1281          RC   0.065   0.050   0.060  1117.0  0.0340
1282          RX  9931.7  9960.6  9984.9 10005.7 10019.1 10033.8 10151.6 10172.9
1283          RY  1839.3  1833.5  1825.9  1824.7  1825.9  1828.8  1832.9  1838.0
              *

1284          KK    210E
1285          KM   Sub-Basin   210E
1286          KM
1287          KM      The Clark Unit Hydrograph is used for this basin.
1288          KM          The Urban time-area relation is used for this basin.
1289          KM
1290          KM      Time of Concentration for this sub-basin is based on the following:
1291          KM          6-Hour Rainfall, Pattern No.  1.00
1292          KM          An rainfall areal reduction factor of 1.000
1293          KM
1294          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1295          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1296          KM   .48 .48 .48 .17 .14 .14 .06 .06 .06 .06 .05 .05 .00 .00 .00 .00 .00 .00
1297          KM
1298          KM          L=   0.339 miles, S=  151 feet/mile, Kb= .03
1299          KM
1300          BA   0.028
1301          LG    0.09    0.17    6.80    0.12   15.00
1302          UC   0.117   0.111
1303          UA       0       5      16      30      65      77      84      90      94      97
1304          UA     100
              *
1                                          HEC-1 INPUT                                          PAGE 31

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


1305          KK   C590L
1306          KM      Hydrograph combine 588590 + 210E at C590 left branch
1307          HC       2
              *
              * *
              * * C590L is the total flow in Longmont Wash Left Branch upstream of the
              * * confluence with Longmont Wash
              * *
              * * Start Longmont Wash
```

```
                    * *
                    *

1308                KK    210F
1309                KM   Sub-Basin   210F
1310                KM
1311                KM      The Clark Unit Hydrograph is used for this basin.
1312                KM          The Urban time-area relation is used for this basin.
1313                KM
1314                KM      Time of Concentration for this sub-basin is based on the following:
1315                KM          6-Hour Rainfall, Pattern No.  1.00
1316                KM          An rainfall areal reduction factor of 0.999
1317                KM
1318                KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1319                KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1320                KM   .47 .47 .47 .16 .13 .13 .06 .06 .05 .04 .04 .04 .01 .01 .01 .01 .01 .01
1321                KM
1322                KM          L=   0.668 miles, S=  349 feet/mile, Kb= .03
1323                KM
1324                BA   0.093
1325                LG    0.09    0.25    4.40    0.34   49.44
1326                UC   0.125   0.103
1327                UA      0       5      16      30      65      77      84      90      94      97
1328                UA    100
                    *

1329                KK  589590
1330                KM      Normal depth channel route from C589 to C590
1331                KM      Source:  HEC-2 Cross Section: LO 0.813
1332                RS       2    FLOW      -1
1333                RC   0.065   0.050   0.060  1751.0  0.0423
1334                RX  9957.0  9963.5  9984.5  9996.1 10008.8 10017.4 10040.1 10060.8
1335                RY  1843.8  1842.9  1837.0  1831.2  1830.6  1836.1  1838.3  1842.1
                    *

1336                KK    210G
1337                KM   Sub-Basin   210G
1338                KM
1339                KM      The Clark Unit Hydrograph is used for this basin.
1340                KM          The Urban time-area relation is used for this basin.
1341                KM
1342                KM      Time of Concentration for this sub-basin is based on the following:
1343                KM          6-Hour Rainfall, Pattern No.  1.00
1344                KM          An rainfall areal reduction factor of 0.998
1345                KM
```



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

1346                KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1347                KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1348                KM   .48 .47 .47 .17 .13 .13 .06 .06 .05 .05 .04 .04 .01 .01 .01 .01 .01 .01
1349                KM
1350                KM          L=   0.969 miles, S=  333 feet/mile, Kb= .03
1351                KM
1352                BA   0.162
1353                LG    0.09    0.25    5.30    0.22   39.22
1354                UC   0.154   0.128
1355                UA      0       5      16      30      65      77      84      90      94      97
1356                UA    100
                    *

1357                KK   C590R
1358                KM      Hydrograph combine 589590 + 210G at C590 right branch
1359                HC       2
                    *
                    * * NOTE: 590593 is too short to route
                    * *
                    * * C590R is the total flow in Longmont Wash upstream of the confluence
                    * * with Longmont Wash Left Branch
                    * *
                    *

1360                KK    C590
1361                KM      Hydrograph combine C590L + C590R at C590
1362                HC       2
                    *
                    * * C590 is the total flow in Longmont Wash upstream of the confluence
                    * * Longmont Wash Right Branch
                    * *
                    * * Start Longmont Wash Right Branch
                    * *
                    *

1363                KK    210H
1364                KM   Sub-Basin   210H
1365                KM
1366                KM      The Clark Unit Hydrograph is used for this basin.
1367                KM          The Urban time-area relation is used for this basin.
```

```
1368          KM
1369          KM      Time of Concentration for this sub-basin is based on the following:
1370          KM          6-Hour Rainfall, Pattern No.  1.00
1371          KM          An rainfall areal reduction factor of 0.999
1372          KM
1373          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1374          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1375          KM   .47 .47 .47 .16 .13 .13 .06 .06 .05 .05 .04 .04 .01 .01 .01 .01 .01 .01
1376          KM
1377          KM          L=   0.565 miles, S=  340 feet/mile, Kb= .03
1378          KM
1379          BA   0.070
1380          LG    0.09    0.23    6.20    0.16   21.74
1381          UC   0.117   0.098
1382          UA       0       5      16      30      65      77      84      90      94      97
1                                          HEC-1 INPUT                                          PAGE 33

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

1383          UA     100
              *

1384          KK  592593
1385          KM      Normal depth channel route from C592 to C593
1386          KM      Source:  HEC-2 Cross Section: LO-RB1 0.027
1387          RS       3    FLOW      -1
1388          RC   0.065   0.050   0.060  2062.0  0.0412
1389          RX  9920.6  9964.0  9984.7  9996.1 10003.9 10025.4 10041.1 10057.9
1390          RY  1820.0  1804.5  1801.2  1797.3  1797.3  1808.5  1818.3  1820.1
              *
              * *
              * * 592593 is the total flow in Longmont Wash Right Branch upstream
              * * of the confluence with Longmont Wash
              * *
              *

1391          KK    C593
1392          KM      Hydrograph combine C590 + C593R at C593
1393          HC       2
              *
              * *
              * * C593 is the total flow in Longmont Wash below the confluence with
              * * Longmont Wash Right Branch
              * *
              *

1394          KK  593594
1395          KM      Normal depth channel route from C593 to C594
1396          KM      Source:  HEC-2 Cross Section: LO0.413
1397          RS       2    FLOW      -1
1398          RC   0.065   0.050   0.060   988.0  0.0202
1399          RX  9937.2  9958.5  9981.7  9992.8 10007.7 10024.4 10041.9 10067.8
1400          RY  1783.6  1773.5  1773.9  1771.3  1771.2  1774.5  1778.7  1788.7
              *

1401          KK    210I
1402          KM   Sub-Basin   210I
1403          KM
1404          KM      The Clark Unit Hydrograph is used for this basin.
1405          KM          The Urban time-area relation is used for this basin.
1406          KM
1407          KM      Time of Concentration for this sub-basin is based on the following:
1408          KM          6-Hour Rainfall, Pattern No.  1.00
1409          KM          An rainfall areal reduction factor of 0.999
1410          KM
1411          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1412          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1413          KM   .49 .48 .48 .18 .15 .14 .07 .07 .06 .06 .06 .06 .01 .01 .01 .00 .00 .00
1414          KM
1415          KM          L=   0.634 miles, S=  250 feet/mile, Kb= .03
1416          KM
1417          BA   0.049
1418          LG    0.09    0.15    7.60    0.09   15.00
1419          UC   0.138   0.158
1                                          HEC-1 INPUT                                          PAGE 34

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

1420          UA       0       5      16      30      65      77      84      90      94      97
1421          UA     100
              *

1422          KK    C594
1423          KM      Hydrograph combine 593594 + 210I at C594
1424          HC       2
              *

1425          KK  594595
1426          KM      Normal depth channel route from C594 to C595
```

```
1427          KM      Source:  HEC-2 Cross Section: LO 0.184
1428          RS       3    FLOW      -1
1429          RC   0.065   0.050   0.060  2093.0  0.0201
1430          RX  9814.0  9836.5  9878.5  9988.2  9994.1 10010.9 10030.4 10030.5
1431          RY  1769.3  1766.6  1752.8  1750.6  1747.9  1749.2  1770.5  1770.6
              *

1432          KK    210J
1433          KM   Sub-Basin   210J
1434          KM
1435          KM      The Clark Unit Hydrograph is used for this basin.
1436          KM          The Urban time-area relation is used for this basin.
1437          KM
1438          KM      Time of Concentration for this sub-basin is based on the following:
1439          KM          6-Hour Rainfall, Pattern No.  1.00
1440          KM          An rainfall areal reduction factor of 0.999
1441          KM
1442          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1443          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1444          KM   .48 .47 .47 .17 .14 .13 .06 .06 .06 .05 .05 .05 .00 .00 .00 .00 .00 .00
1445          KM
1446          KM          L=   0.684 miles, S=  187 feet/mile, Kb= .03
1447          KM
1448          BA   0.103
1449          LG    0.09    0.19    6.60    0.13   15.00
1450          UC   0.154   0.125
1451          UA       0       5      16      30      65      77      84      90      94      97
1452          UA     100
              *

1453          KK   C595R
1454          KM      Hydrograph combine 594595 + 210J at C595
1455          HC       2
              *
              * *
              * * C595R is the total flow in Longmont Wash upstream of the confluence
              * * with Bristol Wash
              * *
              *
```



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

1456          KK    C595
1457          KM      Hydrograph combine C595L + C595R at C595
1458          HC       2
              *
              * *
              * * C595 is the total flow in Bristol Wash just downstream of the
              * * confluence with Longmont Wash
              * *
              *

1459          KK  595596
1460          KM      Normal depth channel route from C595 to C596
1461          KM      Source:  HEC-2 Cross Section: BR0.290
1462          RS       4    FLOW      -1
1463          RC   0.055   0.045   0.055  1095.0  0.0110
1464          RX  9886.8  9904.8  9948.0 10000.0 10032.4 10081.5 10107.3 10130.4
1465          RY  1727.2  1724.1  1725.9  1720.2  1725.6  1725.3  1721.3  1731.4
              *

1466          KK    210K
1467          KM   Sub-Basin   210K
1468          KM
1469          KM      The Clark Unit Hydrograph is used for this basin.
1470          KM          The Urban time-area relation is used for this basin.
1471          KM
1472          KM      Time of Concentration for this sub-basin is based on the following:
1473          KM          6-Hour Rainfall, Pattern No.  1.00
1474          KM          An rainfall areal reduction factor of 0.999
1475          KM
1476          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1477          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1478          KM   .48 .47 .47 .17 .14 .13 .06 .06 .06 .05 .05 .05 .00 .00 .00 .00 .00 .00
1479          KM
1480          KM          L=   0.425 miles, S=  207 feet/mile, Kb= .03
1481          KM
1482          BA   0.077
1483          LG    0.09    0.19    6.60    0.13   15.00
1484          UC   0.117   0.074
1485          UA       0       5      16      30      65      77      84      90      94      97
1486          UA     100
              *

1487          KK    C596
1488          KM      Hydrograph combine 595596 + 210K at C596
1489          HC       2
```

```
                    *
                    * *
                    * * C596 is the total flow in Bristol Wash at Golden Eagle Blvd.
                    * * upstream of DAM 4
                    * *
                    * * Leave Basin 210 temporarily and move to Basin 209
                    * *
                    * * Start Cloudburst Wash
                    *
1                                                HEC-1 INPUT                                                PAGE 36

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

        1490        KK    209A
        1491        KM   Sub-Basin   209A
        1492        KM
        1493        KM      The Clark Unit Hydrograph is used for this basin.
        1494        KM          The HEC-1 time-area relation is used for this basin.
        1495        KM
        1496        KM      Time of Concentration for this sub-basin is based on the following:
        1497        KM          6-Hour Rainfall, Pattern No.  1.00
        1498        KM          An rainfall areal reduction factor of 0.995
        1499        KM
        1500        KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
        1501        KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
        1502        KM   .46 .45 .45 .15 .11 .10 .05 .05 .04 .04 .04 .04 .01 .01 .01 .01 .01 .01
        1503        KM
        1504        KM          L=   1.028 miles, S=  367 feet/mile, Kb= .08
        1505        KM
        1506        BA   0.368
        1507        LG    0.18    0.31    4.35    0.38   41.41
        1508        UC   0.263   0.152
                    *

        1509        KK  579580
        1510        KM      Normal depth channel route from C579 to C580
        1511        KM      Source:  100 Scale 4' CI Mapping
        1512        RS       1    FLOW      -1
        1513        RC   0.050   0.045   0.050  1751.0  0.0600
        1514        RX  1000.0  1010.0  1025.0  1030.0  1035.0  1040.0  1045.0  1048.0
        1515        RY  2336.0  2332.0  2328.0  2327.5  2327.5  2328.0  2332.0  2336.0
                    *

        1516        KK    209C
        1517        KM   Sub-Basin   209C
        1518        KM
        1519        KM      The Clark Unit Hydrograph is used for this basin.
        1520        KM          The Urban time-area relation is used for this basin.
        1521        KM
        1522        KM      Time of Concentration for this sub-basin is based on the following:
        1523        KM          6-Hour Rainfall, Pattern No.  1.00
        1524        KM          An rainfall areal reduction factor of 0.999
        1525        KM
        1526        KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
        1527        KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
        1528        KM   .47 .47 .47 .16 .13 .12 .06 .05 .05 .04 .04 .04 .01 .01 .01 .01 .01 .01
        1529        KM
        1530        KM          L=   0.723 miles, S=  342 feet/mile, Kb= .05
        1531        KM
        1532        BA   0.064
        1533        LG    0.11    0.26    4.35    0.36   48.03
        1534        UC   0.175   0.198
        1535        UA       0       5      16      30      65      77      84      90      94      97
        1536        UA     100
                    *
1                                                HEC-1 INPUT                                                PAGE 37

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

        1537        KK   C580R
        1538        KM      Hydrograph combine 579580 + 209C at C580 right branch
        1539        HC       2
                    *

        1540        KK    209B
        1541        KM   Sub-Basin   209B
        1542        KM
        1543        KM      The Clark Unit Hydrograph is used for this basin.
        1544        KM          The Urban time-area relation is used for this basin.
        1545        KM
        1546        KM      Time of Concentration for this sub-basin is based on the following:
        1547        KM          6-Hour Rainfall, Pattern No.  1.00
        1548        KM          An rainfall areal reduction factor of 0.999
        1549        KM
        1550        KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
        1551        KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
        1552        KM   .47 .47 .47 .16 .13 .13 .06 .06 .05 .04 .04 .04 .01 .01 .01 .01 .01 .01
```

```
1553          KM
1554          KM          L=   0.716 miles, S=  403 feet/mile, Kb= .03
1555          KM
1556          BA   0.083
1557          LG    0.09    0.25    4.35    0.35   50.00
1558          UC   0.125   0.116
1559          UA       0       5      16      30      65      77      84      90      94      97
1560          UA     100
              *

1561          KK    C580
1562          KM      Hydrograph combine 580R + 209B at C580
1563          HC       2
              *

1564          KK  580581
1565          KM      Normal depth channel route from C580 to C581
1566          KM      Source:  100 Scale 4' CI Mapping
1567          RS       2    FLOW      -1
1568          RC   0.050   0.045   0.050  2339.0  0.0440
1569          RX  1000.0  1010.0  1025.0  1030.0  1040.0  1045.0  1070.0  1075.0
1570          RY  2452.0  2448.0  2444.0  2443.5  2443.5  2444.0  2448.0  2452.0
              *

1571          KK    209D
1572          KM   Sub-Basin   209D
1573          KM
1574          KM      The Clark Unit Hydrograph is used for this basin.
1575          KM          The Urban time-area relation is used for this basin.
1576          KM
1577          KM      Time of Concentration for this sub-basin is based on the following:
1578          KM          6-Hour Rainfall, Pattern No.  1.00
1579          KM          An rainfall areal reduction factor of 0.997
1580          KM
1581          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1582          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
```



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

1583          KM   .47 .47 .46 .16 .13 .12 .06 .05 .05 .04 .04 .04 .01 .01 .01 .01 .01 .01
1584          KM
1585          KM          L=   0.800 miles, S=  354 feet/mile, Kb= .04
1586          KM
1587          BA   0.244
1588          LG    0.11    0.26    4.35    0.36   48.63
1589          UC   0.163   0.092
1590          UA       0       5      16      30      65      77      84      90      94      97
1591          UA     100
              *

1592          KK   C581R
1593          KM      Hydrograph combine 580581 + 209D at C581 right branch
1594          HC       2
              *

1595          KK    209E
1596          KM   Sub-Basin   209E
1597          KM
1598          KM      The Clark Unit Hydrograph is used for this basin.
1599          KM          The Urban time-area relation is used for this basin.
1600          KM
1601          KM      Time of Concentration for this sub-basin is based on the following:
1602          KM          6-Hour Rainfall, Pattern No.  1.00
1603          KM          An rainfall areal reduction factor of 0.998
1604          KM
1605          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1606          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1607          KM   .47 .47 .47 .16 .13 .13 .06 .06 .05 .04 .04 .04 .01 .01 .01 .01 .01 .01
1608          KM
1609          KM          L=   1.018 miles, S=  341 feet/mile, Kb= .03
1610          KM
1611          BA   0.149
1612          LG    0.09    0.25    4.35    0.35   50.00
1613          UC   0.158   0.144
1614          UA       0       5      16      30      65      77      84      90      94      97
1615          UA     100
              *

1616          KK    C581
1617          KM      Hydrograph combine 581R + 209E at C581
1618          HC       2
              *

1619          KK  581582
1620          KM      Normal depth channel route from C581 to C582
1621          KM      Source:  100 Scale 4' CI Mapping
1622          RS       3    FLOW      -1
1623          RC   0.050   0.045   0.050  4012.0  0.0459
```

```
1624          RX  1000.0  1010.0  1025.0  1030.0  1035.0  1040.0  1050.0  1065.0
1625          RY  2100.0  2096.0  2092.0  2091.5  2091.5  2092.0  2096.0  2100.0
              *
1                                        HEC-1 INPUT                                                    PAGE 39

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


1626          KK    209F
1627          KM   Sub-Basin   209F
1628          KM
1629          KM      The Clark Unit Hydrograph is used for this basin.
1630          KM          The HEC-1 time-area relation is used for this basin.
1631          KM
1632          KM      Time of Concentration for this sub-basin is based on the following:
1633          KM          6-Hour Rainfall, Pattern No.  1.00
1634          KM          An rainfall areal reduction factor of 0.997
1635          KM
1636          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1637          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1638          KM   .46 .45 .45 .15 .11 .10 .05 .05 .04 .03 .03 .03 .01 .01 .01 .01 .01 .01
1639          KM
1640          KM          L=   1.191 miles, S=  332 feet/mile, Kb= .09
1641          KM
1642          BA   0.226
1643          LG    0.18    0.31    4.50    0.36   40.21
1644          UC   0.329   0.290
              *

1645          KK   C582R
1646          KM      Hydrograph combine 581582 + 209F at C582 right branch
1647          HC       2
              *

1648          KK    209G
1649          KM   Sub-Basin   209G
1650          KM
1651          KM      The Clark Unit Hydrograph is used for this basin.
1652          KM          The Urban time-area relation is used for this basin.
1653          KM
1654          KM      Time of Concentration for this sub-basin is based on the following:
1655          KM          6-Hour Rainfall, Pattern No.  1.00
1656          KM          An rainfall areal reduction factor of 0.997
1657          KM
1658          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1659          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1660          KM   .47 .47 .47 .16 .13 .13 .06 .06 .05 .04 .04 .04 .01 .01 .01 .01 .01 .01
1661          KM
1662          KM          L=   1.050 miles, S=  306 feet/mile, Kb= .03
1663          KM
1664          BA   0.204
1665          LG    0.09    0.25    4.35    0.35   49.93
1666          UC   0.167   0.130
1667          UA       0       5      16      30      65      77      84      90      94      97
1668          UA     100
              *
1                                        HEC-1 INPUT                                                    PAGE 40

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


1669          KK    C582
1670          KM      Hydrograph combine C582R + 209G at C582
1671          HC       2
              *

1672          KK  582583
1673          KM      Normal depth channel route from C582 to C583
1674          KM      Source:  100 Scale 4' CI Mapping.
1675          RS       2    FLOW      -1
1676          RC   0.060   0.050   0.060  1725.0  0.0232
1677          RX   960.0  1020.0  1035.0  1040.0  1050.0  1055.0  1065.0  1073.0
1678          RY  2024.0  2018.0  2016.0  2015.5  2015.5  2016.0  2020.0  2024.0
              *

1679          KK    209H
1680          KM   Sub-Basin   209H
1681          KM
1682          KM      The Clark Unit Hydrograph is used for this basin.
1683          KM          The Urban time-area relation is used for this basin.
1684          KM
1685          KM      Time of Concentration for this sub-basin is based on the following:
1686          KM          6-Hour Rainfall, Pattern No.  1.00
1687          KM          An rainfall areal reduction factor of 0.999
1688          KM
1689          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1690          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1691          KM   .46 .46 .46 .15 .12 .11 .05 .05 .04 .03 .02 .02 .01 .01 .01 .01 .01 .01
1692          KM
```

```
1693          KM          L=   0.542 miles, S=  343 feet/mile, Kb= .07
1694          KM
1695          BA   0.083
1696          LG    0.15    0.31    5.60    0.22   26.57
1697          UC   0.179   0.138
1698          UA       0       5      16      30      65      77      84      90      94      97
1699          UA     100
              *

1700          KK    C583
1701          KM      Hydrograph combine 582583 + 209H at C583
1702          HC       2
              *

1703          KK  583584
1704          KM      Normal depth channel route from C583 to C584
1705          KM      Source:  HEC-2 Cross Section: CL 1.664
1706          RS       5    FLOW      -1
1707          RC   0.055   0.070   0.055  3107.0  0.0356
1708          RX  9859.8  9910.3  9933.5  9995.6 10021.7 10051.0 10083.0 10127.8
1709          RY  1948.3  1944.2  1943.7  1930.9  1932.4  1941.6  1937.3  1945.2
              *
```



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

1710          KK    209I
1711          KM   Sub-Basin   209I
1712          KM
1713          KM      The Clark Unit Hydrograph is used for this basin.
1714          KM          The Urban time-area relation is used for this basin.
1715          KM
1716          KM      Time of Concentration for this sub-basin is based on the following:
1717          KM          6-Hour Rainfall, Pattern No.  1.00
1718          KM          An rainfall areal reduction factor of 0.998
1719          KM
1720          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1721          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1722          KM   .47 .46 .46 .16 .13 .12 .05 .05 .05 .04 .03 .02 .00 .00 .00 .00 .00 .00
1723          KM
1724          KM          L=   0.691 miles, S=  347 feet/mile, Kb= .04
1725          KM
1726          BA   0.182
1727          LG    0.10    0.27    6.00    0.17   17.98
1728          UC   0.150   0.088
1729          UA       0       5      16      30      65      77      84      90      94      97
1730          UA     100
              *

1731          KK   C584I
1732          KM      Hydrograph combine 583584 + 209I at C584I
1733          HC       2
              *
              * *
              * * C584I is the total flow in Cloudburst Wash upstream of Dam 7
              * *
              *

1734          KK   C584O
1735          KM      Reservoir route at C584 (Dam 7).
1736          RS       1    ELEV  1884.8
1737          SV    0.00   14.55   37.17   57.52   86.65   94.00   97.00  101.00  104.90  109.00
1738          SV  113.00  118.00  122.00  126.25  131.00  133.00  136.00  139.00
1739          SE  1884.8  1908.0  1916.0  1920.0  1924.0  1924.8  1925.2  1925.6  1926.0  1926.4
1740          SE  1926.8  1927.2  1927.6  1928.0  1928.4  1928.6  1928.8  1929.0
1741          SQ       0     135     223     285     326     341     355     358     385     493
1742          SQ     704    1007    1394    1852    2374    2956    3596    3937    4292    4661
1743          SE  1884.8  1892.0  1900.0  1908.0  1916.0  1920.0  1924.0  1924.8  1925.2  1925.6
1744          SE  1926.0  1926.4  1926.8  1927.2  1927.6  1928.0  1928.4  1928.6  1928.8  1929.0
1745          RL                    0.15
              *
              * *
              * * End Basin 209.  Rejoin Basin 210
              * *
              *
```



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

1746          KK  584597
1747          KM      Normal depth channel route from C584 to C597
1748          KM      Source:  HEC-2 Cross Section: CL 1.032
1749          RS       8    FLOW      -1
1750          RC   0.065   0.050   0.065  3704.0  0.0261
1751          RX  9902.1  9923.0  9938.7  9984.6 10049.3 10056.0 10091.7 10120.0
1752          RY  1839.1  1830.1  1826.6  1824.1  1824.9  1826.7  1828.5  1838.8
              *
```

```
1753          KK    210L
1754          KM   Sub-Basin   210L
1755          KM
1756          KM      The Clark Unit Hydrograph is used for this basin.
1757          KM          The Urban time-area relation is used for this basin.
1758          KM
1759          KM      Time of Concentration for this sub-basin is based on the following:
1760          KM          6-Hour Rainfall, Pattern No.  1.00
1761          KM          An rainfall areal reduction factor of 0.998
1762          KM
1763          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1764          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1765          KM   .46 .46 .46 .15 .12 .11 .05 .05 .04 .03 .03 .02 .00 .00 .00 .00 .00 .00
1766          KM
1767          KM          L=   0.820 miles, S=  251 feet/mile, Kb= .03
1768          KM
1769          BA   0.137
1770          LG    0.09    0.25    5.20    0.23   15.90
1771          UC   0.158   0.127
1772          UA       0       5      16      30      65      77      84      90      94      97
1773          UA     100
              *

1774          KK    C597
1775          KM      Hydrograph combine 584597 + 210L at C597
1776          HC       2
              *

1777          KK  597598
1778          KM      Normal depth channel route from C597 to C598
1779          KM      Source:  HEC-2 Cross Section: CL 0.328
1780          RS       5    FLOW      -1
1781          RC   0.065   0.050   0.065  2822.0  0.0252
1782          RX  9961.0  9961.9  9969.1  9986.3 10018.5 10082.6 10155.2 10278.8
1783          RY  1740.2  1740.2  1738.1  1731.6  1732.3  1737.1  1740.0  1740.8
              *

1784          KK    210M
1785          KM   Sub-Basin   210M
1786          KM
1787          KM      The Clark Unit Hydrograph is used for this basin.
1788          KM          The Urban time-area relation is used for this basin.
1789          KM
1790          KM      Time of Concentration for this sub-basin is based on the following:
1791          KM          6-Hour Rainfall, Pattern No.  1.00
```



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

1792          KM          An rainfall areal reduction factor of 0.998
1793          KM
1794          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1795          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1796          KM   .47 .47 .46 .16 .13 .12 .05 .05 .05 .04 .04 .03 .00 .00 .00 .00 .00 .00
1797          KM
1798          KM          L=   1.022 miles, S=  232 feet/mile, Kb= .03
1799          KM
1800          BA   0.162
1801          LG    0.09    0.25    5.80    0.17   15.02
1802          UC   0.179   0.157
1803          UA       0       5      16      30      65      77      84      90      94      97
1804          UA     100
              *

1805          KK    C598
1806          KM      Hydrograph combine 597598 + 210M at C598
1807          HC       2
              *
              * *
              * * C598 is the total flow in Cloudburst Wash at Golden Eagle Blvd.
              * * upstream of DAM 4
              * *
              *

1808          KK    210N
1809          KM   Sub-Basin   210N
1810          KM
1811          KM      The Clark Unit Hydrograph is used for this basin.
1812          KM          The Urban time-area relation is used for this basin.
1813          KM
1814          KM      Time of Concentration for this sub-basin is based on the following:
1815          KM          6-Hour Rainfall, Pattern No.  1.00
1816          KM          An rainfall areal reduction factor of 0.999
1817          KM
1818          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1819          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1820          KM   .45 .44 .44 .13 .10 .09 .03 .03 .03 .01 .01 .01 .00 .00 .00 .00 .00 .00
1821          KM
```

```
1822          KM          L=   0.309 miles, S=  178 feet/mile, Kb= .03
1823          KM
1824          BA   0.049
1825          LG    0.09    0.25    4.10    0.40   16.38
1826          UC   0.108   0.069
1827          UA       0       5      16      30      65      77      84      90      94      97
1828          UA     100
              *

1829          KK   C599I
1830          KM      Hydrograph combine C585 + C596 + C598 + 210N at C599I
1831          HC       4
              *
              * *
              * * C599I is the total flow in Ashbrook Wash upstream of DAM 4
              * *
              *
              *
```



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

1832          KK   C599O
1833          KM      Reservoir route at C599 (Dam 4).
1834          RS       1    ELEV  1694.7
1835          SV    0.00   16.85   31.66   52.71   80.85   95.00   98.00  102.00  105.00  109.00
1836          SV  113.00  116.14  120.00  124.00  128.00  136.00  139.00  144.00  148.00  152.00
1837          SE  1694.7  1708.0  1710.0  1712.0  1714.0  1714.8  1715.0  1715.2  1715.4  1715.6
1838          SE  1715.8  1716.0  1716.2  1716.4  1716.6  1717.0  1717.2  1717.4  1717.6  1717.8
1839          SQ       0      38     214     312     384     443     497     543     587     628
1840          SQ     642     754     957    1262    1665    2182    2483    2811    3164    3540
1841          SE  1694.7  1696.0  1700.0  1702.0  1704.0  1706.0  1708.0  1710.0  1712.0  1714.0
1842          SE  1714.8  1715.4  1715.8  1716.2  1716.6  1717.0  1717.2  1717.4  1717.6  1717.8
1843          RL                    0.97
              *
1844          ZZ
```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

   28        207A
                .
                .
   49           .        207B
                .           .
                .           .
   70        C550............
                V
                V
   73      550552
                .
                .
   80           .        207C
                .           .
                .           .
  101       C552L...........
                .
                .
  104           .        207D
                .           V
                .           V
  123           .      551552
                .           .
                .           .
  130           .           .        207E
                .           .           .
                .           .           .
  151           .       C552R...........
                .           .
                .           .
  154        C552............
                V
                V
  157      552553
                .
                .
  164           .        207F
                .           .
                .           .
  183        C553............
                V
                V
  186      553556
                .
                .
```

```
193          .        207G
             .          .
             .          .
212      C556L............
             .
             .
215          .        207H
             .          V
             .          V
236          .      554555
             .          .
             .          .
243          .          .        207I
             .          .          .
             .          .          .
264          .        C555............
             .          V
             .          V
267          .      555556
             .          .
             .          .
274          .          .        207J
             .          .          .
             .          .          .
295          .      C556R............
             .          .
             .          .
298      C556............
             V
             V
301     556557
             .
             .
308          .        207K
             .          .
             .          .
329      C557R............
             .
             .
332          .        207L
             .          .
             .          .
353      C557............
             V
             V
356     557558
             .
             .
363          .        207M
             .          .
             .          .
384      C558............
             V
             V
387     558560
             .
             .
394          .        207O
             .          .
             .          .
415      C560R............
             .
             .
418          .        207N
             .          V
             .          V
439          .      559560
             .          .
             .          .
446      C560I............
             V
             V
449      C560O
             V
             V
459     560585
             .
             .
466          .        210A
             .          .
             .          .
487      C585............
             .
             .
490          .        208A
             .          V
             .          V
511          .      561563
             .          .
```

```
518          .          .
             .          .       208B
             .          .          .
             .          .          .
539          .      C563R............
             .          .
             .          .
542          .          .       208C
             .          .          V
             .          .          V
561          .          .     562563
             .          .          .
             .          .          .
568          .          .          .       208D
             .          .          .          .
             .          .          .          .
589          .          .     C563L............
             .          .          .
             .          .          .
592          .      C563............
             .          V
             .          V
595          .     563564
             .          .
             .          .
602          .          .       208E
             .          .          .
             .          .          .
623          .      C564R............
             .          .
             .          .
626          .          .       208F
             .          .          .
             .          .          .
647          .      C564............
             .          V
             .          V
650          .     564565
             .          .
             .          .
657          .          .       208G
             .          .          .
             .          .          .
678          .      C565............
             .          V
             .          V
681          .     565568
             .          .
             .          .
688          .          .       208H
             .          .          .
             .          .          .
709          .     C568L............
             .          .
             .          .
712          .          .       208I
             .          .          .
             .          .          .
733          .          .          .       208J
             .          .          .          .
             .          .          .          .
754          .          .     C566............
             .          .          V
             .          .          V
757          .          .     566567
             .          .          .
             .          .          .
764          .          .          .       208K
             .          .          .          .
             .          .          .          .
785          .          .     C567L............
             .          .          .
             .          .          .
788          .          .          .       208L
             .          .          .          .
             .          .          .          .
809          .          .     C567............
             .          .          V
             .          .          V
812          .          .     567568
             .          .          .
             .          .          .
819          .          .          .       208M
             .          .          .          .
             .          .          .          .
840          .          .     C568R............
             .          .          .
             .          .          .
843          .      C568............
```

```
                .          V
                .          V
846             .     568573
                .          .
                .          .
853             .          .       208N
                .          .          .
                .          .          .
874             .    C573L.............
                .          .
                .          .
877             .          .       208O
                .          .          V
                .          .          V
898             .          .     569570
                .          .          .
                .          .          .
905             .          .          .       208P
                .          .          .          .
                .          .          .          .
926             .          .    C570R.............
                .          .          .
                .          .          .
929             .          .          .       208Q
                .          .          .          .
                .          .          .          .
950             .          .      C570.............
                .          .          .
                .          .          .
953             .          .          .       208R
                .          .          .          V
                .          .          .          V
974             .          .          .     571572
                .          .          .          .
                .          .          .          .
981             .          .      C572.............
                .          .          V
                .          .          V
984             .          .     572573
                .          .          .
                .          .          .
991             .          .          .       208S
                .          .          .          .
                .          .          .          .
1012            .          .    C573R.............
                .          .          .
                .          .          .
1015            .      C573.............
                .          .
                .          .
1018            .          .      208T
                .          .          .
                .          .          .
1039            .          .          .       208U
                .          .          .          .
                .          .          .          .
1060            .          .      C574.............
                .          .          V
                .          .          V
1063            .          .     574575
                .          .          .
                .          .          .
1070            .          .          .       208V
                .          .          .          .
                .          .          .          .
1091            .          .      C575.............
                .          .          V
                .          .          V
1094            .          .     575576
                .          .          .
                .          .          .
1101            .          .          .       208W
                .          .          .          .
                .          .          .          .
1122            .          .      C576.............
                .          .          V
                .          .          V
1125            .          .     576577
                .          .          .
                .          .          .
1132            .      C577.............
                .          V
                .          V
1135            .     577578
                .          .
                .          .
1142            .          .      208X
                .          .          .
                .          .          .
```

```
1163          .      C578I............
              .         V
              .         V
1166          .      C578O
              .         V
              .         V
1178          .    578587
              .         .
              .         .
1185          .         .       210B
              .         .          V
              .         .          V
1206          .         .      C586O
              .         .          V
              .         .          V
1215          .         .    586587
              .         .         .
              .         .         .
1222          .      C587............
              .         V
              .         V
1225          .    587595
              .         .
              .         .
1232          .         .       210C
              .         .         .
              .         .         .
1253          .    C595L............
              .         .
              .         .
1256          .         .       210D
              .         .          V
              .         .          V
1277          .         .    588590
              .         .         .
              .         .         .
1284          .         .         .       210E
              .         .         .          .
              .         .         .          .
1305          .         .    C590L............
              .         .         .
              .         .         .
1308          .         .         .       210F
              .         .         .          V
              .         .         .          V
1329          .         .         .    589590
              .         .         .         .
              .         .         .         .
1336          .         .         .         .       210G
              .         .         .         .          .
              .         .         .         .          .
1357          .         .         .    C590R............
              .         .         .         .
              .         .         .         .
1360          .         .      C590............
              .         .         .
              .         .         .
1363          .         .         .       210H
              .         .         .          V
              .         .         .          V
1384          .         .         .    592593
              .         .         .         .
              .         .         .         .
1391          .         .      C593............
              .         .         V
              .         .         V
1394          .         .    593594
              .         .         .
              .         .         .
1401          .         .         .       210I
              .         .         .          .
              .         .         .          .
1422          .         .      C594............
              .         .         V
              .         .         V
1425          .         .    594595
              .         .         .
              .         .         .
1432          .         .         .       210J
              .         .         .          .
              .         .         .          .
1453          .         .    C595R............
              .         .         .
              .         .         .
1456          .      C595............
              .         V
              .         V
1459          .    595596
              .         .
```

```
1466          .          .       210K
              .          .          .
              .          .          .
1487          .       C596...........
              .          .
              .          .
1490          .          .       209A
              .          .          V
              .          .          V
1509          .          .     579580
              .          .          .
              .          .          .
1516          .          .          .       209C
              .          .          .          .
              .          .          .          .
1537          .          .     C580R...........
              .          .          .
              .          .          .
1540          .          .          .       209B
              .          .          .          .
              .          .          .          .
1561          .          .      C580...........
              .          .          V
              .          .          V
1564          .          .     580581
              .          .          .
              .          .          .
1571          .          .          .       209D
              .          .          .          .
              .          .          .          .
1592          .          .     C581R...........
              .          .          .
              .          .          .
1595          .          .          .       209E
              .          .          .          .
              .          .          .          .
1616          .          .      C581...........
              .          .          V
              .          .          V
1619          .          .     581582
              .          .          .
              .          .          .
1626          .          .          .       209F
              .          .          .          .
              .          .          .          .
1645          .          .     C582R...........
              .          .          .
              .          .          .
1648          .          .          .       209G
              .          .          .          .
              .          .          .          .
1669          .          .      C582...........
              .          .          V
              .          .          V
1672          .          .     582583
              .          .          .
              .          .          .
1679          .          .          .       209H
              .          .          .          .
              .          .          .          .
1700          .          .      C583...........
              .          .          V
              .          .          V
1703          .          .     583584
              .          .          .
              .          .          .
1710          .          .          .       209I
              .          .          .          .
              .          .          .          .
1731          .          .     C584I...........
              .          .          V
              .          .          V
1734          .          .     C584O
              .          .          V
              .          .          V
1746          .          .     584597
              .          .          .
              .          .          .
1753          .          .          .       210L
              .          .          .          .
              .          .          .          .
1774          .          .      C597...........
              .          .          V
              .          .          V
1777          .          .     597598
              .          .          .
              .          .          .
1784          .          .          .       210M
```

```
                .          .          .          .
                .          .          .          .
 1805           .          .       C598...........
                .          .          .
                .          .          .
 1808           .          .          .       210N
                .          .          .          .
                .          .          .          .
 1829       C599I...................................
                V
                V
 1832       C599O

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              MAY  1991            *
*           VERSION 4.0.1E          *
*                                   *
*  RUN DATE  10/16/96  TIME  10:14:57  *
*                                   *
*************************************
```

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

```
                    FOUNTAIN HILLS ADMP - Project No. 63
                    Future Condition Model                          File:   MODEL-6.IH1
                    100-Year, 6-Hour Storm, Clark Unit Hydrograph   Date:  03/08/96 CCC

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

    IT        HYDROGRAPH TIME DATA
                   NMIN          1  MINUTES IN COMPUTATION INTERVAL
                  IDATE      1   0  STARTING DATE
                  ITIME       0000  STARTING TIME
                     NQ       1080  NUMBER OF HYDROGRAPH ORDINATES
                 NDDATE      1   0  ENDING DATE
                 NDTIME       1759  ENDING TIME
                  ICENT         19  CENTURY MARK

              COMPUTATION INTERVAL    0.02 HOURS
                   TOTAL TIME BASE   17.98 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

  7 JD        INDEX STORM NO. 1
                  STRM        3.30  PRECIPITATION DEPTH
                  TRDA        0.01  TRANSPOSITION DRAINAGE AREA

  8 PI          PRECIPITATION PATTERN
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.03      0.03      0.03      0.03      0.03
                  0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.03
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00      0.00
```

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

11 JD INDEX STORM NO. 2

STRM 3.28 PRECIPITATION DEPTH

TRDA 0.50 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.03	0.03	0.03	0.03	0.03
0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

12 JD INDEX STORM NO. 3

STRM 3.23 PRECIPITATION DEPTH

TRDA 2.80 TRANSPOSITION DRAINAGE AREA

13 PI PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02
0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00

16 JD         INDEX STORM NO. 4
                STRM        3.04  PRECIPITATION DEPTH
                TRDA       16.00  TRANSPOSITION DRAINAGE AREA

17 PI          PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00

20 JD         INDEX STORM NO. 5
                STRM        2.67  PRECIPITATION DEPTH
                TRDA       90.00  TRANSPOSITION DRAINAGE AREA

21 PI          PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
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24 JD          INDEX STORM NO. 6
                    STRM        1.88  PRECIPITATION DEPTH
                    TRDA      500.00  TRANSPOSITION DRAINAGE AREA

25 PI           PRECIPITATION PATTERN
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
        WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
1
                                        RUNOFF SUMMARY
                                   FLOW IN CUBIC FEET PER SECOND
                                TIME IN HOURS,  AREA IN SQUARE MILES

                                          PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN    MAXIMUM    TIME OF
        OPERATION          STATION        FLOW    PEAK                                          AREA     STAGE    MAX STAGE
+                                                          6-HOUR      24-HOUR     72-HOUR
        HYDROGRAPH AT
+                           207A          382.    4.30       55.         18.         18.       0.26
        HYDROGRAPH AT
+                           207B          306.    4.30       46.         15.         15.       0.21
        2 COMBINED AT
+                           C550          687.    4.30      101.         34.         34.       0.46
        ROUTED TO
+                          550552         675.    4.37      100.         34.         34.       0.46
        HYDROGRAPH AT
+                           207C          321.    4.22       34.         11.         11.       0.17
        2 COMBINED AT
+                           C552L         878.    4.35      132.         44.         44.       0.64
        HYDROGRAPH AT
+                           207D          424.    4.13       48.         16.         16.       0.20
        ROUTED TO
+                          551552         416.    4.22       48.         16.         16.       0.20
        HYDROGRAPH AT
+                           207E          286.    4.12       39.         13.         13.       0.16
        2 COMBINED AT
+                           C552R         679.    4.18       87.         29.         29.       0.35
        2 COMBINED AT
+                           C552         1312.    4.28      211.         71.         71.       0.99
        ROUTED TO
+                          552553        1308.    4.32      211.         71.         71.       0.99
        HYDROGRAPH AT
+                           207F          253.    4.15       30.         10.         10.       0.13
```

+	2 COMBINED AT	C553	1440.	4.30	237.	80.	80.	1.12
+	ROUTED TO	553556	1432.	4.33	237.	80.	80.	1.12
+	HYDROGRAPH AT	207G	277.	4.33	46.	15.	15.	0.24
+	2 COMBINED AT	C556L	1601.	4.35	276.	93.	93.	1.35
+	HYDROGRAPH AT	207H	312.	4.07	32.	11.	11.	0.12
+	ROUTED TO	554555	303.	4.12	32.	11.	11.	0.12
+	HYDROGRAPH AT	207I	213.	4.03	19.	7.	7.	0.07
+	2 COMBINED AT	C555	489.	4.07	51.	17.	17.	0.20
+	ROUTED TO	555556	475.	4.15	51.	17.	17.	0.20
+	HYDROGRAPH AT	207J	270.	4.05	25.	8.	8.	0.09
+	2 COMBINED AT	C556R	682.	4.10	76.	25.	25.	0.29
+	2 COMBINED AT	C556	1906.	4.30	343.	115.	115.	1.64
+	ROUTED TO	556557	1899.	4.35	343.	115.	115.	1.64
+	HYDROGRAPH AT	207K	362.	4.05	33.	11.	11.	0.13
+	2 COMBINED AT	C557R	2002.	4.33	372.	125.	125.	1.77
+	HYDROGRAPH AT	207L	236.	4.03	21.	7.	7.	0.08
+	2 COMBINED AT	C557	2067.	4.32	390.	132.	132.	1.85
+	ROUTED TO	557558	2055.	4.37	390.	132.	132.	1.85
+	HYDROGRAPH AT	207M	372.	4.03	28.	9.	9.	0.12
+	2 COMBINED AT	C558	2110.	4.35	414.	140.	140.	1.97
+	ROUTED TO	558560	2104.	4.40	414.	140.	140.	1.97
+	HYDROGRAPH AT	207O	413.	4.03	30.	10.	10.	0.13
+	2 COMBINED AT	C560R	2157.	4.38	440.	148.	148.	2.10
+	HYDROGRAPH AT	207N	160.	4.02	12.	4.	4.	0.05
+	ROUTED TO	559560	151.	4.10	12.	4.	4.	0.05
+	2 COMBINED AT	C560I	2201.	4.37	451.	152.	152.	2.15
+	ROUTED TO	C560O	294.	5.77	274.	152.	152.	2.15
+	ROUTED TO	560585	294.	5.85	274.	152.	152.	2.15
+	HYDROGRAPH AT	210A	397.	4.02	28.	9.	9.	0.12
+	2 COMBINED AT	C585	360.	4.03	283.	160.	160.	2.27

+	HYDROGRAPH AT	208A	480.	4.02	37.	12.	12.	0.14
+	ROUTED TO	561563	468.	4.03	37.	12.	12.	0.14
+	HYDROGRAPH AT	208B	82.	4.02	7.	2.	2.	0.03
+	2 COMBINED AT	C563R	549.	4.03	44.	15.	15.	0.17
+	HYDROGRAPH AT	208C	144.	4.10	16.	5.	5.	0.07
+	ROUTED TO	562563	141.	4.17	16.	5.	5.	0.07
+	HYDROGRAPH AT	208D	225.	4.03	20.	7.	7.	0.08
+	2 COMBINED AT	C563L	319.	4.05	36.	12.	12.	0.14
+	2 COMBINED AT	C563	864.	4.03	80.	27.	27.	0.31
+	ROUTED TO	563564	833.	4.08	80.	27.	27.	0.31
+	HYDROGRAPH AT	208E	192.	4.03	17.	6.	6.	0.06
+	2 COMBINED AT	C564R	994.	4.07	96.	32.	32.	0.37
+	HYDROGRAPH AT	208F	224.	4.02	18.	6.	6.	0.07
+	2 COMBINED AT	C564	1195.	4.05	114.	38.	38.	0.44
+	ROUTED TO	564565	1151.	4.13	114.	38.	38.	0.44
+	HYDROGRAPH AT	208G	398.	4.03	35.	12.	12.	0.13
+	2 COMBINED AT	C565	1398.	4.12	149.	50.	50.	0.57
+	ROUTED TO	565568	1371.	4.15	148.	50.	50.	0.57
+	HYDROGRAPH AT	208H	99.	4.07	11.	4.	4.	0.04
+	2 COMBINED AT	C568L	1429.	4.15	159.	53.	53.	0.61
+	HYDROGRAPH AT	208I	370.	4.03	31.	10.	10.	0.12
+	HYDROGRAPH AT	208J	221.	4.05	22.	7.	7.	0.08
+	2 COMBINED AT	C566	590.	4.03	53.	18.	18.	0.20
+	ROUTED TO	566567	572.	4.07	53.	18.	18.	0.20
+	HYDROGRAPH AT	208K	165.	4.02	13.	4.	4.	0.05
+	2 COMBINED AT	C567L	713.	4.05	66.	22.	22.	0.25
+	HYDROGRAPH AT	208L	183.	4.02	16.	5.	5.	0.06
+	2 COMBINED AT	C567	892.	4.03	82.	27.	27.	0.31
+	ROUTED TO	567568	855.	4.12	81.	27.	27.	0.31
+	HYDROGRAPH AT	208M	484.	4.03	46.	15.	15.	0.16

	2 COMBINED AT							
+		C568R	1263.	4.08	127.	43.	43.	0.46
	2 COMBINED AT							
+		C568	2210.	4.12	278.	93.	93.	1.07
	ROUTED TO							
+		568573	2187.	4.17	277.	93.	93.	1.07
	HYDROGRAPH AT							
+		208N	131.	4.05	14.	5.	5.	0.05
	2 COMBINED AT							
+		C573L	2245.	4.17	291.	98.	98.	1.12
	HYDROGRAPH AT							
+		208O	703.	4.03	61.	20.	20.	0.23
	ROUTED TO							
+		569570	693.	4.05	61.	20.	20.	0.23
	HYDROGRAPH AT							
+		208P	204.	4.02	17.	6.	6.	0.06
	2 COMBINED AT							
+		C570R	882.	4.03	78.	26.	26.	0.29
	HYDROGRAPH AT							
+		208Q	273.	4.05	26.	9.	9.	0.09
	2 COMBINED AT							
+		C570	1154.	4.03	104.	35.	35.	0.38
	HYDROGRAPH AT							
+		208R	35.	4.02	3.	1.	1.	0.01
	ROUTED TO							
+		571572	33.	4.05	3.	1.	1.	0.01
	2 COMBINED AT							
+		C572	1187.	4.03	107.	36.	36.	0.39
	ROUTED TO							
+		572573	1172.	4.05	107.	36.	36.	0.39
	HYDROGRAPH AT							
+		208S	229.	4.02	21.	7.	7.	0.07
	2 COMBINED AT							
+		C573R	1391.	4.05	128.	43.	43.	0.46
	2 COMBINED AT							
+		C573	2843.	4.12	409.	138.	138.	1.58
	HYDROGRAPH AT							
+		208T	433.	4.02	36.	12.	12.	0.13
	HYDROGRAPH AT							
+		208U	483.	4.00	36.	12.	12.	0.13
	2 COMBINED AT							
+		C574	911.	4.02	72.	24.	24.	0.27
	ROUTED TO							
+		574575	906.	4.02	72.	24.	24.	0.27
	HYDROGRAPH AT							
+		208V	97.	4.02	8.	3.	3.	0.03
	2 COMBINED AT							
+		C575	1002.	4.02	79.	26.	26.	0.29
	ROUTED TO							
+		575576	985.	4.05	79.	26.	26.	0.29
	HYDROGRAPH AT							
+		208W	170.	4.02	14.	5.	5.	0.05
	2 COMBINED AT							
+		C576	1146.	4.03	93.	31.	31.	0.34
	ROUTED TO							
+		576577	1143.	4.05	93.	31.	31.	0.34
	2 COMBINED AT							
+		C577	3345.	4.10	494.	166.	166.	1.92
	ROUTED TO							
+		577578	3329.	4.12	494.	166.	166.	1.92

+	HYDROGRAPH AT	208X	247.	4.02	19.	6.	6.	0.08
+	2 COMBINED AT	C578I	3404.	4.10	511.	172.	172.	2.00
+	ROUTED TO	C578O	1078.	4.67	390.	172.	172.	2.00
+	ROUTED TO	578587	1073.	4.72	390.	172.	172.	2.00
+	HYDROGRAPH AT	210B	307.	4.05	28.	9.	9.	0.11
+	ROUTED TO	C586O	246.	4.12	28.	9.	9.	0.11
+	ROUTED TO	586587	245.	4.17	28.	9.	9.	0.11
+	2 COMBINED AT	C587	1112.	4.72	411.	181.	181.	2.11
+	ROUTED TO	587595	1105.	4.73	410.	181.	181.	2.11
+	HYDROGRAPH AT	210C	245.	4.03	19.	6.	6.	0.08
+	2 COMBINED AT	C595L	1110.	4.73	423.	186.	186.	2.19
+	HYDROGRAPH AT	210D	448.	4.03	36.	12.	12.	0.14
+	ROUTED TO	588590	437.	4.05	36.	12.	12.	0.14
+	HYDROGRAPH AT	210E	93.	4.02	7.	2.	2.	0.03
+	2 COMBINED AT	C590L	524.	4.03	43.	14.	14.	0.17
+	HYDROGRAPH AT	210F	306.	4.02	25.	8.	8.	0.09
+	ROUTED TO	589590	299.	4.05	25.	8.	8.	0.09
+	HYDROGRAPH AT	210G	504.	4.03	42.	14.	14.	0.16
+	2 COMBINED AT	C590R	800.	4.03	67.	22.	22.	0.25
+	2 COMBINED AT	C590	1323.	4.03	110.	37.	37.	0.42
+	HYDROGRAPH AT	210H	234.	4.02	17.	6.	6.	0.07
+	ROUTED TO	592593	226.	4.07	17.	6.	6.	0.07
+	2 COMBINED AT	C593	1545.	4.03	127.	42.	42.	0.49
+	ROUTED TO	593594	1532.	4.07	127.	42.	42.	0.49
+	HYDROGRAPH AT	210I	149.	4.03	13.	4.	4.	0.05
+	2 COMBINED AT	C594	1636.	4.05	139.	46.	46.	0.54
+	ROUTED TO	594595	1595.	4.10	139.	46.	46.	0.54
+	HYDROGRAPH AT	210J	324.	4.03	25.	8.	8.	0.10
+	2 COMBINED AT	C595R	1764.	4.10	163.	54.	54.	0.64
+	2 COMBINED AT	C595	1603.	4.12	558.	236.	236.	2.83

+	ROUTED TO 595596	1595.	4.18	557.	236.	236.	2.83
+	HYDROGRAPH AT 210K	270.	4.02	19.	6.	6.	0.08
+	2 COMBINED AT C596	1679.	4.17	572.	241.	241.	2.91
+	HYDROGRAPH AT 209A	951.	4.10	89.	30.	30.	0.37
+	ROUTED TO 579580	942.	4.12	89.	30.	30.	0.37
+	HYDROGRAPH AT 209C	170.	4.05	17.	6.	6.	0.06
+	2 COMBINED AT C580R	1090.	4.10	106.	35.	35.	0.43
+	HYDROGRAPH AT 209B	266.	4.02	22.	7.	7.	0.08
+	2 COMBINED AT C580	1285.	4.08	128.	43.	43.	0.51
+	ROUTED TO 580581	1267.	4.12	127.	43.	43.	0.51
+	HYDROGRAPH AT 209D	802.	4.02	64.	21.	21.	0.24
+	2 COMBINED AT C581R	1747.	4.07	187.	63.	63.	0.76
+	HYDROGRAPH AT 209E	445.	4.03	40.	13.	13.	0.15
+	2 COMBINED AT C581	2031.	4.05	224.	75.	75.	0.91
+	ROUTED TO 581582	1981.	4.10	224.	75.	75.	0.91
+	HYDROGRAPH AT 209F	439.	4.17	55.	18.	18.	0.23
+	2 COMBINED AT C582R	2209.	4.12	274.	92.	92.	1.13
+	HYDROGRAPH AT 209G	625.	4.03	54.	18.	18.	0.20
+	2 COMBINED AT C582	2498.	4.10	323.	108.	108.	1.34
+	ROUTED TO 582583	2472.	4.13	323.	108.	108.	1.34
+	HYDROGRAPH AT 209H	242.	4.03	19.	6.	6.	0.08
+	2 COMBINED AT C583	2567.	4.12	340.	114.	114.	1.42
+	ROUTED TO 583584	2536.	4.20	340.	114.	114.	1.42
+	HYDROGRAPH AT 209I	604.	4.02	42.	14.	14.	0.18
+	2 COMBINED AT C584I	2656.	4.18	377.	127.	127.	1.60
+	ROUTED TO C584O	925.	4.65	357.	127.	127.	1.60
+	ROUTED TO 584597	903.	4.78	356.	127.	127.	1.60
+	HYDROGRAPH AT 210L	413.	4.03	31.	10.	10.	0.14
+	2 COMBINED AT C597	900.	4.80	381.	136.	136.	1.74
+	ROUTED TO 597598	883.	4.88	380.	136.	136.	1.74

	HYDROGRAPH AT							
+		210M	462.	4.05	38.	13.	13.	0.16
	2 COMBINED AT							
+		C598	884.	4.88	411.	147.	147.	1.90
	HYDROGRAPH AT							
+		210N	162.	4.00	10.	3.	3.	0.05
	4 COMBINED AT							
+		C599I	2474.	4.17	1162.	508.	508.	7.13
	ROUTED TO							
+		C599O	1631.	5.00	994.	508.	508.	7.13

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

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1*************************************                                    *************************************
*                                   *                                    *                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*                                    *   U.S. ARMY CORPS OF ENGINEERS    *
*              MAY   1991           *                                    *   HYDROLOGIC ENGINEERING CENTER   *
*           VERSION 4.0.1E          *                                    *         609 SECOND STREET         *
*                                   *                                    *      DAVIS, CALIFORNIA 95616      *
*  RUN DATE  10/16/96  TIME  10:17:43*                                    *          (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        FOUNTAIN HILLS ADMP - Project No. 63
             2          ID        Future Condition Model                          File:  MODEL-24.IH1
             3          ID        100-Year ,24-Hour Storm, Clark Unit Hydrograph   Date:  03/08/96 CCC
                        *
             4          IT       1                    1800
             5          IO       5
             6          IN      15
                        *
                        * Point precipitation values are are based on Hydro-40 DARF.
                        *   0.01    5.00   10.00   50.00   80.00  100.00  200.00
                        *  1.000   0.980   0.949   0.883   0.861   0.850   0.819
                        *
             7          JD    4.20    0.01
                        * The following PC records are a 24-hour SCS Type II rainfall distribution.
             8          PC   0.000   0.002   0.005   0.008   0.011   0.013   0.016   0.019   0.022   0.025
             9          PC   0.028   0.032   0.035   0.038   0.041   0.044   0.048   0.053   0.056   0.060
            10          PC   0.063   0.067   0.071   0.075   0.080   0.084   0.089   0.093   0.098   0.103
            11          PC   0.109   0.114   0.120   0.127   0.133   0.140   0.147   0.155   0.163   0.172
            12          PC   0.181   0.192   0.204   0.220   0.235   0.259   0.283   0.473   0.663   0.699
            13          PC   0.735   0.754   0.772   0.785   0.799   0.810   0.820   0.829   0.838   0.846
            14          PC   0.854   0.861   0.868   0.874   0.880   0.885   0.891   0.900   0.902   0.910
            15          PC   0.912   0.920   0.921   0.926   0.929   0.930   0.937   0.941   0.945   0.950
            16          PC   0.952   0.957   0.959   0.962   0.965   0.970   0.972   0.973   0.978   0.981
            17          PC   0.984   0.987   0.989   0.992   0.995   0.998   1.000
            18          JD    4.12    5.00
            19          JD    3.99   10.00
            20          JD    3.71   50.00
            21          JD    3.62   80.00
                        *

            22          KK    207A
            23          KM   Sub-Basin   207A
            24          KM
            25          KM      The Clark Unit Hydrograph is used for this basin.
            26          KM          The Natural time-area relation is used for this basin.
            27          KM
            28          KM      Time of Concentration for this sub-basin is based on the following:
            29          KM          An rainfall areal reduction factor of 1.000
            30          KM
            31          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
            32          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
            33          KM   .25 .25 .24 .24 .24 .24 .02 .02 .02 .02 .02 .02 .01 .01 .01 .01 .01 .01
            34          KM
            35          KM          L=   1.356 miles, S=  351 feet/mile, Kb= .13
            36          KM
            37          BA   0.256
            38          LG    0.24    0.35    4.55    0.37   29.81
            39          UC   0.496   0.471
            40          UA       0       3       5       8      12      20      43      75      90      96
            41          UA     100
                        *
```

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

  42          KK   207B
  43          KM   Sub-Basin   207B
  44          KM
  45          KM      The Clark Unit Hydrograph is used for this basin.
  46          KM          The Natural time-area relation is used for this basin.
  47          KM
  48          KM      Time of Concentration for this sub-basin is based on the following:
  49          KM          An rainfall areal reduction factor of 1.000
  50          KM
  51          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
  52          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
  53          KM   .25 .25 .25 .25 .24 .24 .02 .02 .02 .02 .02 .02 .01 .01 .01 .01 .01 .01
  54          KM
  55          KM          L=   1.312 miles, S=  359 feet/mile, Kb= .13
  56          KM
  57          BA   0.208
  58          LG    0.24    0.35    4.45    0.38   32.42
  59          UC   0.483   0.502
  60          UA       0       3       5       8      12      20      43      75      90      96
  61          UA     100
              *

  62          KK   C550
  63          KM      Hydrograph combine 207A + 207B at C550
  64          HC       2
              *

  65          KK  550552
  66          KM      Normal depth channel route from C550 to C552
  67          KM      Source:  Hydrology Field Reconnaissance
  68          RS       4    FLOW      -1
  69          RC   0.050   0.045   0.050  4410.0  0.0528
  70          RX  1000.0  1005.0  1018.0  1028.0  1038.0  1043.0  1048.0  1055.0
  71          RY  2188.0  2184.0  2180.0  2176.0  2176.0  2180.0  2184.0  2188.0
              *

  72          KK   207C
  73          KM   Sub-Basin   207C
  74          KM
  75          KM      The Clark Unit Hydrograph is used for this basin.
  76          KM          The Natural time-area relation is used for this basin.
  77          KM
  78          KM      Time of Concentration for this sub-basin is based on the following:
  79          KM          An rainfall areal reduction factor of 1.000
  80          KM
  81          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
  82          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
  83          KM   .25 .25 .25 .25 .24 .24 .01 .01 .01 .01 .01 .01 .00 .00 .00 .00 .00 .00
  84          KM
  85          KM          L=   0.974 miles, S=  297 feet/mile, Kb= .11
  86          KM
  87          BA   0.173
  88          LG    0.19    0.37    5.30    0.26   13.69
  89          UC   0.404   0.360
```



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

  90          UA       0       3       5       8      12      20      43      75      90      96
  91          UA     100
              *

  92          KK   C552L
  93          KM      Hydrograph combine 550552 + 207C at C552 left branch
  94          HC       2
              *

  95          KK   207D
  96          KM   Sub-Basin   207D
  97          KM
  98          KM      The Clark Unit Hydrograph is used for this basin.
  99          KM          The HEC-1 time-area relation is used for this basin.
 100          KM
 101          KM      Time of Concentration for this sub-basin is based on the following:
 102          KM          An rainfall areal reduction factor of 1.000
 103          KM
 104          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 105          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 106          KM   .26 .26 .26 .26 .25 .25 .02 .02 .02 .02 .02 .02 .01 .01 .01 .01 .01 .01
 107          KM
 108          KM          L=   1.036 miles, S=  373 feet/mile, Kb= .09
 109          KM
 110          BA   0.197
 111          LG    0.18    0.31    4.35    0.38   41.30
```

```
 112          UC   0.346   0.296
              *

 113          KK  551552
 114          KM      Normal depth channel route from C551 to C552
 115          KM      Source:  100 Scale 4' CI Mapping
 116          RS       5    FLOW      -1
 117          RC   0.050   0.045   0.050  4410.0  0.0528
 118          RX  1000.0  1005.0  1018.0  1028.0  1038.0  1043.0  1048.0  1055.0
 119          RY  2188.0  2184.0  2180.0  2176.0  2176.0  2180.0  2184.0  2188.0
              *

 120          KK    207E
 121          KM   Sub-Basin   207E
 122          KM
 123          KM      The Clark Unit Hydrograph is used for this basin.
 124          KM          The Urban time-area relation is used for this basin.
 125          KM
 126          KM      Time of Concentration for this sub-basin is based on the following:
 127          KM          An rainfall areal reduction factor of 1.000
 128          KM
 129          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 130          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 131          KM   .26 .26 .26 .26 .26 .26 .02 .02 .02 .02 .02 .02 .01 .01 .01 .01 .01 .01
 132          KM
 133          KM          L=   1.366 miles, S=  315 feet/mile, Kb= .07
 134          KM
 135          BA   0.157
 136          LG    0.15    0.29    4.35    0.38   44.41
1                                          HEC-1 INPUT                                                    PAGE  4

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

 137          UC   0.363   0.443
 138          UA       0       5      16      30      65      77      84      90      94      97
 139          UA     100
              *

 140          KK   C552R
 141          KM      Hydrograph combine 551552 + 207E at C552 right branch
 142          HC       2
              *

 143          KK    C552
 144          KM      Hydrograph combine C552L + C552R at C552
 145          HC       2
              *

 146          KK  552553
 147          KM      Normal depth channel route from C552 to C553
 148          KM      Source:  Hydrology Field Reconnaissance
 149          RS       2    FLOW      -1
 150          RC   0.060   0.050   0.060  1336.0  0.0337
 151          RX   993.0  1010.0  1055.0  1061.0  1082.0  1096.0  1105.0  1127.0
 152          RY    98.0    94.3    94.4    94.0    94.3    94.5    96.2    98.0
              *

 153          KK    207F
 154          KM   Sub-Basin   207F
 155          KM
 156          KM      The Clark Unit Hydrograph is used for this basin.
 157          KM          The HEC-1 time-area relation is used for this basin.
 158          KM
 159          KM      Time of Concentration for this sub-basin is based on the following:
 160          KM          An rainfall areal reduction factor of 1.000
 161          KM
 162          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 163          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 164          KM   .26 .25 .25 .25 .25 .25 .02 .02 .02 .02 .02 .02 .01 .01 .01 .01 .01 .01
 165          KM
 166          KM          L=   0.794 miles, S=  296 feet/mile, Kb= .11
 167          KM
 168          BA   0.126
 169          LG    0.20    0.32    4.40    0.39   38.35
 170          UC   0.363   0.325
              *

 171          KK    C553
 172          KM      Hydrograph combine 552553 + 207F at C553
 173          HC       2
              *

 174          KK  553556
 175          KM      Normal depth channel route from C553 to C556
 176          KM      Source:  HEC-2 Cross Section: AS 6.118
 177          RS       2    FLOW      -1
 178          RC   0.055   0.045   0.060  2393.0  0.0255
 179          RX  9904.4  9945.9  9974.0  9987.4  9994.9 10008.6 10027.0 10045.3
1                                          HEC-1 INPUT                                                    PAGE  5
```

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

 180          RY  2004.2  2003.9  1991.7  1990.4  1987.9  1988.2  1997.5  2006.7
              *

 181          KK    207G
 182          KM   Sub-Basin   207G
 183          KM
 184          KM      The Clark Unit Hydrograph is used for this basin.
 185          KM          The HEC-1 time-area relation is used for this basin.
 186          KM
 187          KM      Time of Concentration for this sub-basin is based on the following:
 188          KM          An rainfall areal reduction factor of 1.000
 189          KM
 190          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 191          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 192          KM   .25 .25 .25 .25 .25 .24 .01 .01 .01 .01 .01 .01 .00 .00 .00 .00 .00 .00
 193          KM
 194          KM          L=   1.467 miles, S=  198 feet/mile, Kb= .10
 195          KM
 196          BA   0.236
 197          LG    0.17    0.37    5.60    0.23    9.10
 198          UC   0.554   0.594
              *

 199          KK   C556L
 200          KM     Hydrograph combine 553556 + 207G at C556 left branch
 201          HC      2
              *

 202          KK    207H
 203          KM   Sub-Basin   207H
 204          KM
 205          KM     The Clark Unit Hydrograph is used for this basin.
 206          KM         The Urban time-area relation is used for this basin.
 207          KM
 208          KM     Time of Concentration for this sub-basin is based on the following:
 209          KM         An rainfall areal reduction factor of 1.000
 210          KM
 211          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 212          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 213          KM   .27 .27 .27 .26 .26 .26 .02 .02 .02 .02 .02 .02 .02 .02 .02 .02 .02 .02
 214          KM
 215          KM          L=   1.044 miles, S=  371 feet/mile, Kb= .05
 216          KM
 217          BA   0.124
 218          LG    0.13    0.27    4.35    0.36   46.78
 219          UC   0.250   0.270
 220          UA       0       5      16      30      65      77      84      90      94      97
 221          UA     100
              *
```



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

 222          KK  554555
 223          KM     Normal depth channel route from C554 to C555
 224          KM     Source:  100 Scale 4' CI Mapping
 225          RS       3    FLOW      -1
 226          RC   0.050   0.045   0.050  2497.0  0.0649
 227          RX  1000.0  1025.0  1080.0  1100.0  1120.0  1130.0  1140.0  1155.0
 228          RY  2192.0  2188.0  2186.0  2184.0  2184.0  2188.0  2192.0  2194.0
              *

 229          KK    207I
 230          KM   Sub-Basin   207I
 231          KM
 232          KM     The Clark Unit Hydrograph is used for this basin.
 233          KM         The Urban time-area relation is used for this basin.
 234          KM
 235          KM     Time of Concentration for this sub-basin is based on the following:
 236          KM         An rainfall areal reduction factor of 1.000
 237          KM
 238          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 239          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 240          KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .02 .02 .02 .02 .02 .02
 241          KM
 242          KM          L=   0.810 miles, S=  320 feet/mile, Kb= .03
 243          KM
 244          BA   0.073
 245          LG    0.09    0.25    4.40    0.35   50.00
 246          UC   0.175   0.201
 247          UA       0       5      16      30      65      77      84      90      94      97
 248          UA     100
              *

 249          KK    C555
 250          KM     Hydrograph combine 554555 + 207I at C555
```

```
 251          HC       2
              *

 252          KK  555556
 253          KM      Normal depth channel route from C555 to C556
 254          KM      Source:  200 Scale Mapping
 255          RS       7    FLOW      -1
 256          RC   0.050   0.050   0.055  3353.0  0.0480
 257          RX  1000.0  1050.0  1090.0  1095.0  1130.0  1150.0  1160.0  1185.0
 258          RY  2020.0  2016.5  2006.0  2004.0  2005.0  2006.0  2010.0  2020.0
              *

 259          KK    207J
 260          KM   Sub-Basin   207J
 261          KM
 262          KM      The Clark Unit Hydrograph is used for this basin.
 263          KM          The Urban time-area relation is used for this basin.
 264          KM
 265          KM      Time of Concentration for this sub-basin is based on the following:
 266          KM          An rainfall areal reduction factor of 1.000
 267          KM
1                                        HEC-1 INPUT                                          PAGE  7

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

 268          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 269          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 270          KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .02 .02 .02 .02 .02 .02 .02 .02 .02
 271          KM
 272          KM          L=   0.714 miles, S=  248 feet/mile, Kb= .04
 273          KM
 274          BA   0.093
 275          LG    0.10    0.26    4.40    0.34   48.61
 276          UC   0.208   0.192
 277          UA       0       5      16      30      65      77      84      90      94      97
 278          UA     100
              *

 279          KK   C556R
 280          KM      Hydrograph combine 555556 + 207J at C556 right branch
 281          HC       2
              *

 282          KK    C556
 283          KM      Hydrograph combine C556L + C556R at C556
 284          HC       2
              *

 285          KK  556557
 286          KM      Normal depth channel route from C556 to C557
 287          KM      Source:  HEC-2 Cross Section: AS 5.765
 288          RS       3    FLOW      -1
 289          RC   0.055   0.045   0.060  2298.0  0.0260
 290          RX  9957.1  9995.6 10000.0 10010.0 10040.4 10084.4 10104.2 10180.7
 291          RY  1949.3  1935.9  1935.8  1936.7  1936.7  1938.2  1947.1  1949.9
              *

 292          KK    207K
 293          KM   Sub-Basin   207K
 294          KM
 295          KM      The Clark Unit Hydrograph is used for this basin.
 296          KM          The Urban time-area relation is used for this basin.
 297          KM
 298          KM      Time of Concentration for this sub-basin is based on the following:
 299          KM          An rainfall areal reduction factor of 1.000
 300          KM
 301          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 302          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 303          KM   .28 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .01 .01 .01 .01 .01 .01
 304          KM
 305          KM          L=   0.859 miles, S=  294 feet/mile, Kb= .05
 306          KM
 307          BA   0.130
 308          LG    0.11    0.27    5.40    0.21   37.19
 309          UC   0.242   0.217
 310          UA       0       5      16      30      65      77      84      90      94      97
 311          UA     100
              *
1                                        HEC-1 INPUT                                          PAGE  8

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

 312          KK   C557R
 313          KM      Hydrograph combine 556557 + 207K at C557
 314          HC       2
              *

 315          KK    207L
```

```
316          KM   Sub-Basin   207L
317          KM
318          KM      The Clark Unit Hydrograph is used for this basin.
319          KM          The Urban time-area relation is used for this basin.
320          KM
321          KM      Time of Concentration for this sub-basin is based on the following:
322          KM          An rainfall areal reduction factor of 1.000
323          KM
324          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
325          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
326          KM   .28 .28 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .01 .01 .01 .01 .01 .01
327          KM
328          KM          L=   0.667 miles, S=  236 feet/mile, Kb= .04
329          KM
330          BA   0.080
331          LG    0.09    0.26    6.00    0.16   33.25
332          UC   0.204   0.193
333          UA       0       5      16      30      65      77      84      90      94      97
334          UA     100
             *

335          KK    C557
336          KM      Hydrograph combine C557R + 207L at C557
337          HC       2
             *
             * *
             * * C557 is the total flow in Ashbrook Wash downstream of Golden Eagle Blvd.
             * * at fire station
             * *
             *

338          KK  557558
339          KM      Normal depth channel route from C557 to C558
340          KM      Source:  HEC-2 Cross Section: AS 5.254
341          RS       3    FLOW      -1
342          RC   0.055   0.045   0.060  2652.0  0.0242
343          RX  9662.0  9965.0  9967.0 10000.0 10072.0 10095.0 10122.0 10175.0
344          RY  1890.0  1885.9  1884.0  1878.0  1880.0  1886.0  1888.0  1890.0
             *

345          KK    207M
346          KM   Sub-Basin   207M
347          KM
348          KM      The Clark Unit Hydrograph is used for this basin.
349          KM          The Urban time-area relation is used for this basin.
350          KM
351          KM      Time of Concentration for this sub-basin is based on the following:
352          KM          An rainfall areal reduction factor of 1.000
```



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

353          KM
354          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
355          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
356          KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .01 .01 .01 .01 .01 .01
357          KM
358          KM          L=   0.636 miles, S=  295 feet/mile, Kb= .04
359          KM
360          BA   0.116
361          LG    0.11    0.28    6.00    0.17   23.09
362          UC   0.188   0.137
363          UA       0       5      16      30      65      77      84      90      94      97
364          UA     100
             *

365          KK    C558
366          KM      Hydrograph combine 557558 + 207M at C558
367          HC       2
             *

368          KK  558560
369          KM      Normal depth channel route from C558 to C560
370          KM      Source:  HEC-2 Cross Section: AS 4.839
371          RS       2    FLOW      -1
372          RC   0.055   0.045   0.060  1986.0  0.0185
373          RX  9777.0  9897.0  9933.1  9970.6 10042.2 10063.4 10121.6 10204.9
374          RY  1840.3  1837.3  1836.3  1824.3  1822.7  1828.5  1827.7  1842.7
             *

375          KK    2070
376          KM   Sub-Basin   2070
377          KM
378          KM      The Clark Unit Hydrograph is used for this basin.
379          KM          The Urban time-area relation is used for this basin.
380          KM
381          KM      Time of Concentration for this sub-basin is based on the following:
382          KM          An rainfall areal reduction factor of 1.000
383          KM
```

```
 384          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 385          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 386          KM   .27 .27 .26 .26 .26 .26 .02 .02 .02 .02 .02 .02 .01 .01 .01 .01 .01 .01
 387          KM
 388          KM          L=   0.643 miles, S=  275 feet/mile, Kb= .04
 389          KM
 390          BA   0.131
 391          LG    0.13    0.29    5.60    0.21   23.47
 392          UC   0.192   0.133
 393          UA       0       5      16      30      65      77      84      90      94      97
 394          UA     100
              *
1                                          HEC-1 INPUT                                          PAGE 10

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

 395          KK   C560R
 396          KM      Hydrograph combine 558560 + 207O at C560 right branch
 397          HC       2
              *

 398          KK    207N
 399          KM   Sub-Basin   207N
 400          KM
 401          KM      The Clark Unit Hydrograph is used for this basin.
 402          KM          The Urban time-area relation is used for this basin.
 403          KM
 404          KM      Time of Concentration for this sub-basin is based on the following:
 405          KM          An rainfall areal reduction factor of 1.000
 406          KM
 407          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 408          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 409          KM   .27 .27 .27 .27 .27 .26 .03 .02 .02 .02 .02 .02 .01 .01 .01 .01 .01 .01
 410          KM
 411          KM          L=   0.431 miles, S=  190 feet/mile, Kb= .03
 412          KM
 413          BA   0.049
 414          LG    0.09    0.25    4.80    0.27   35.87
 415          UC   0.150   0.128
 416          UA       0       5      16      30      65      77      84      90      94      97
 417          UA     100
              *

 418          KK  559560
 419          KM      Normal depth channel route from C559 to C560
 420          KM      Source:  200 Scale Mapping
 421          RS       4    FLOW      -1
 422          RC   0.050   0.045   0.050  2170.0  0.0230
 423          RX  1000.0  1050.0  1080.0  1100.0  1110.0  1140.0  1170.0  1205.0
 424          RY  1854.0  1852.0  1850.0  1848.0  1848.0  1850.0  1852.0  1854.0
              *

 425          KK   C560I
 426          KM      Hydrograph combine C560R + 559560 at C560I
 427          HC       2
              *
              * *
              * * C560I is the total flow in Ashbrook Wash upstream of Dam 6
              * *
              *

 428          KK   C560O
 429          KM      Reservoir route at C560 (Dam 6).
 430          RS       1    ELEV  1808.8
 431          SV    0.00    1.71   14.81   34.65   60.43   93.47  135.64  183.00  186.00  191.44
 432          SV  197.00  205.00  212.00  219.00  226.40  234.00  242.00  246.00  250.00  254.00
 433          SE  1808.8  1812.0  1816.0  1820.0  1824.0  1828.0  1832.0  1835.4  1835.6  1836.0
 434          SE  1836.4  1836.8  1837.2  1837.6  1838.0  1838.4  1838.8  1839.0  1839.2  1839.4
 435          SQ       0      57     136     184     224     257     285     303     319     440
 436          SQ     691    1055    1500    2018    2600    3243    3944    4315    4699    5097
1                                          HEC-1 INPUT                                          PAGE 11

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

 437          RL                    0.40
              *
              * *
              * * End Basin 207.  Start Basin 210 temporarily
              * *
              *

 438          KK  560585
 439          KM      Normal depth channel route from C560 to C585
 440          KM      Source:  HEC-2 Cross Section: AS4.311
 441          RS       6    FLOW      -1
 442          RC   0.050   0.025   0.050  3127.0  0.0272
 443          RX  9850.4  9950.4  9974.4 10000.0 10035.5 10059.8 10080.4 10104.4
 444          RY  1772.0  1771.7  1765.3  1765.3  1765.9  1768.5  1773.3  1773.7
```

```
                 *
445              KK    210A
446              KM   Sub-Basin   210A
447              KM
448              KM      The Clark Unit Hydrograph is used for this basin.
449              KM          The Urban time-area relation is used for this basin.
450              KM
451              KM      Time of Concentration for this sub-basin is based on the following:
452              KM          An rainfall areal reduction factor of 1.000
453              KM
454              KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
455              KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
456              KM   .27 .26 .26 .26 .26 .26 .02 .02 .02 .02 .02 .02 .01 .01 .01 .01 .01 .01
457              KM
458              KM          L=   0.631 miles, S=  233 feet/mile, Kb= .03
459              KM
460              BA   0.123
461              LG    0.09    0.25    5.00    0.24   16.65
462              UC   0.175   0.122
463              UA       0       5      16      30      65      77      84      90      94      97
464              UA     100
                 *

465              KK    C585
466              KM      Hydrograph combine 560585 + 210A at C585
467              HC       2
                 *
                 * *
                 * * C585 is the total flow in Ashbrook Wash at Golden Eagle Blvd. just
                 * * upstream of DAM 4
                 * *
                 * * Temporarily stop Basin 210.  Start Basin 208
                 * *
                 * * Start Bristol Wash
                 * *
                 *
1                                          HEC-1 INPUT                                          PAGE 12

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

468              KK    208A
469              KM   Sub-Basin   208A
470              KM
471              KM      The Clark Unit Hydrograph is used for this basin.
472              KM          The Urban time-area relation is used for this basin.
473              KM
474              KM      Time of Concentration for this sub-basin is based on the following:
475              KM          An rainfall areal reduction factor of 1.000
476              KM
477              KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
478              KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
479              KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .02 .02 .02 .02 .02 .02
480              KM
481              KM          L=   0.626 miles, S=  366 feet/mile, Kb= .03
482              KM
483              BA   0.139
484              LG    0.09    0.25    4.35    0.35   49.86
485              UC   0.150   0.096
486              UA       0       5      16      30      65      77      84      90      94      97
487              UA     100
                 *

488              KK  561563
489              KM      Normal depth channel route from C561 to C563
490              KM      Source:  100 Scale 4' CI Mapping
491              RS       2    FLOW      -1
492              RC   0.050   0.045   0.050  2335.0  0.0856
493              RX  1000.0  1004.0  1009.0  1019.0  1037.0  1045.0  1060.0  1075.0
494              RY  2280.0  2276.0  2272.0  2268.0  2268.0  2272.0  2274.0  2276.0
                 *

495              KK    208B
496              KM   Sub-Basin   208B
497              KM
498              KM      The Clark Unit Hydrograph is used for this basin.
499              KM          The Urban time-area relation is used for this basin.
500              KM
501              KM      Time of Concentration for this sub-basin is based on the following:
502              KM          An rainfall areal reduction factor of 1.000
503              KM
504              KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
505              KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
506              KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .02 .02 .02 .02 .02 .02
507              KM
508              KM          L=   0.491 miles, S=  325 feet/mile, Kb= .03
509              KM
510              BA   0.027
```

```
 511          LG    0.09    0.25    4.35    0.35   50.00
 512          UC   0.138   0.182
 513          UA       0       5      16      30      65      77      84      90      94      97
 514          UA     100
              *
1                                          HEC-1 INPUT                                          PAGE 13

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

 515          KK   C563R
 516          KM      Hydrograph combine 561563 + 206B at C563 right branch
 517          HC       2
              *

 518          KK    208C
 519          KM   Sub-Basin   208C
 520          KM
 521          KM      The Clark Unit Hydrograph is used for this basin.
 522          KM          The HEC-1 time-area relation is used for this basin.
 523          KM
 524          KM      Time of Concentration for this sub-basin is based on the following:
 525          KM          An rainfall areal reduction factor of 1.000
 526          KM
 527          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 528          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 529          KM   .26 .26 .26 .25 .25 .25 .02 .02 .02 .02 .02 .02 .01 .01 .01 .01 .01 .01
 530          KM
 531          KM          L=   0.639 miles, S=  387 feet/mile, Kb= .11
 532          KM
 533          BA   0.066
 534          LG    0.20    0.32    4.35    0.38   40.11
 535          UC   0.296   0.314
              *

 536          KK  562563
 537          KM      Normal depth channel route from C562 to C563
 538          KM      Source:  100 Scale 4' CI Mapping
 539          RS       5    FLOW      -1
 540          RC   0.050   0.045   0.050  3745.0  0.1106
 541          RX  1000.0  1007.0  1012.0  1017.0  1022.0  1027.0  1044.0  1064.0
 542          RY  2420.0  2416.0  2412.0  2411.8  2411.8  2412.0  2416.0  2420.0
              *

 543          KK    208D
 544          KM   Sub-Basin   208D
 545          KM
 546          KM      The Clark Unit Hydrograph is used for this basin.
 547          KM          The Urban time-area relation is used for this basin.
 548          KM
 549          KM      Time of Concentration for this sub-basin is based on the following:
 550          KM          An rainfall areal reduction factor of 1.000
 551          KM
 552          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 553          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 554          KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .02 .02 .02 .02 .02 .02
 555          KM
 556          KM          L=   0.772 miles, S=  327 feet/mile, Kb= .03
 557          KM
 558          BA   0.075
 559          LG    0.09    0.25    4.35    0.35   50.00
 560          UC   0.171   0.186
 561          UA       0       5      16      30      65      77      84      90      94      97
 562          UA     100
              *
1                                          HEC-1 INPUT                                          PAGE 14

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

 563          KK   C563L
 564          KM      Hydrograph combine 562563 + 208D at C563 left branch
 565          HC       2
              *

 566          KK    C563
 567          KM      Hydrograph combine C563R + C563L at C563
 568          HC       2
              *

 569          KK  563564
 570          KM      Normal depth channel route from C563 to C564
 571          KM      Source:  HEC-2 Cross Section: BR 2.667
 572          RS       3    FLOW      -1
 573          RC   0.080   0.080   0.080  2762.0  0.0540
 574          RX  9947.0  9980.4  9986.4  9995.5 10000.0 10005.8 10021.9 10037.2
 575          RY  2103.4  2089.5  2089.2  2084.5  2084.4  2084.3  2098.5  2100.6
              *
```

```
576          KK    208E
577          KM   Sub-Basin   208E
578          KM
579          KM      The Clark Unit Hydrograph is used for this basin.
580          KM          The Urban time-area relation is used for this basin.
581          KM
582          KM      Time of Concentration for this sub-basin is based on the following:
583          KM          An rainfall areal reduction factor of 1.000
584          KM
585          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
586          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
587          KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .02 .02 .02 .02 .02 .02
588          KM
589          KM          L=   0.644 miles, S=  306 feet/mile, Kb= .03
590          KM
591          BA   0.062
592          LG    0.09    0.25    4.35    0.35   50.00
593          UC   0.158   0.164
594          UA       0       5      16      30      65      77      84      90      94      97
595          UA     100
             *

596          KK   C564R
597          KM     Hydrograph combine 563564 + 208E at C564 right branch
598          HC       2
             *

599          KK    208F
600          KM   Sub-Basin   208F
601          KM
602          KM      The Clark Unit Hydrograph is used for this basin.
603          KM          The Urban time-area relation is used for this basin.
604          KM
605          KM      Time of Concentration for this sub-basin is based on the following:
606          KM          An rainfall areal reduction factor of 1.000
```



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

607          KM
608          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
609          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
610          KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .02 .02 .02 .02 .02 .02
611          KM
612          KM          L=   0.582 miles, S=  293 feet/mile, Kb= .03
613          KM
614          BA   0.069
615          LG    0.09    0.25    4.35    0.35   49.92
616          UC   0.154   0.138
617          UA       0       5      16      30      65      77      84      90      94      97
618          UA     100
             *

619          KK    C564
620          KM     Hydrograph combine C564R + 208F at C564
621          HC       2
             *

622          KK  564565
623          KM     Normal depth channel route from C564 to C565
624          KM     Source:  HEC-2 Cross Section: BR 2.236
625          RS       5    FLOW      -1
626          RC   0.080   0.080   0.080  3243.0  0.0398
627          RX  9937.7  9965.8  9985.5 10000.0 10008.6 10016.4 10037.5 10054.4
628          RY  1998.7  1998.1  1988.9  1988.8  1989.0  1990.4  1990.6  1999.1
             *

629          KK    208G
630          KM   Sub-Basin   208G
631          KM
632          KM      The Clark Unit Hydrograph is used for this basin.
633          KM          The Urban time-area relation is used for this basin.
634          KM
635          KM      Time of Concentration for this sub-basin is based on the following:
636          KM          An rainfall areal reduction factor of 1.000
637          KM
638          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
639          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
640          KM   .28 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .02 .02 .02 .02 .02 .02
641          KM
642          KM          L=   0.772 miles, S=  299 feet/mile, Kb= .04
643          KM
644          BA   0.129
645          LG    0.11    0.26    4.60    0.31   54.19
646          UC   0.204   0.165
647          UA       0       5      16      30      65      77      84      90      94      97
648          UA     100
             *
```

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

 649          KK    C565
 650          KM      Hydrograph combine 564565 + 208G at C565
 651          HC       2
              *

 652          KK  565568
 653          KM      Normal depth channel route from C565 to C568
 654          KM      Source:  HEC-2 Cross Section: BR 1.853
 655          RS       3    FLOW      -1
 656          RC   0.050   0.060   0.045  2254.0  0.0333
 657          RX  9966.2  9975.6  9985.0 10000.0 10017.9 10027.6 10040.1 10052.5
 658          RY  1929.1  1924.5  1919.8  1918.3  1918.4  1919.6  1925.2  1930.8
              *

 659          KK    208H
 660          KM   Sub-Basin   208H
 661          KM
 662          KM      The Clark Unit Hydrograph is used for this basin.
 663          KM          The Urban time-area relation is used for this basin.
 664          KM
 665          KM      Time of Concentration for this sub-basin is based on the following:
 666          KM          An rainfall areal reduction factor of 1.000
 667          KM
 668          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 669          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 670          KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .02 .01 .01 .01 .01 .01 .01
 671          KM
 672          KM          L=   0.632 miles, S=  283 feet/mile, Kb= .07
 673          KM
 674          BA   0.043
 675          LG    0.12    0.30    5.60    0.21   35.43
 676          UC   0.254   0.338
 677          UA      0       5      16      30      65      77      84      90      94      97
 678          UA    100
              *

 679          KK   C568L
 680          KM      Hydrograph combine 565568 + 208H at C568 left branch
 681          HC       2
              *
              * *
              * * Start Cholula Wash
              * *
              *

 682          KK    208I
 683          KM   Sub-Basin   208I
 684          KM
 685          KM      The Clark Unit Hydrograph is used for this basin.
 686          KM          The Urban time-area relation is used for this basin.
 687          KM
 688          KM      Time of Concentration for this sub-basin is based on the following:
 689          KM          An rainfall areal reduction factor of 1.000
 690          KM
1                                          HEC-1 INPUT                                          PAGE 17

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

 691          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 692          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 693          KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .02 .02 .02 .02 .02 .02
 694          KM
 695          KM          L=   0.823 miles, S=  363 feet/mile, Kb= .03
 696          KM
 697          BA   0.117
 698          LG    0.09    0.25    4.35    0.35   50.00
 699          UC   0.171   0.151
 700          UA      0       5      16      30      65      77      84      90      94      97
 701          UA    100
              *

 702          KK    208J
 703          KM   Sub-Basin   208J
 704          KM
 705          KM      The Clark Unit Hydrograph is used for this basin.
 706          KM          The Urban time-area relation is used for this basin.
 707          KM
 708          KM      Time of Concentration for this sub-basin is based on the following:
 709          KM          An rainfall areal reduction factor of 1.000
 710          KM
 711          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 712          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 713          KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .02 .02 .02 .02 .02 .02
 714          KM
 715          KM          L=   0.974 miles, S=  353 feet/mile, Kb= .03
 716          KM
```

```
 717          BA   0.081
 718          LG    0.09    0.25    4.35    0.35   50.00
 719          UC   0.188   0.237
 720          UA       0       5      16      30      65      77      84      90      94      97
 721          UA     100
              *

 722          KK    C566
 723          KM      Hydrograph combine 208I + 208J at C566
 724          HC       2
              *

 725          KK  566567
 726          KM      Normal depth channel route from C566 to C567
 727          KM      Source:  HEC-2 Cross Section: CH 0.766
 728          RS       3    FLOW      -1
 729          RC   0.080   0.080   0.080  1463.0  0.0410
 730          RX  9925.3  9949.0  9965.7  9988.3 10000.0 10016.2 10029.5 10042.7
 731          RY  2047.9  2043.7  2035.3  2033.3  2031.4  2033.0  2040.1  2047.2
              *

 732          KK    208K
 733          KM   Sub-Basin   208K
 734          KM
 735          KM      The Clark Unit Hydrograph is used for this basin.
 736          KM          The Urban time-area relation is used for this basin.
 737          KM
```



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

 738          KM      Time of Concentration for this sub-basin is based on the following:
 739          KM          An rainfall areal reduction factor of 1.000
 740          KM
 741          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 742          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 743          KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .02 .02 .02 .02 .02 .02
 744          KM
 745          KM          L=   0.431 miles, S=  317 feet/mile, Kb= .03
 746          KM
 747          BA   0.048
 748          LG    0.09    0.25    4.35    0.35   54.38
 749          UC   0.129   0.110
 750          UA       0       5      16      30      65      77      84      90      94      97
 751          UA     100
              *

 752          KK   C567L
 753          KM      Hydrograph combine 566567 + 208K at C567 left branch
 754          HC       2
              *

 755          KK    208L
 756          KM   Sub-Basin   208L
 757          KM
 758          KM      The Clark Unit Hydrograph is used for this basin.
 759          KM          The Urban time-area relation is used for this basin.
 760          KM
 761          KM      Time of Concentration for this sub-basin is based on the following:
 762          KM          An rainfall areal reduction factor of 1.000
 763          KM
 764          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 765          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 766          KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .02 .02 .02 .02 .02 .02
 767          KM
 768          KM          L=   0.655 miles, S=  334 feet/mile, Kb= .03
 769          KM
 770          BA   0.059
 771          LG    0.09    0.25    4.40    0.35   51.31
 772          UC   0.158   0.171
 773          UA       0       5      16      30      65      77      84      90      94      97
 774          UA     100
              *

 775          KK    C567
 776          KM      Hydrograph combine C567L + 208L at C567
 777          HC       2
              *

 778          KK  567568
 779          KM      Normal depth channel route from C567 to C568
 780          KM      Source:  HEC-2 Cross Section: CH 0.129
 781          RS       5    FLOW      -1
 782          RC   0.050   0.060   0.045  3650.0  0.0389
 783          RX  9945.7  9958.4  9989.8 10000.0 10016.4 10028.3 10045.4 10059.8
 784          RY  1912.1  1905.9  1899.0  1899.3  1898.9  1899.5  1907.1  1911.9
              *
```

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

 785          KK    208M
 786          KM   Sub-Basin   208M
 787          KM
 788          KM      The Clark Unit Hydrograph is used for this basin.
 789          KM          The Urban time-area relation is used for this basin.
 790          KM
 791          KM      Time of Concentration for this sub-basin is based on the following:
 792          KM          An rainfall areal reduction factor of 1.000
 793          KM
 794          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 795          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 796          KM   .28 .28 .28 .27 .27 .27 .03 .03 .03 .03 .03 .03 .02 .02 .02 .02 .02 .02
 797          KM
 798          KM          L=   1.031 miles, S=  321 feet/mile, Kb= .03
 799          KM
 800          BA   0.159
 801          LG    0.09    0.25    4.40    0.34   62.04
 802          UC   0.196   0.177
 803          UA       0       5      16      30      65      77      84      90      94      97
 804          UA     100
              *

 805          KK   C568R
 806          KM      Hydrograph combine 567568 + 208M at C568 right branch
 807          HC       2
              *

 808          KK    C568
 809          KM      Hydrograph combine C568L + C568R at C568
 810          HC       2
              *

 811          KK  568573
 812          KM      Normal depth channel route from C568 to C573
 813          KM      Source:  HEC-2 Cross Section: BR 1.340
 814          RS       3    FLOW     -1
 815          RC   0.098   0.075   0.075  2067.0  0.0324
 816          RX  9921.8  9954.1  9968.9  9991.3 10000.0 10006.9 10025.2 10050.4
 817          RY  1843.8  1840.4  1835.1  1834.7  1832.7  1833.3  1838.1  1854.0
              *

 818          KK    208N
 819          KM   Sub-Basin   208N
 820          KM
 821          KM      The Clark Unit Hydrograph is used for this basin.
 822          KM          The Urban time-area relation is used for this basin.
 823          KM
 824          KM      Time of Concentration for this sub-basin is based on the following:
 825          KM          An rainfall areal reduction factor of 1.000
 826          KM
 827          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 828          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 829          KM   .29 .29 .28 .28 .28 .28 .04 .04 .04 .04 .04 .04 .02 .02 .02 .02 .02 .02
 830          KM
1                                          HEC-1 INPUT                                          PAGE 20

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

 831          KM          L=   0.589 miles, S=  160 feet/mile, Kb= .04
 832          KM
 833          BA   0.047
 834          LG    0.09    0.25    6.20    0.15   62.49
 835          UC   0.213   0.248
 836          UA       0       5      16      30      65      77      84      90      94      97
 837          UA     100
              *

 838          KK   C573L
 839          KM      Hydrograph combine 568573 + 208N at C573 left branch
 840          HC       2
              *
              * *
              * * C573L is the total flow in Bristol Wash upstream of the confluence with
              * * Zapata Wash
              * *
              * * Start Zapata Wash
              * *
              *

 841          KK    208O
 842          KM   Sub-Basin   208O
 843          KM
 844          KM      The Clark Unit Hydrograph is used for this basin.
 845          KM          The Urban time-area relation is used for this basin.
 846          KM
 847          KM      Time of Concentration for this sub-basin is based on the following:
```

```
 848          KM          An rainfall areal reduction factor of 1.000
 849          KM
 850          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 851          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 852          KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .02 .02 .02 .02 .02 .02
 853          KM
 854          KM          L=   1.174 miles, S=  347 feet/mile, Kb= .03
 855          KM
 856          BA   0.230
 857          LG    0.09    0.25    4.60    0.31   48.49
 858          UC   0.208   0.170
 859          UA       0       5      16      30      65      77      84      90      94      97
 860          UA     100
              *

 861          KK  569570
 862          KM      Normal depth channel route from C569 to C570
 863          KM      Source:  HEC-2 Cross Section: ZA 0.493
 864          RS       1    FLOW      -1
 865          RC   0.050   0.035   0.055  1696.0  0.0404
 866          RX  9965.3  9985.5  9998.4 10000.0 10010.6 10019.1 10038.5 10038.5
 867          RY  1919.3  1912.3  1908.1  1907.8  1905.2  1908.1  1920.1  1920.1
              *
```



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

 868          KK    208P
 869          KM   Sub-Basin   208P
 870          KM
 871          KM      The Clark Unit Hydrograph is used for this basin.
 872          KM          The Urban time-area relation is used for this basin.
 873          KM
 874          KM      Time of Concentration for this sub-basin is based on the following:
 875          KM          An rainfall areal reduction factor of 1.000
 876          KM
 877          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 878          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 879          KM   .29 .29 .28 .28 .28 .28 .04 .04 .04 .04 .04 .04 .02 .02 .02 .02 .02 .02
 880          KM
 881          KM          L=   0.471 miles, S=  312 feet/mile, Kb= .03
 882          KM
 883          BA   0.058
 884          LG    0.08    0.25    5.70    0.18   59.29
 885          UC   0.133   0.109
 886          UA       0       5      16      30      65      77      84      90      94      97
 887          UA     100
              *

 888          KK   C570R
 889          KM      Hydrograph combine 569570 + 208P at C570 right branch
 890          HC       2
              *

 891          KK    208Q
 892          KM   Sub-Basin   208Q
 893          KM
 894          KM      The Clark Unit Hydrograph is used for this basin.
 895          KM          The Urban time-area relation is used for this basin.
 896          KM
 897          KM      Time of Concentration for this sub-basin is based on the following:
 898          KM          An rainfall areal reduction factor of 1.000
 899          KM
 900          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 901          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 902          KM   .28 .28 .28 .28 .27 .27 .03 .03 .03 .03 .03 .03 .02 .02 .02 .02 .02 .02
 903          KM
 904          KM          L=   0.823 miles, S=  324 feet/mile, Kb= .04
 905          KM
 906          BA   0.094
 907          LG    0.10    0.26    5.00    0.25   54.26
 908          UC   0.204   0.209
 909          UA       0       5      16      30      65      77      84      90      94      97
 910          UA     100
              *
```



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

 911          KK    C570
 912          KM      Hydrograph combine C570R + 208Q at C570
 913          HC       2
              *
              * *
              * * NOTE: 570572 is too short to route
              * *
              *
```

```
914          KK    208R
915          KM   Sub-Basin   208R
916          KM
917          KM      The Clark Unit Hydrograph is used for this basin.
918          KM          The Urban time-area relation is used for this basin.
919          KM
920          KM      Time of Concentration for this sub-basin is based on the following:
921          KM          An rainfall areal reduction factor of 1.000
922          KM
923          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
924          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
925          KM   .29 .29 .28 .28 .28 .28 .04 .04 .04 .04 .04 .04 .02 .02 .02 .02 .02 .02
926          KM
927          KM          L=   0.238 miles, S=  327 feet/mile, Kb= .03
928          KM
929          BA   0.010
930          LG    0.08    0.23    6.20    0.15   55.16
931          UC   0.092   0.111
932          UA       0       5      16      30      65      77      84      90      94      97
933          UA     100
             *

934          KK  571572
935          KM      Normal depth channel route from C571 to C572
936          KM      Source:  200 Scale Mapping
937          RS       1    FLOW      -1
938          RC   0.040   0.020   0.055  1379.0  0.0566
939          RX  1000.0  1020.0  1040.0  1090.0  1122.0  1125.0  1135.0  1140.0
940          RY  1894.0  1893.0  1892.0  1891.0  1891.0  1892.0  1894.0  1896.0
             *

941          KK    C572
942          KM      Hydrograph combine C570 + 571572 at C572
943          HC       2
             *

944          KK  572573
945          KM      Normal depth channel route from C572 to C573
946          KM      Source:  HEC-2 Cross Section: ZA 0.142
947          RS       1    FLOW      -1
948          RC   0.050   0.035   0.055  1285.0  0.0335
949          RX  9961.8  9976.8  9982.5  9987.0 10009.5 10014.3 10022.1 10029.3
950          RY  1840.3  1832.1  1831.2  1829.5  1829.2  1830.6  1831.2  1835.6
             *
```



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

951          KK    208S
952          KM   Sub-Basin   208S
953          KM
954          KM      The Clark Unit Hydrograph is used for this basin.
955          KM          The Urban time-area relation is used for this basin.
956          KM
957          KM      Time of Concentration for this sub-basin is based on the following:
958          KM          An rainfall areal reduction factor of 1.000
959          KM
960          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
961          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
962          KM   .29 .29 .29 .29 .29 .28 .04 .04 .04 .04 .04 .04 .02 .02 .02 .02 .02 .02
963          KM
964          KM          L=   0.568 miles, S=  234 feet/mile, Kb= .03
965          KM
966          BA   0.068
967          LG    0.08    0.24    6.20    0.15   67.07
968          UC   0.158   0.141
969          UA       0       5      16      30      65      77      84      90      94      97
970          UA     100
             *

971          KK   C573R
972          KM      Hydrograph combine 572573 + 208S at C573 right branch
973          HC       2
             *

974          KK    C573
975          KM      Hydrograph combine C573L + C573R at C573
976          HC       2
             *
             * *
             * * NOTE: 573577 is too short to route
             * *
             * * C573 is the total flow in Bristol Wash upstream of the confluence
             * * with Montezuna Wash
             * *
             * * Start Montezuna Wash
             * *
```

```
                 *
977              KK   208T
978              KM  Sub-Basin   208T
979              KM
980              KM     The Clark Unit Hydrograph is used for this basin.
981              KM         The Urban time-area relation is used for this basin.
982              KM
983              KM     Time of Concentration for this sub-basin is based on the following:
984              KM         An rainfall areal reduction factor of 1.000
985              KM
986              KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
987              KM    5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
988              KM  .28 .28 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .02 .02 .02 .02 .02 .02
989              KM
1                                              HEC-1 INPUT                                          PAGE 24

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

990              KM          L=   0.787 miles, S=  340 feet/mile, Kb= .03
991              KM
992              BA  0.132
993              LG   0.09    0.25    5.20    0.22   44.80
994              UC  0.171   0.136
995              UA      0       5      16      30      65      77      84      90      94      97
996              UA    100
                 *

997              KK   208U
998              KM  Sub-Basin   208U
999              KM
1000             KM     The Clark Unit Hydrograph is used for this basin.
1001             KM         The Urban time-area relation is used for this basin.
1002             KM
1003             KM     Time of Concentration for this sub-basin is based on the following:
1004             KM         An rainfall areal reduction factor of 1.000
1005             KM
1006             KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1007             KM    5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1008             KM  .28 .28 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .01 .01 .01 .01 .01 .01
1009             KM
1010             KM          L=   0.507 miles, S=  360 feet/mile, Kb= .03
1011             KM
1012             BA  0.134
1013             LG   0.09    0.25    5.30    0.21   44.19
1014             UC  0.133   0.072
1015             UA      0       5      16      30      65      77      84      90      94      97
1016             UA    100
                 *

1017             KK   C574
1018             KM     Hydrograph combine 208T + 208U at C574
1019             HC      2
                 *

1020             KK  574575
1021             KM     Normal depth channel route from C574 to C575
1022             KM     Source:  HEC-2 Cross Section: MO 0.587
1023             RS      1    FLOW      -1
1024             RC  0.070   0.050   0.055   823.0  0.0365
1025             RX  9945.0  9970.6  9986.7  9995.9 10002.3 10019.0 10036.7 10055.5
1026             RY  1932.6  1928.5  1922.9  1917.8  1917.7  1924.0  1931.1  1934.1
                 *

1027             KK   208V
1028             KM  Sub-Basin   208V
1029             KM
1030             KM     The Clark Unit Hydrograph is used for this basin.
1031             KM         The Urban time-area relation is used for this basin.
1032             KM
1033             KM     Time of Concentration for this sub-basin is based on the following:
1034             KM         An rainfall areal reduction factor of 1.000
1035             KM
1036             KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1                                              HEC-1 INPUT                                          PAGE 25

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

1037             KM    5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1038             KM  .28 .28 .28 .28 .28 .28 .04 .04 .04 .04 .04 .04 .02 .02 .02 .02 .02 .02
1039             KM
1040             KM          L=   0.354 miles, S=  319 feet/mile, Kb= .03
1041             KM
1042             BA  0.028
1043             LG   0.09    0.21    6.40    0.15   41.15
1044             UC  0.117   0.114
1045             UA      0       5      16      30      65      77      84      90      94      97
1046             UA    100
                 *
```

```
1047          KK    C575
1048          KM      Hydrograph combine 574575 + 208V at C575
1049          HC       2
              *

1050          KK  575576
1051          KM      Normal depth channel route from C575 to C576
1052          KM      Source:  HEC-2 Cross Section: MO 0.307
1053          RS       1    FLOW      -1
1054          RC   0.070   0.050   0.055  2342.0  0.0423
1055          RX  9973.7  9974.0  9986.7 10000.0 10000.5 10009.7 10026.7 10037.3
1056          RY  1861.6  1861.5  1855.0  1853.0  1853.1  1854.8  1863.0  1867.1
              *

1057          KK    208W
1058          KM   Sub-Basin   208W
1059          KM
1060          KM      The Clark Unit Hydrograph is used for this basin.
1061          KM          The Urban time-area relation is used for this basin.
1062          KM
1063          KM      Time of Concentration for this sub-basin is based on the following:
1064          KM          An rainfall areal reduction factor of 1.000
1065          KM
1066          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1067          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1068          KM   .28 .28 .28 .28 .28 .28 .04 .03 .03 .03 .03 .03 .02 .02 .02 .01 .01 .01
1069          KM
1070          KM          L=   0.475 miles, S=  288 feet/mile, Kb= .03
1071          KM
1072          BA   0.050
1073          LG    0.09    0.23    6.20    0.16   42.74
1074          UC   0.138   0.124
1075          UA       0       5      16      30      65      77      84      90      94      97
1076          UA     100
              *

1077          KK    C576
1078          KM      Hydrograph combine 575576 + 208W at C576
1079          HC       2
              *
```



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

1080          KK  576577
1081          KM      Normal depth channel route from C576 to C577
1082          KM      Source:  HEC-2 Cross Section: MO 0.116
1083          RS       1    FLOW      -1
1084          RC   0.070   0.050   0.055   740.0  0.0338
1085          RX  9915.1  9960.0  9985.5 10000.0 10000.1 10007.0 10023.3 10023.4
1086          RY  1826.5  1826.4  1814.5  1812.3  1812.3  1814.8  1830.3  1830.4
              *
              * *
              * * 576577 is the total flow in Montezuna Wash just upstream of the confluence
              * * with Bristol Wash
              * *
              *

1087          KK    C577
1088          KM      Hydrograph combine C577L + 576577 at C570
1089          HC       2
              *
              * *
              * * C577 is the total flow in Bristol Wash downstream of the confluence
              * * with Montezuma Wash
              * *
              *

1090          KK  577578
1091          KM      Normal depth channel route from C577 to C578
1092          KM      Source:  HEC-2 Cross Section: BR 1.099
1093          RS       1    FLOW      -1
1094          RC   0.055   0.045   0.055  1078.0  0.0147
1095          RX  9865.3  9956.6  9991.1 10010.2 10034.3 10063.4 10139.7 10201.7
1096          RY  1821.8  1810.8  1793.2  1792.5  1795.5  1796.1  1813.8  1822.8
              *

1097          KK    208X
1098          KM   Sub-Basin   208X
1099          KM
1100          KM      The Clark Unit Hydrograph is used for this basin.
1101          KM          The Urban time-area relation is used for this basin.
1102          KM
1103          KM      Time of Concentration for this sub-basin is based on the following:
1104          KM          An rainfall areal reduction factor of 1.000
1105          KM
1106          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
```

```
1107          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1108          KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .01 .01 .01 .01 .01 .01
1109          KM
1110          KM          L=   0.417 miles, S=  223 feet/mile, Kb= .05
1111          KM
1112          BA   0.075
1113          LG    0.13    0.29    5.60    0.21   39.42
1114          UC   0.183   0.122
1115          UA       0       5      16      30      65      77      84      90      94      97
1116          UA     100
              *
1                                                HEC-1 INPUT                                                    PAGE 27

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


1117          KK   C578I
1118          KM      Hydrograph combine 577578 + 208X at C578I
1119          HC       2
              *
              * *
              * * C578I is the total flow in Bristol Wash upstream of Dam 11
              * *
              *

1120          KK   C578O
1121          KM      Reservoir route at C578 (Dam 11).
1122          RS       1    ELEV  1779.2
1123          SV    0.00   16.38   31.30   53.65   84.39  126.17  138.00  143.00  147.00  154.47
1124          SV  161.00  167.00  174.00  181.00  187.43  194.00  202.00  205.00
1125          SE  1779.2  1794.0  1798.0  1802.0  1806.0  1810.0  1810.8  1811.2  1811.6  1812.0
1126          SE  1812.4  1812.8  1813.2  1813.6  1814.0  1814.4  1814.8  1815.0
1127          SQ       0     131     181     221     254     283     305     325     328     366
1128          SQ     522     812    1194    1651    2176    2763    3406    4104    4855    5250
1129          SE  1779.2  1786.0  1790.0  1794.0  1798.0  1802.0  1806.0  1810.0  1810.8  1811.2
1130          SE  1811.6  1812.0  1812.4  1812.8  1813.2  1813.6  1814.0  1814.4  1814.8  1815.0
1131          RL                   0.97
              *
              * *
              * * End Basin 208.  Rejoin Basin 210
              * *
              *

1132          KK  578587
1133          KM      Normal depth channel route from C578 to C587
1134          KM      Source:  HEC-2 Cross Section: BR 0.697
1135          RS       3    FLOW      -1
1136          RC   0.055   0.045   0.055  1628.0  0.0191
1137          RX  9926.4  9949.5  9960.1  9984.7 10000.0 10014.1 10031.5 10049.4
1138          RY  1763.0  1762.6  1761.8  1757.0  1757.1  1756.9  1761.4  1768.1
              *

1139          KK    210B
1140          KM   Sub-Basin   210B
1141          KM
1142          KM      The Clark Unit Hydrograph is used for this basin.
1143          KM          The Urban time-area relation is used for this basin.
1144          KM
1145          KM      Time of Concentration for this sub-basin is based on the following:
1146          KM          An rainfall areal reduction factor of 1.000
1147          KM
1148          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1149          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1150          KM   .28 .28 .28 .28 .27 .27 .03 .03 .03 .03 .03 .03 .01 .01 .01 .01 .01 .01
1151          KM
1152          KM          L=   0.930 miles, S=  251 feet/mile, Kb= .03
1153          KM
1154          BA   0.107
1155          LG    0.08    0.25    5.80    0.17   37.15
1156          UC   0.204   0.214
1                                                HEC-1 INPUT                                                    PAGE 28

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

1157          UA       0       5      16      30      65      77      84      90      94      97
1158          UA     100
              *

1159          KK   C586O
1160          KM      Reservoir route at C586.
1161          RS       1    ELEV  1804.4
1162          SV    0.00    0.05    0.36    1.09    2.45    4.45    7.00    9.50    9.60   10.00
1163          SV   10.34   10.70   11.20   11.60   12.10   12.50
1164          SE  1804.4  1806.0  1808.0  1810.0  1812.0  1814.0  1816.0 1817.55  1817.6  1817.8
1165          SE  1818.0  1818.2  1818.4  1818.6  1818.8  1819.0
1166          SQ       0      37     130     219     284     322     353     375     377     393
1167          SQ     432     492     574     680     808     959
              *
```

```
1168          KK  586587
1169          KM      Normal depth channel route from C586 to C587
1170          KM      Source:  200 Scale Mapping
1171          RS       3    FLOW      -1
1172          RC   0.040   0.035   0.040  1905.0  0.0313
1173          RX  1000.0  1020.0  1050.0  1055.0  1065.0  1070.0  1130.0  1150.0
1174          RY  1782.0  1780.0  1772.0  1771.0  1771.0  1772.0  1778.0  1782.0
              *

1175          KK    C587
1176          KM      Hydrograph combine 578587 + 586587 at C578
1177          HC       2
              *

1178          KK  587595
1179          KM      Normal depth channel route from C587 to C595
1180          KM      Source:  HEC-2 Cross Section: BR 0.533
1181          RS       2    FLOW      -1
1182          RC   0.055   0.045   0.055  1039.0  0.0173
1183          RX  9977.2  9980.4  9983.6  9989.9 10009.9 10020.3 10028.8 10037.3
1184          RY  1745.2  1744.0  1742.8  1740.3  1740.3  1742.4  1743.0  1743.6
              *

1185          KK    210C
1186          KM   Sub-Basin   210C
1187          KM
1188          KM      The Clark Unit Hydrograph is used for this basin.
1189          KM          The Urban time-area relation is used for this basin.
1190          KM
1191          KM      Time of Concentration for this sub-basin is based on the following:
1192          KM          An rainfall areal reduction factor of 1.000
1193          KM
1194          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1195          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1196          KM   .26 .26 .26 .26 .26 .26 .02 .02 .02 .02 .02 .02 .01 .01 .01 .01 .01 .01
1197          KM
1198          KM          L=   0.637 miles, S=  198 feet/mile, Kb= .03
1199          KM
1200          BA   0.082
1201          LG    0.11    0.26    4.80    0.28   22.29
```



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

1202          UC   0.183   0.164
1203          UA       0       5      16      30      65      77      84      90      94      97
1204          UA     100
              *

1205          KK   C595L
1206          KM      Hydrograph combine 587595 + 210C at C595 left branch
1207          HC       2
              *
              * *
              * * C595L is the total flow in Bristol Wash upstream of the confluence
              * * with Longmont Wash
              * *
              * * Start Longmont Wash Left Branch
              * *
              *

1208          KK    210D
1209          KM   Sub-Basin   210D
1210          KM
1211          KM      The Clark Unit Hydrograph is used for this basin.
1212          KM          The Urban time-area relation is used for this basin.
1213          KM
1214          KM      Time of Concentration for this sub-basin is based on the following:
1215          KM          An rainfall areal reduction factor of 1.000
1216          KM
1217          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1218          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1219          KM   .28 .28 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .01 .01 .01 .01 .01 .01
1220          KM
1221          KM          L=   0.832 miles, S=  325 feet/mile, Kb= .03
1222          KM
1223          BA   0.140
1224          LG    0.09    0.25    5.80    0.18   33.66
1225          UC   0.179   0.145
1226          UA       0       5      16      30      65      77      84      90      94      97
1227          UA     100
              *

1228          KK  588590
1229          KM      Normal depth channel route from C588 to C590
1230          KM      Source:  HEC-2 Cross Section: LO-LB1 0.128
1231          RS       2    FLOW      -1
1232          RC   0.065   0.050   0.060  1117.0  0.0340
1233          RX  9931.7  9980.6  9984.9 10005.7 10019.1 10033.8 10151.6 10172.9
```

```
1234          RY  1839.3  1833.5  1825.9  1824.7  1825.9  1828.8  1832.9  1838.0
              *

1235          KK    210E
1236          KM   Sub-Basin   210E
1237          KM
1238          KM      The Clark Unit Hydrograph is used for this basin.
1239          KM          The Urban time-area relation is used for this basin.
1240          KM
1241          KM      Time of Concentration for this sub-basin is based on the following:
1                                          HEC-1 INPUT                                          PAGE 30

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

1242          KM          An rainfall areal reduction factor of 1.000
1243          KM
1244          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1245          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1246          KM   .28 .28 .28 .28 .28 .28 .03 .03 .03 .03 .03 .03 .02 .02 .01 .01 .01 .01
1247          KM
1248          KM          L=   0.339 miles, S=  151 feet/mile, Kb= .03
1249          KM
1250          BA   0.028
1251          LG    0.09    0.17    6.80    0.12   15.00
1252          UC   0.142   0.138
1253          UA       0       5      16      30      65      77      84      90      94      97
1254          UA     100
              *

1255          KK   C590L
1256          KM      Hydrograph combine 588590 + 210E at C590 left branch
1257          HC       2
              *
              * *
              * * C590L is the total flow in Longmont Wash Left Branch upstream of the
              * * confluence with Longmont Wash
              * *
              * * Start Longmont Wash
              * *
              *

1258          KK    210F
1259          KM   Sub-Basin   210F
1260          KM
1261          KM      The Clark Unit Hydrograph is used for this basin.
1262          KM          The Urban time-area relation is used for this basin.
1263          KM
1264          KM      Time of Concentration for this sub-basin is based on the following:
1265          KM          An rainfall areal reduction factor of 1.000
1266          KM
1267          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1268          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1269          KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .02 .02 .02 .02 .02 .02
1270          KM
1271          KM          L=   0.668 miles, S=  349 feet/mile, Kb= .03
1272          KM
1273          BA   0.093
1274          LG    0.09    0.25    4.40    0.34   49.44
1275          UC   0.158   0.134
1276          UA       0       5      16      30      65      77      84      90      94      97
1277          UA     100
              *

1278          KK  589590
1279          KM      Normal depth channel route from C589 to C590
1280          KM      Source:  HEC-2 Cross Section: LO 0.813
1281          RS       2    FLOW      -1
1282          RC   0.065   0.050   0.060  1751.0  0.0423
1283          RX  9957.0  9963.5  9984.5  9996.1 10008.8 10017.4 10040.1 10060.8
1                                          HEC-1 INPUT                                          PAGE 31

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

1284          RY  1843.8  1842.9  1837.0  1831.2  1830.6  1836.1  1838.3  1842.1
              *

1285          KK    210G
1286          KM   Sub-Basin   210G
1287          KM
1288          KM      The Clark Unit Hydrograph is used for this basin.
1289          KM          The Urban time-area relation is used for this basin.
1290          KM
1291          KM      Time of Concentration for this sub-basin is based on the following:
1292          KM          An rainfall areal reduction factor of 1.000
1293          KM
1294          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1295          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1296          KM   .28 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .01 .01 .01 .01 .01 .01
1297          KM
```

```
1298        KM          L=   0.969 miles, S=  333 feet/mile, Kb= .03
1299        KM
1300        BA   0.162
1301        LG    0.09    0.25    5.30    0.22   39.22
1302        UC   0.192   0.163
1303        UA       0       5      16      30      65      77      84      90      94      97
1304        UA     100
            *

1305        KK   C590R
1306        KM      Hydrograph combine 589590 + 210G at C590 right branch
1307        HC       2
            *
            * * NOTE: 590593 is too short to route
            * *
            * * C590R is the total flow in Longmont Wash upstream of the confluence
            * * with Longmont Wash Left Branch
            * *
            *

1308        KK    C590
1309        KM      Hydrograph combine C590L + C590R at C590
1310        HC       2
            *
            * * C590 is the total flow in Longmont Wash upstream of the confluence
            * * Longmont Wash Right Branch
            * *
            * * Start Longmont Wash Right Branch
            * *
            *

1311        KK    210H
1312        KM   Sub-Basin   210H
1313        KM
1314        KM      The Clark Unit Hydrograph is used for this basin.
1315        KM          The Urban time-area relation is used for this basin.
1316        KM
1317        KM      Time of Concentration for this sub-basin is based on the following:
1318        KM          An rainfall areal reduction factor of 1.000
```



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

1319        KM
1320        KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1321        KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1322        KM   .28 .28 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .01 .01 .01 .01 .01 .01
1323        KM
1324        KM          L=   0.565 miles, S=  340 feet/mile, Kb= .03
1325        KM
1326        BA   0.070
1327        LG    0.09    0.23    6.20    0.16   21.74
1328        UC   0.146   0.126
1329        UA       0       5      16      30      65      77      84      90      94      97
1330        UA     100
            *

1331        KK  592593
1332        KM      Normal depth channel route from C592 to C593
1333        KM      Source:  HEC-2 Cross Section: LO-RB1 0.027
1334        RS       2    FLOW      -1
1335        RC   0.065   0.050   0.060  2062.0  0.0412
1336        RX  9920.6  9984.0  9984.7  9996.1 10003.9 10025.4 10041.1 10057.9
1337        RY  1820.0  1804.5  1801.2  1797.3  1797.3  1808.5  1818.3  1820.1
            *
            * *
            * * 592593 is the total flow in Longmont Wash Right Branch upstream
            * * of the confluence with Longmont Wash
            * *
            *

1338        KK    C593
1339        KM      Hydrograph combine C590 + C593R at C593
1340        HC       2
            *
            * *
            * * C593 is the total flow in Longmont Wash below the confluence with
            * * Longmont Wash Right Branch
            * *
            *

1341        KK  593594
1342        KM      Normal depth channel route from C593 to C594
1343        KM      Source:  HEC-2 Cross Section: LO0.413
1344        RS       1    FLOW      -1
1345        RC   0.065   0.050   0.060   988.0  0.0202
1346        RX  9937.2  9958.5  9981.7  9992.8 10007.7 10024.4 10041.9 10067.8
1347        RY  1783.6  1773.5  1773.9  1771.3  1771.2  1774.5  1778.7  1788.7
            *
```

```
1348          KK    210I
1349          KM   Sub-Basin   210I
1350          KM
1351          KM      The Clark Unit Hydrograph is used for this basin.
1352          KM          The Urban time-area relation is used for this basin.
1353          KM
1354          KM      Time of Concentration for this sub-basin is based on the following:
1355          KM          An rainfall areal reduction factor of 1.000
1                                          HEC-1 INPUT                                          PAGE 33

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

1356          KM
1357          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1358          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1359          KM   .29 .29 .28 .28 .28 .28 .04 .04 .04 .04 .04 .04 .02 .02 .02 .02 .02 .02
1360          KM
1361          KM          L=   0.634 miles, S=  250 feet/mile, Kb= .03
1362          KM
1363          BA   0.049
1364          LG    0.09    0.15    7.60    0.09   15.00
1365          UC   0.167   0.196
1366          UA       0       5      16      30      65      77      84      90      94      97
1367          UA     100
              *

1368          KK    C594
1369          KM      Hydrograph combine 593594 + 210I at C594
1370          HC       2
              *

1371          KK  594595
1372          KM      Normal depth channel route from C594 to C595
1373          KM      Source:  HEC-2 Cross Section: LO 0.184
1374          RS       5    FLOW      -1
1375          RC   0.065   0.050   0.060  2093.0  0.0201
1376          RX  9814.0  9836.5  9878.5  9988.2  9994.1 10010.9 10030.4 10030.5
1377          RY  1769.3  1766.6  1752.8  1750.6  1747.9  1749.2  1770.5  1770.6
              *

1378          KK    210J
1379          KM   Sub-Basin   210J
1380          KM
1381          KM      The Clark Unit Hydrograph is used for this basin.
1382          KM          The Urban time-area relation is used for this basin.
1383          KM
1384          KM      Time of Concentration for this sub-basin is based on the following:
1385          KM          An rainfall areal reduction factor of 1.000
1386          KM
1387          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1388          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1389          KM   .28 .28 .28 .28 .27 .27 .03 .03 .03 .03 .03 .03 .01 .01 .01 .01 .01 .01
1390          KM
1391          KM          L=   0.684 miles, S=  187 feet/mile, Kb= .03
1392          KM
1393          BA   0.103
1394          LG    0.09    0.19    6.60    0.13   15.00
1395          UC   0.192   0.159
1396          UA       0       5      16      30      65      77      84      90      94      97
1397          UA     100
              *
1                                          HEC-1 INPUT                                          PAGE 34

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

1398          KK   C595R
1399          KM      Hydrograph combine 594595 + 210J at C595
1400          HC       2
              *
              * *
              * * C595R is the total flow in Longmont Wash upstream of the confluence
              * * with Bristol Wash
              * *
              *

1401          KK    C595
1402          KM      Hydrograph combine C595L + C595R at C595
1403          HC       2
              *
              * *
              * * C595 is the total flow in Bristol Wash just downstream of the
              * * confluence with Longmont Wash
              * *
              *

1404          KK  595596
1405          KM      Normal depth channel route from C595 to C596
```

```
1406        KM      Source:  HEC-2 Cross Section: BR0.290
1407        RS       4    FLOW      -1
1408        RC   0.055   0.045   0.055  1095.0  0.0110
1409        RX  9886.8  9904.8  9948.0 10000.0 10032.4 10081.5 10107.3 10130.4
1410        RY  1727.2  1724.1  1725.9  1720.2  1725.6  1725.3  1721.3  1731.4
            *

1411        KK    210K
1412        KM   Sub-Basin   210K
1413        KM
1414        KM      The Clark Unit Hydrograph is used for this basin.
1415        KM          The Urban time-area relation is used for this basin.
1416        KM
1417        KM      Time of Concentration for this sub-basin is based on the following:
1418        KM          An rainfall areal reduction factor of 1.000
1419        KM
1420        KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1421        KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1422        KM   .28 .28 .28 .28 .27 .27 .03 .03 .03 .03 .03 .03 .01 .01 .01 .01 .01 .01
1423        KM
1424        KM          L=   0.425 miles, S=  207 feet/mile, Kb= .03
1425        KM
1426        BA   0.077
1427        LG    0.09    0.19    6.60    0.13   15.00
1428        UC   0.146   0.095
1429        UA       0       5      16      30      65      77      84      90      94      97
1430        UA     100
            *
```



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

1431        KK    C596
1432        KM      Hydrograph combine 595596 + 210K at C596
1433        HC       2
            *
            * *
            * * C596 is the total flow in Bristol Wash at Golden Eagle Blvd.
            * * upstream of DAM 4
            * *
            * * Leave Basin 210 temporarily and move to Basin 209
            * *
            * * Start Cloudburst Wash
            *

1434        KK    209A
1435        KM   Sub-Basin   209A
1436        KM
1437        KM      The Clark Unit Hydrograph is used for this basin.
1438        KM          The HEC-1 time-area relation is used for this basin.
1439        KM
1440        KM      Time of Concentration for this sub-basin is based on the following:
1441        KM          An rainfall areal reduction factor of 1.000
1442        KM
1443        KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1444        KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1445        KM   .26 .26 .26 .26 .25 .25 .02 .02 .02 .02 .02 .02 .01 .01 .01 .01 .01 .01
1446        KM
1447        KM          L=   1.028 miles, S=  367 feet/mile, Kb= .08
1448        KM
1449        BA   0.368
1450        LG    0.18    0.31    4.35    0.38   41.41
1451        UC   0.325   0.192
            *

1452        KK  579580
1453        KM      Normal depth channel route from C579 to C580
1454        KM      Source:  100 Scale 4' CI Mapping
1455        RS       1    FLOW      -1
1456        RC   0.050   0.045   0.050  1751.0  0.0600
1457        RX  1000.0  1010.0  1025.0  1030.0  1035.0  1040.0  1045.0  1048.0
1458        RY  2336.0  2332.0  2328.0  2327.5  2327.5  2328.0  2332.0  2336.0
            *

1459        KK    209C
1460        KM   Sub-Basin   209C
1461        KM
1462        KM      The Clark Unit Hydrograph is used for this basin.
1463        KM          The Urban time-area relation is used for this basin.
1464        KM
1465        KM      Time of Concentration for this sub-basin is based on the following:
1466        KM          An rainfall areal reduction factor of 1.000
1467        KM
1468        KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1469        KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1470        KM   .27 .27 .27 .27 .26 .26 .02 .02 .02 .02 .02 .02 .02 .02 .02 .02 .02 .02
```

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

1471          KM
1472          KM          L=   0.723 miles, S=  342 feet/mile, Kb= .05
1473          KM
1474          BA   0.064
1475          LG    0.11    0.26    4.35    0.36   48.03
1476          UC   0.213   0.245
1477          UA       0       5      16      30      65      77      84      90      94      97
1478          UA     100
              *

1479          KK   C580R
1480          KM      Hydrograph combine 579580 + 209C at C580 right branch
1481          HC       2
              *

1482          KK    209B
1483          KM   Sub-Basin   209B
1484          KM
1485          KM      The Clark Unit Hydrograph is used for this basin.
1486          KM          The Urban time-area relation is used for this basin.
1487          KM
1488          KM      Time of Concentration for this sub-basin is based on the following:
1489          KM          An rainfall areal reduction factor of 1.000
1490          KM
1491          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1492          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1493          KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .02 .02 .02 .02 .02 .02
1494          KM
1495          KM          L=   0.716 miles, S=  403 feet/mile, Kb= .03
1496          KM
1497          BA   0.083
1498          LG    0.09    0.25    4.35    0.35   50.00
1499          UC   0.154   0.187
1500          UA       0       5      16      30      65      77      84      90      94      97
1501          UA     100
              *

1502          KK    C580
1503          KM      Hydrograph combine 580R + 209B at C580
1504          HC       2
              *

1505          KK  580581
1506          KM      Normal depth channel route from C580 to C581
1507          KM      Source:  100 Scale 4' CI Mapping
1508          RS       3    FLOW      -1
1509          RC   0.050   0.045   0.050  2339.0  0.0440
1510          RX  1000.0  1010.0  1025.0  1030.0  1040.0  1045.0  1070.0  1075.0
1511          RY  2452.0  2448.0  2444.0  2443.5  2443.5  2444.0  2448.0  2452.0
              *
```



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

1512          KK    209D
1513          KM   Sub-Basin   209D
1514          KM
1515          KM      The Clark Unit Hydrograph is used for this basin.
1516          KM          The Urban time-area relation is used for this basin.
1517          KM
1518          KM      Time of Concentration for this sub-basin is based on the following:
1519          KM          An rainfall areal reduction factor of 1.000
1520          KM
1521          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1522          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1523          KM   .27 .27 .27 .27 .26 .26 .02 .02 .02 .02 .02 .02 .02 .02 .02 .02 .02 .02
1524          KM
1525          KM          L=   0.800 miles, S=  354 feet/mile, Kb= .04
1526          KM
1527          BA   0.244
1528          LG    0.11    0.26    4.35    0.36   48.63
1529          UC   0.200   0.118
1530          UA       0       5      16      30      65      77      84      90      94      97
1531          UA     100
              *

1532          KK   C581R
1533          KM      Hydrograph combine 580581 + 209D at C581 right branch
1534          HC       2
              *

1535          KK    209E
1536          KM   Sub-Basin   209E
1537          KM
1538          KM      The Clark Unit Hydrograph is used for this basin.
1539          KM          The Urban time-area relation is used for this basin.
```

```
1540          KM
1541          KM      Time of Concentration for this sub-basin is based on the following:
1542          KM          An rainfall areal reduction factor of 1.000
1543          KM
1544          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1545          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1546          KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .02 .02 .02 .02 .02 .02
1547          KM
1548          KM          L=   1.018 miles, S=  341 feet/mile, Kb= .03
1549          KM
1550          BA   0.149
1551          LG    0.09    0.25    4.35    0.35   50.00
1552          UC   0.196   0.182
1553          UA       0       5      16      30      65      77      84      90      94      97
1554          UA     100
              *
1                                          HEC-1 INPUT                                          PAGE 38

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

1555          KK    C581
1556          KM      Hydrograph combine 581R + 209E at C581
1557          HC       2
              *

1558          KK  581582
1559          KM      Normal depth channel route from C581 to C582
1560          KM      Source:  100 Scale 4' CI Mapping
1561          RS       3    FLOW     -1
1562          RC   0.050   0.045   0.050  4012.0  0.0459
1563          RX  1000.0  1010.0  1025.0  1030.0  1035.0  1040.0  1050.0  1065.0
1564          RY  2100.0  2096.0  2092.0  2091.5  2091.5  2092.0  2096.0  2100.0
              *

1565          KK    209F
1566          KM   Sub-Basin   209F
1567          KM
1568          KM      The Clark Unit Hydrograph is used for this basin.
1569          KM          The HEC-1 time-area relation is used for this basin.
1570          KM
1571          KM      Time of Concentration for this sub-basin is based on the following:
1572          KM          An rainfall areal reduction factor of 1.000
1573          KM
1574          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1575          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1576          KM   .26 .26 .26 .26 .26 .25 .02 .02 .02 .02 .02 .02 .01 .01 .01 .01 .01 .01
1577          KM
1578          KM          L=   1.191 miles, S=  332 feet/mile, Kb= .09
1579          KM
1580          BA   0.226
1581          LG    0.18    0.31    4.50    0.36   40.21
1582          UC   0.383   0.343
              *

1583          KK   C582R
1584          KM      Hydrograph combine 581582 + 209F at C582 right branch
1585          HC       2
              *

1586          KK    209G
1587          KM   Sub-Basin   209G
1588          KM
1589          KM      The Clark Unit Hydrograph is used for this basin.
1590          KM          The Urban time-area relation is used for this basin.
1591          KM
1592          KM      Time of Concentration for this sub-basin is based on the following:
1593          KM          An rainfall areal reduction factor of 1.000
1594          KM
1595          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1596          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1597          KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .02 .02 .02 .02 .02 .02
1598          KM
1599          KM          L=   1.050 miles, S=  306 feet/mile, Kb= .03
1600          KM
1                                          HEC-1 INPUT                                          PAGE 39

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

1601          BA   0.204
1602          LG    0.09    0.25    4.35    0.35   49.93
1603          UC   0.204   0.163
1604          UA       0       5      16      30      65      77      84      90      94      97
1605          UA     100
              *

1606          KK    C582
1607          KM      Hydrograph combine C582R + 209G at C582
1608          HC       2
```

```
                 *

1609             KK  582583
1610             KM      Normal depth channel route from C582 to C583
1611             KM      Source:  100 Scale 4' CI Mapping.
1612             RS       2    FLOW      -1
1613             RC   0.060   0.050   0.060  1725.0  0.0232
1614             RX   960.0  1020.0  1035.0  1040.0  1050.0  1055.0  1065.0  1073.0
1615             RY  2024.0  2018.0  2016.0  2015.5  2015.5  2016.0  2020.0  2024.0
                 *

1616             KK    209H
1617             KM   Sub-Basin   209H
1618             KM
1619             KM      The Clark Unit Hydrograph is used for this basin.
1620             KM          The Urban time-area relation is used for this basin.
1621             KM
1622             KM      Time of Concentration for this sub-basin is based on the following:
1623             KM          An rainfall areal reduction factor of 1.000
1624             KM
1625             KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1626             KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1627             KM   .27 .26 .26 .26 .26 .26 .02 .02 .02 .02 .02 .02 .01 .01 .01 .01 .01 .01
1628             KM
1629             KM          L=   0.542 miles, S=  343 feet/mile, Kb= .07
1630             KM
1631             BA   0.083
1632             LG    0.15    0.31    5.60    0.22   26.57
1633             UC   0.221   0.175
1634             UA       0       5      16      30      65      77      84      90      94      97
1635             UA     100
                 *

1636             KK    C583
1637             KM      Hydrograph combine 582583 + 209H at C583
1638             HC       2
                 *

1639             KK  583584
1640             KM      Normal depth channel route from C583 to C584
1641             KM      Source:  HEC-2 Cross Section: CL 1.664
1642             RS       4    FLOW      -1
1643             RC   0.055   0.070   0.055  3107.0  0.0356
1644             RX  9859.8  9910.3  9933.5  9995.6 10021.7 10051.0 10083.0 10127.8
1645             RY  1948.3  1944.2  1943.7  1930.9  1932.4  1941.6  1937.3  1945.2
                 *
```



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

1646             KK    209I
1647             KM   Sub-Basin   209I
1648             KM
1649             KM      The Clark Unit Hydrograph is used for this basin.
1650             KM          The Urban time-area relation is used for this basin.
1651             KM
1652             KM      Time of Concentration for this sub-basin is based on the following:
1653             KM          An rainfall areal reduction factor of 1.000
1654             KM
1655             KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1656             KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1657             KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .02 .02 .02 .01 .01 .01 .01 .01 .01
1658             KM
1659             KM          L=   0.691 miles, S=  347 feet/mile, Kb= .04
1660             KM
1661             BA   0.182
1662             LG    0.10    0.27    6.00    0.17   17.98
1663             UC   0.183   0.110
1664             UA       0       5      16      30      65      77      84      90      94      97
1665             UA     100
                 *

1666             KK   C584I
1667             KM      Hydrograph combine 583584 + 209I at C584I
1668             HC       2
                 *
                 * *
                 * * C584I is the total flow in Cloudburst Wash upstream of Dam 7
                 * *
                 *

1669             KK   C584O
1670             KM      Reservoir route at C584 (Dam 7).
1671             RS       1    ELEV  1884.8
1672             SV    0.00   14.55   37.17   57.52   86.65   94.00   97.00  101.00  104.90  109.00
1673             SV  113.00  118.00  122.00  126.25  131.00  133.00  136.00  139.00
1674             SE  1884.8  1908.0  1916.0  1920.0  1924.0  1924.8  1925.2  1925.6  1926.0  1926.4
1675             SE  1926.8  1927.2  1927.6  1928.0  1928.4  1928.6  1928.8  1929.0
```

```
1676        SQ       0     135     223     285     326     341     355     358     385     493
1677        SQ     704    1007    1394    1852    2374    2956    3596    3937    4292    4661
1678        SE  1884.8  1892.0  1900.0  1908.0  1916.0  1920.0  1924.0  1924.8  1925.2  1925.6
1679        SE  1926.0  1926.4  1926.8  1927.2  1927.6  1928.0  1928.4  1928.6  1928.8  1929.0
1680        RL                   0.15
            *
            * *
            * * End Basin 209.  Rejoin Basin 210
            * *
            *
```



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

1681        KK  584597
1682        KM      Normal depth channel route from C584 to C597
1683        KM      Source:  HEC-2 Cross Section: CL 1.032
1684        RS      10    FLOW      -1
1685        RC   0.065   0.050   0.065  3704.0  0.0261
1686        RX  9902.1  9923.0  9938.7  9984.6 10049.3 10056.0 10091.7 10120.0
1687        RY  1839.1  1830.1  1826.6  1824.1  1824.9  1826.7  1828.5  1838.8
            *

1688        KK    210L
1689        KM   Sub-Basin   210L
1690        KM
1691        KM      The Clark Unit Hydrograph is used for this basin.
1692        KM          The Urban time-area relation is used for this basin.
1693        KM
1694        KM      Time of Concentration for this sub-basin is based on the following:
1695        KM          An rainfall areal reduction factor of 1.000
1696        KM
1697        KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1698        KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1699        KM   .27 .26 .26 .26 .26 .26 .02 .02 .02 .02 .02 .02 .01 .01 .01 .01 .01 .01
1700        KM
1701        KM          L=   0.820 miles, S=  251 feet/mile, Kb= .03
1702        KM
1703        BA   0.137
1704        LG    0.09    0.25    5.20    0.23   15.90
1705        UC   0.192   0.156
1706        UA       0       5      16      30      65      77      84      90      94      97
1707        UA     100
            *

1708        KK    C597
1709        KM      Hydrograph combine 584597 + 210L at C597
1710        HC       2
            *

1711        KK  597598
1712        KM      Normal depth channel route from C597 to C598
1713        KM      Source:  HEC-2 Cross Section: CL 0.328
1714        RS       6    FLOW      -1
1715        RC   0.065   0.050   0.065  2822.0  0.0252
1716        RX  9961.0  9961.9  9969.1  9986.3 10018.5 10082.6 10155.2 10278.8
1717        RY  1740.2  1740.2  1738.1  1731.6  1732.3  1737.1  1740.0  1740.8
            *

1718        KK    210M
1719        KM   Sub-Basin   210M
1720        KM
1721        KM      The Clark Unit Hydrograph is used for this basin.
1722        KM          The Urban time-area relation is used for this basin.
1723        KM
1724        KM      Time of Concentration for this sub-basin is based on the following:
1725        KM          An rainfall areal reduction factor of 1.000
1726        KM
```



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

1727        KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1728        KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1729        KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .02 .01 .01 .01 .01 .01 .01
1730        KM
1731        KM          L=   1.022 miles, S=  232 feet/mile, Kb= .03
1732        KM
1733        BA   0.162
1734        LG    0.09    0.25    5.80    0.17   15.02
1735        UC   0.221   0.198
1736        UA       0       5      16      30      65      77      84      90      94      97
1737        UA     100
            *

1738        KK    C598
1739        KM      Hydrograph combine 597598 + 210M at C598
1740        HC       2
```

```
                    *
                    * *
                    * * C598 is the total flow in Cloudburst Wash at Golden Eagle Blvd.
                    * * upstream of DAM 4
                    * *
                    *

1741                KK    210N
1742                KM   Sub-Basin   210N
1743                KM
1744                KM      The Clark Unit Hydrograph is used for this basin.
1745                KM          The Urban time-area relation is used for this basin.
1746                KM
1747                KM      Time of Concentration for this sub-basin is based on the following:
1748                KM          An rainfall areal reduction factor of 1.000
1749                KM
1750                KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1751                KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1752                KM   .25 .25 .25 .24 .24 .24 .01 .01 .01 .01 .01 .01 .01 .01 .01 .01 .01 .01
1753                KM
1754                KM          L=   0.309 miles, S=  178 feet/mile, Kb= .03
1755                KM
1756                BA   0.049
1757                LG    0.09    0.25    4.10    0.40   16.38
1758                UC   0.138   0.090
1759                UA      0       5      16      30      65      77      84      90      94      97
1760                UA    100
                    *

1761                KK   C599I
1762                KM      Hydrograph combine C585 + C596 + C598 + 210N at C599I
1763                HC       4
                    *
                    * *
                    * * C599I is the total flow in Ashbrook Wash upstream of DAM 4
                    * *
                    *
1                                                HEC-1 INPUT                                          PAGE 43

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


1764                KK   C599O
1765                KM      Reservoir route at C599 (Dam 4).
1766                RS       1    ELEV  1694.7
1767                SV    0.00   16.85   31.66   52.71   80.85   95.00   98.00  102.00  105.00  109.00
1768                SV  113.00  116.14  120.00  124.00  128.00  136.00  139.00  144.00  148.00  152.00
1769                SE  1694.7  1708.0  1710.0  1712.0  1714.0  1714.8  1715.0  1715.2  1715.4  1715.6
1770                SE  1715.8  1716.0  1716.2  1716.4  1716.6  1717.0  1717.2  1717.4  1717.6  1717.8
1771                SQ       0      38     214     312     384     443     497     543     587     628
1772                SQ     642     754     957    1262    1665    2182    2483    2811    3164    3540
1773                SE  1694.7  1696.0  1700.0  1702.0  1704.0  1706.0  1708.0  1710.0  1712.0  1714.0
1774                SE  1714.8  1715.4  1715.8  1716.2  1716.6  1717.0  1717.2  1717.4  1717.6  1717.8
1775                RL                   0.97
1776                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         *
*                                   *                                                  *      DAVIS, CALIFORNIA 95616      *
*  RUN DATE  10/16/96  TIME  10:17:43 *                                                *          (916) 551-1748           *
*                                   *                                                  *                                   *
*************************************                                                  *************************************


                         FOUNTAIN HILLS ADMP - Project No. 63
                         Future Condition Model                          File:  MODEL-24.IH1
                         100-Year ,24-Hour Storm, Clark Unit Hydrograph  Date:  03/08/96 CCC

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

     IT          HYDROGRAPH TIME DATA
                       NMIN          1  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME       0000  STARTING TIME
                         NQ       1800  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2    0  ENDING DATE
                     NDTIME       0559  ENDING TIME
                      ICENT         19  CENTURY MARK

                 COMPUTATION INTERVAL    0.02 HOURS
                      TOTAL TIME BASE   29.98 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

7 JD        INDEX STORM NO. 1
                STRM        4.20  PRECIPITATION DEPTH
                TRDA        0.01  TRANSPOSITION DRAINAGE AREA

8 PI          PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
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                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
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                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
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                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
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                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
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                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
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                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
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0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

18 JD INDEX STORM NO. 2

STRM 4.12 PRECIPITATION DEPTH

TRDA 5.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

19 JD INDEX STORM NO. 3

STRM 3.99 PRECIPITATION DEPTH

TRDA 10.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

20 JD INDEX STORM NO. 4

STRM 3.71 PRECIPITATION DEPTH

TRDA 50.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

21 JD INDEX STORM NO. 5
STRM 3.62 PRECIPITATION DEPTH
TRDA 80.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
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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	207A	254.	12.30	46.	14.	11.	0.26		
+	HYDROGRAPH AT	207B	202.	12.30	38.	12.	9.	0.21		
+	2 COMBINED AT	C550	455.	12.30	84.	26.	21.	0.46		
+	ROUTED TO	550552	450.	12.37	84.	26.	21.	0.46		
+	HYDROGRAPH AT	207C	197.	12.22	27.	8.	6.	0.17		
+	2 COMBINED AT	C552L	617.	12.32	111.	33.	27.	0.64		
+	HYDROGRAPH AT	207D	255.	12.12	40.	13.	10.	0.20		
+	ROUTED TO	551552	252.	12.20	40.	13.	10.	0.20		
+	HYDROGRAPH AT	207E	178.	12.12	33.	11.	8.	0.16		
+	2 COMBINED AT	C552R	420.	12.17	73.	23.	19.	0.35		

+	2 COMBINED AT	C552	1001.	12.27	183.	56.	45.	0.99
+	ROUTED TO	552553	998.	12.30	183.	56.	45.	0.99
+	HYDROGRAPH AT	207F	153.	12.13	25.	8.	6.	0.13
+	2 COMBINED AT	C553	1127.	12.28	208.	64.	51.	1.12
+	ROUTED TO	553556	1121.	12.32	208.	64.	51.	1.12
+	HYDROGRAPH AT	207G	190.	12.28	36.	10.	8.	0.24
+	2 COMBINED AT	C556L	1309.	12.32	244.	73.	59.	1.35
+	HYDROGRAPH AT	207H	181.	12.07	27.	9.	7.	0.12
+	ROUTED TO	554555	178.	12.12	27.	9.	7.	0.12
+	HYDROGRAPH AT	207I	120.	12.03	16.	5.	4.	0.07
+	2 COMBINED AT	C555	289.	12.07	43.	14.	11.	0.20
+	ROUTED TO	555556	282.	12.18	43.	14.	11.	0.20
+	HYDROGRAPH AT	207J	154.	12.03	21.	7.	5.	0.09
+	2 COMBINED AT	C556R	404.	12.08	64.	20.	16.	0.29
+	2 COMBINED AT	C556	1626.	12.27	307.	94.	75.	1.64
+	ROUTED TO	556557	1619.	12.32	307.	94.	75.	1.64
+	HYDROGRAPH AT	207K	209.	12.05	28.	9.	7.	0.13
+	2 COMBINED AT	C557R	1720.	12.30	334.	102.	82.	1.77
+	HYDROGRAPH AT	207L	136.	12.03	17.	5.	4.	0.08
+	2 COMBINED AT	C557	1780.	12.28	351.	107.	86.	1.85
+	ROUTED TO	557558	1770.	12.33	351.	107.	86.	1.85
+	HYDROGRAPH AT	207M	205.	12.02	23.	7.	5.	0.12
+	2 COMBINED AT	C558	1821.	12.33	373.	113.	91.	1.97
+	ROUTED TO	558560	1813.	12.37	373.	113.	91.	1.97
+	HYDROGRAPH AT	207O	227.	12.02	25.	7.	6.	0.13
+	2 COMBINED AT	C560R	1857.	12.37	397.	120.	97.	2.10
+	HYDROGRAPH AT	207N	87.	12.02	10.	3.	3.	0.05
+	ROUTED TO	559560	85.	12.08	10.	3.	3.	0.05
+	2 COMBINED AT	C560I	1892.	12.35	407.	124.	99.	2.15
+	ROUTED TO	C560O	283.	13.78	263.	123.	99.	2.15

+	ROUTED TO 560585	283.	13.88	263.	123.	99.	2.15
+	HYDROGRAPH AT 210A	213.	12.02	22.	6.	5.	0.12
+	2 COMBINED AT C585	339.	12.03	270.	129.	104.	2.27
+	HYDROGRAPH AT 208A	253.	12.00	31.	10.	8.	0.14
+	ROUTED TO 561563	251.	12.03	31.	10.	8.	0.14
+	HYDROGRAPH AT 208B	46.	12.02	6.	2.	2.	0.03
+	2 COMBINED AT C563R	297.	12.02	37.	12.	10.	0.17
+	HYDROGRAPH AT 208C	85.	12.10	13.	4.	3.	0.07
+	ROUTED TO 562563	83.	12.18	13.	4.	3.	0.07
+	HYDROGRAPH AT 208D	126.	12.02	17.	5.	4.	0.08
+	2 COMBINED AT C563L	197.	12.05	30.	10.	8.	0.14
+	2 COMBINED AT C563	491.	12.03	67.	22.	17.	0.31
+	ROUTED TO 563564	483.	12.08	67.	22.	17.	0.31
+	HYDROGRAPH AT 208E	107.	12.02	14.	5.	4.	0.06
+	2 COMBINED AT C564R	579.	12.07	81.	26.	21.	0.37
+	HYDROGRAPH AT 208F	122.	12.02	16.	5.	4.	0.07
+	2 COMBINED AT C564	696.	12.05	97.	31.	25.	0.44
+	ROUTED TO 564565	681.	12.13	96.	31.	25.	0.44
+	HYDROGRAPH AT 208G	224.	12.03	30.	10.	8.	0.13
+	2 COMBINED AT C565	870.	12.08	126.	41.	33.	0.57
+	ROUTED TO 565568	862.	12.13	126.	41.	33.	0.57
+	HYDROGRAPH AT 208H	59.	12.07	9.	3.	2.	0.04
+	2 COMBINED AT C568L	916.	12.13	135.	43.	35.	0.61
+	HYDROGRAPH AT 208I	204.	12.02	26.	8.	7.	0.12
+	HYDROGRAPH AT 208J	128.	12.03	18.	6.	5.	0.08
+	2 COMBINED AT C566	330.	12.02	44.	14.	11.	0.20
+	ROUTED TO 566567	326.	12.07	44.	14.	11.	0.20
+	HYDROGRAPH AT 208K	88.	12.00	11.	4.	3.	0.05
+	2 COMBINED AT C567L	408.	12.03	56.	18.	14.	0.25
+	HYDROGRAPH AT 208L	191.	12.02	13.	4.	3.	0.06

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1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*              MAY   1991           *
*           VERSION 4.0.1E          *
*                                   *
* RUN DATE  10/14/96  TIME  10:23:39*
*                                   *
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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
X     X  X        X                X
XXXXXXX  XXXX     X        XXXXX   X
X     X  X        X                X
X     X  X        X     X          X
X     X  XXXXXXX   XXXXX          XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

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

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1                                    HEC-1 INPUT                                    PAGE  1

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

            1           ID        FOUNTAIN HILLS ADMP - Project No. 63
            2           ID        Future Condition Model                          File:    M210-6.IH1
            3           ID        100-Year, 6-Hour Storm, Clark Unit Hydrograph   Date:  03/08/96 CCC
            4           ID        Multiple Basin Model for Sub-basin 210
                        *
            5           IT       5                    120
            6           IO       5
            7           IN      15
                        *DIAGRAM
                        *
            8           JD    3.30    0.01
            9           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
           10           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
           11           PC   0.962   0.972   0.983   0.991   1.000
           12           JD    3.28    0.50
           13           JD    3.23    2.80
           14           PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.067   0.076
           15           PC   0.087   0.100   0.120   0.163   0.252   0.451   0.694   0.837   0.900   0.938
           16           PC   0.950   0.963   0.975   0.988   1.000
           17           JD    3.04    16.0
           18           PC   0.000   0.015   0.020   0.030   0.048   0.063   0.076   0.090   0.105   0.119
           19           PC   0.135   0.152   0.175   0.222   0.304   0.472   0.670   0.796   0.868   0.912
           20           PC   0.946   0.960   0.973   0.987   1.000
           21           JD    2.67    90.0
           22           PC   0.000   0.021   0.035   0.051   0.071   0.087   0.105   0.125   0.143   0.160
           23           PC   0.179   0.201   0.232   0.281   0.364   0.500   0.658   0.773   0.841   0.888
           24           PC   0.927   0.945   0.964   0.982   1.000
           25           JD    1.88   500.0
           26           PC   0.000   0.024   0.043   0.059   0.078   0.098   0.119   0.141   0.162   0.186
           27           PC   0.212   0.239   0.271   0.321   0.408   0.515   0.627   0.735   0.814   0.864
           28           PC   0.907   0.930   0.954   0.977   1.000
                        *

           29           KK    210A
           30           KM   Sub-Basin   210A
           31           KM
           32           KM      The Clark Unit Hydrograph is used for this basin.
           33           KM          The Urban time-area relation is used for this basin.
           34           KM
           35           KM      Time of Concentration for this sub-basin is based on the following:
           36           KM          6-Hour Rainfall, Pattern No.  1.00
           37           KM          An rainfall areal reduction factor of 0.998
           38           KM
           39           KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
           40           KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
           41           KM   .46 .46 .46 .15 .12 .11 .05 .05 .04 .03 .03 .02 .00 .00 .00 .00 .00 .00
           42           KM
           43           KM          L=   0.631 miles, S=  233 feet/mile, Kb= .03
           44           KM
           45           BA   0.123
           46           LG    0.09    0.25    5.00    0.24   16.65
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 47          UC   0.142   0.097
 48          UA       0       5      16      30      65      77      84      90      94      97
 49          UA     100
             *
1                                          HEC-1 INPUT                                          PAGE  2

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

 50          KK    210B
 51          KM   Sub-Basin   210B
 52          KM
 53          KM      The Clark Unit Hydrograph is used for this basin.
 54          KM          The Urban time-area relation is used for this basin.
 55          KM
 56          KM      Time of Concentration for this sub-basin is based on the following:
 57          KM          6-Hour Rainfall, Pattern No.  1.00
 58          KM          An rainfall areal reduction factor of 0.999
 59          KM
 60          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 61          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 62          KM   .48 .47 .47 .17 .14 .13 .06 .06 .06 .05 .05 .04 .01 .01 .01 .01 .01 .01
 63          KM
 64          KM          L=   0.930 miles, S=  251 feet/mile, Kb= .03
 65          KM
 66          BA   0.107
 67          LG    0.08    0.25    5.80    0.17   37.15
 68          UC   0.167   0.171
 69          UA       0       5      16      30      65      77      84      90      94      97
 70          UA     100
             *

 71          KK   C5860
 72          KM      Reservoir route at C586.
 73          RS       1    ELEV  1804.4
 74          SV    0.00    0.05    0.36    1.09    2.45    4.45    7.00    9.50    9.60   10.00
 75          SV   10.34   10.70   11.20   11.60   12.10   12.50
 76          SE  1804.4  1806.0  1808.0  1810.0  1812.0  1814.0  1816.0 1817.55  1817.6  1817.8
 77          SE  1818.0  1818.2  1818.4  1818.6  1818.8  1819.0
 78          SQ       0      37     130     219     284     322     353     375     377     393
 79          SQ     432     492     574     680     808     959
             *

 80          KK  586587
 81          KM      Normal depth channel route from C586 to C587
 82          KM      Source:  200 Scale Mapping
 83          RS       3    FLOW      -1
 84          RC   0.040   0.035   0.040  1905.0  0.0313
 85          RX  1000.0  1020.0  1050.0  1055.0  1065.0  1070.0  1130.0  1150.0
 86          RY  1782.0  1780.0  1772.0  1771.0  1771.0  1772.0  1778.0  1782.0
             *

 87          KK  587595
 88          KM      Normal depth channel route from C587 to C595
 89          KM      Source:  HEC-2 Cross Section: BR 0.533
 90          RS       1    FLOW      -1
 91          RC   0.055   0.045   0.055  1039.0  0.0173
 92          RX  9977.2  9980.4  9983.6  9989.9 10009.9 10020.3 10028.8 10037.3
 93          RY  1745.2  1744.0  1742.8  1740.3  1740.3  1742.4  1743.0  1743.6
             *
1                                          HEC-1 INPUT                                          PAGE  3

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

 94          KK    210C
 95          KM   Sub-Basin   210C
 96          KM
 97          KM      The Clark Unit Hydrograph is used for this basin.
 98          KM          The Urban time-area relation is used for this basin.
 99          KM
100          KM      Time of Concentration for this sub-basin is based on the following:
101          KM          6-Hour Rainfall, Pattern No.  1.00
102          KM          An rainfall areal reduction factor of 0.999
103          KM
104          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
105          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
106          KM   .46 .46 .46 .15 .12 .11 .05 .05 .04 .03 .02 .02 .01 .01 .01 .01 .01 .01
107          KM
108          KM          L=   0.637 miles, S=  198 feet/mile, Kb= .03
109          KM
110          BA   0.082
111          LG    0.11    0.26    4.80    0.28   22.29
112          UC   0.150   0.131
113          UA       0       5      16      30      65      77      84      90      94      97
114          UA     100
             *

115          KK   C595L
```

```
116          KM      Hydrograph combine 587595 + 210C at C595 left branch
117          HC       2
             *
             * *
             * * C595L is the total flow in Bristol Wash upstream of the confluence
             * * with Longmont Wash
             * *
             * * Start Longmont Wash Left Branch
             * *
             *

118          KK    210D
119          KM   Sub-Basin   210D
120          KM
121          KM      The Clark Unit Hydrograph is used for this basin.
122          KM          The Urban time-area relation is used for this basin.
123          KM
124          KM      Time of Concentration for this sub-basin is based on the following:
125          KM          6-Hour Rainfall, Pattern No.  1.00
126          KM          An rainfall areal reduction factor of 0.998
127          KM
128          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
129          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
130          KM   .48 .47 .47 .17 .13 .13 .06 .06 .06 .05 .04 .04 .01 .01 .01 .01 .01 .01
131          KM
132          KM          L=   0.832 miles, S=  325 feet/mile, Kb= .03
133          KM
134          BA   0.140
135          LG    0.09    0.25    5.80    0.18   33.66
136          UC   0.146   0.116
1                                          HEC-1 INPUT                                          PAGE  4

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

137          UA       0       5      16      30      65      77      84      90      94      97
138          UA     100
             *

139          KK  588590
140          KM      Normal depth channel route from C588 to C590
141          KM      Source:  HEC-2 Cross Section: LO-LB1 0.128
142          RS       1    FLOW      -1
143          RC   0.065   0.050   0.060  1117.0  0.0340
144          RX  9931.7  9960.6  9984.9 10005.7 10019.1 10033.8 10151.6 10172.9
145          RY  1839.3  1833.5  1825.9  1824.7  1825.9  1828.8  1832.9  1838.0
             *

146          KK    210E
147          KM   Sub-Basin   210E
148          KM
149          KM      The Clark Unit Hydrograph is used for this basin.
150          KM          The Urban time-area relation is used for this basin.
151          KM
152          KM      Time of Concentration for this sub-basin is based on the following:
153          KM          6-Hour Rainfall, Pattern No.  1.00
154          KM          An rainfall areal reduction factor of 1.000
155          KM
156          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
157          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
158          KM   .48 .48 .48 .17 .14 .14 .06 .06 .06 .06 .05 .05 .00 .00 .00 .00 .00 .00
159          KM
160          KM          L=   0.339 miles, S=  151 feet/mile, Kb= .03
161          KM
162          BA   0.028
163          LG    0.09    0.17    6.80    0.12   15.00
164          UC   0.117   0.111
165          UA       0       5      16      30      65      77      84      90      94      97
166          UA     100
             *

167          KK   C590L
168          KM      Hydrograph combine 588590 + 210E at C590 left branch
169          HC       2
             *
             * *
             * * C590L is the total flow in Longmont Wash Left Branch upstream of the
             * * confluence with Longmont Wash
             * *
             * * Start Longmont Wash
             * *
             *

170          KK    210F
171          KM   Sub-Basin   210F
172          KM
173          KM      The Clark Unit Hydrograph is used for this basin.
174          KM          The Urban time-area relation is used for this basin.
175          KM
176          KM      Time of Concentration for this sub-basin is based on the following:
```

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

 177          KM          6-Hour Rainfall, Pattern No.  1.00
 178          KM          An rainfall areal reduction factor of 0.999
 179          KM
 180          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 181          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 182          KM   .47 .47 .47 .16 .13 .13 .06 .06 .05 .04 .04 .04 .01 .01 .01 .01 .01 .01
 183          KM
 184          KM          L=   0.668 miles, S=  349 feet/mile, Kb= .03
 185          KM
 186          BA   0.093
 187          LG    0.09    0.25    4.40    0.34   49.44
 188          UC   0.125   0.103
 189          UA       0       5      16      30      65      77      84      90      94      97
 190          UA     100
              *

 191          KK  589590
 192          KM      Normal depth channel route from C589 to C590
 193          KM      Source:  HEC-2 Cross Section: LO 0.813
 194          RS       2    FLOW      -1
 195          RC   0.065   0.050   0.060  1751.0  0.0423
 196          RX  9957.0  9963.5  9984.5  9996.1 10008.8 10017.4 10040.1 10060.8
 197          RY  1843.8  1842.9  1837.0  1831.2  1830.6  1836.1  1838.3  1842.1
              *

 198          KK    210G
 199          KM   Sub-Basin   210G
 200          KM
 201          KM      The Clark Unit Hydrograph is used for this basin.
 202          KM          The Urban time-area relation is used for this basin.
 203          KM
 204          KM      Time of Concentration for this sub-basin is based on the following:
 205          KM          6-Hour Rainfall, Pattern No.  1.00
 206          KM          An rainfall areal reduction factor of 0.998
 207          KM
 208          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 209          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 210          KM   .48 .47 .47 .17 .13 .13 .06 .06 .05 .05 .04 .04 .01 .01 .01 .01 .01 .01
 211          KM
 212          KM          L=   0.969 miles, S=  333 feet/mile, Kb= .03
 213          KM
 214          BA   0.162
 215          LG    0.09    0.25    5.30    0.22   39.22
 216          UC   0.154   0.128
 217          UA       0       5      16      30      65      77      84      90      94      97
 218          UA     100
              *

 219          KK   C590R
 220          KM      Hydrograph combine 589590 + 210G at C590 right branch
 221          HC       2
              *
              * * NOTE: 590593 is too short to route
              * *
              * * C590R is the total flow in Longmont Wash upstream of the confluence
              * * with Longmont Wash Left Branch
              * *
              *
```



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

 222          KK    C590
 223          KM      Hydrograph combine C590L + C590R at C590
 224          HC       2
              *
              * * C590 is the total flow in Longmont Wash upstream of the confluence
              * * Longmont Wash Right Branch
              * *
              * * Start Longmont Wash Right Branch
              * *
              *

 225          KK    210H
 226          KM   Sub-Basin   210H
 227          KM
 228          KM      The Clark Unit Hydrograph is used for this basin.
 229          KM          The Urban time-area relation is used for this basin.
 230          KM
 231          KM      Time of Concentration for this sub-basin is based on the following:
 232          KM          6-Hour Rainfall, Pattern No.  1.00
 233          KM          An rainfall areal reduction factor of 0.999
 234          KM
 235          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
```

```
236          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
237          KM   .47 .47 .47 .16 .13 .13 .06 .06 .05 .05 .04 .04 .01 .01 .01 .01 .01 .01
238          KM
239          KM          L=   0.565 miles, S=  340 feet/mile, Kb= .03
240          KM
241          BA   0.070
242          LG    0.09    0.23    6.20    0.16   21.74
243          UC   0.117   0.098
244          UA       0       5      16      30      65      77      84      90      94      97
245          UA     100
             *

246          KK  592593
247          KM      Normal depth channel route from C592 to C593
248          KM      Source:  HEC-2 Cross Section: LO-RB1 0.027
249          RS       3    FLOW      -1
250          RC   0.065   0.050   0.060  2062.0  0.0412
251          RX  9920.6  9964.0  9984.7  9996.1 10003.9 10025.4 10041.1 10057.9
252          RY  1820.0  1804.5  1801.2  1797.3  1797.3  1808.5  1818.3  1820.1
             *
             * *
             * * 592593 is the total flow in Longmont Wash Right Branch upstream
             * * of the confluence with Longmont Wash
             * *
             *

253          KK    C593
254          KM      Hydrograph combine C590 + C593R at C593
255          HC       2
             *
             * *
             * * C593 is the total flow in Longmont Wash below the confluence with
             * * Longmont Wash Right Branch
             * *
             *
```



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

256          KK  593594
257          KM      Normal depth channel route from C593 to C594
258          KM      Source:  HEC-2 Cross Section: LO0.413
259          RS       2    FLOW      -1
260          RC   0.065   0.050   0.060   988.0  0.0202
261          RX  9937.2  9958.5  9981.7  9992.8 10007.7 10024.4 10041.9 10067.8
262          RY  1783.6  1773.5  1773.9  1771.3  1771.2  1774.5  1778.7  1788.7
             *

263          KK    210I
264          KM   Sub-Basin   210I
265          KM
266          KM      The Clark Unit Hydrograph is used for this basin.
267          KM          The Urban time-area relation is used for this basin.
268          KM
269          KM      Time of Concentration for this sub-basin is based on the following:
270          KM          6-Hour Rainfall, Pattern No.  1.00
271          KM          An rainfall areal reduction factor of 0.999
272          KM
273          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
274          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
275          KM   .49 .48 .48 .18 .15 .14 .07 .07 .06 .06 .06 .06 .01 .01 .01 .00 .00 .00
276          KM
277          KM          L=   0.634 miles, S=  250 feet/mile, Kb= .03
278          KM
279          BA   0.049
280          LG    0.09    0.15    7.60    0.09   15.00
281          UC   0.138   0.158
282          UA       0       5      16      30      65      77      84      90      94      97
283          UA     100
             *

284          KK    C594
285          KM      Hydrograph combine 593594 + 210I at C594
286          HC       2
             *

287          KK  594595
288          KM      Normal depth channel route from C594 to C595
289          KM      Source:  HEC-2 Cross Section: LO 0.184
290          RS       3    FLOW      -1
291          RC   0.065   0.050   0.060  2093.0  0.0201
292          RX  9814.0  9836.5  9878.5  9988.2  9994.1 10010.9 10030.4 10030.5
293          RY  1769.3  1766.6  1752.8  1750.6  1747.9  1749.2  1770.5  1770.6
             *

294          KK    210J
295          KM   Sub-Basin   210J
296          KM
```

```
 297          KM      The Clark Unit Hydrograph is used for this basin.
 298          KM          The Urban time-area relation is used for this basin.
 299          KM
 300          KM      Time of Concentration for this sub-basin is based on the following:
 301          KM          6-Hour Rainfall, Pattern No.  1.00
1                                        HEC-1 INPUT                                          PAGE  8

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

 302          KM          An rainfall areal reduction factor of 0.999
 303          KM
 304          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 305          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 306          KM   .48 .47 .47 .17 .14 .13 .06 .06 .06 .05 .05 .05 .00 .00 .00 .00 .00 .00
 307          KM
 308          KM          L=   0.684 miles, S=  187 feet/mile, Kb= .03
 309          KM
 310          BA   0.103
 311          LG    0.09    0.19    6.60    0.13   15.00
 312          UC   0.154   0.125
 313          UA       0       5      16      30      65      77      84      90      94      97
 314          UA     100
              *

 315          KK   C595R
 316          KM      Hydrograph combine 594595 + 210J at C595
 317          HC       2
              *
              * *
              * * C595R is the total flow in Longmont Wash upstream of the confluence
              * * with Bristol Wash
              * *
              *

 318          KK    C595
 319          KM      Hydrograph combine C595L + C595R at C595
 320          HC       2
              *
              * *
              * * C595 is the total flow in Bristol Wash just downstream of the
              * * confluence with Longmont Wash
              * *
              *

 321          KK  595596
 322          KM      Normal depth channel route from C595 to C596
 323          KM      Source:  HEC-2 Cross Section: BR0.290
 324          RS       4    FLOW      -1
 325          RC   0.055   0.045   0.055  1095.0  0.0110
 326          RX  9886.8  9904.8  9948.0 10000.0 10032.4 10081.5 10107.3 10130.4
 327          RY  1727.2  1724.1  1725.9  1720.2  1725.6  1725.3  1721.3  1731.4
              *

 328          KK    210K
 329          KM   Sub-Basin   210K
 330          KM
 331          KM      The Clark Unit Hydrograph is used for this basin.
 332          KM          The Urban time-area relation is used for this basin.
 333          KM
 334          KM      Time of Concentration for this sub-basin is based on the following:
 335          KM          6-Hour Rainfall, Pattern No.  1.00
 336          KM          An rainfall areal reduction factor of 0.999
 337          KM
 338          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1                                        HEC-1 INPUT                                          PAGE  9

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

 339          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 340          KM   .48 .47 .47 .17 .14 .13 .06 .06 .06 .05 .05 .05 .00 .00 .00 .00 .00 .00
 341          KM
 342          KM          L=   0.425 miles, S=  207 feet/mile, Kb= .03
 343          KM
 344          BA   0.077
 345          LG    0.09    0.19    6.60    0.13   15.00
 346          UC   0.117   0.074
 347          UA       0       5      16      30      65      77      84      90      94      97
 348          UA     100
              *

 349          KK    C596
 350          KM      Hydrograph combine 595596 + 210K at C596
 351          HC       2
              *
              *

 352          KK    210L
 353          KM   Sub-Basin   210L
 354          KM
```

```
355          KM      The Clark Unit Hydrograph is used for this basin.
356          KM          The Urban time-area relation is used for this basin.
357          KM
358          KM      Time of Concentration for this sub-basin is based on the following:
359          KM          6-Hour Rainfall, Pattern No.  1.00
360          KM          An rainfall areal reduction factor of 0.998
361          KM
362          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
363          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
364          KM   .46 .46 .46 .15 .12 .11 .05 .05 .04 .03 .03 .02 .00 .00 .00 .00 .00 .00
365          KM
366          KM          L=   0.820 miles, S=  251 feet/mile, Kb= .03
367          KM
368          BA   0.137
369          LG    0.09    0.25    5.20    0.23   15.90
370          UC   0.158   0.127
371          UA       0       5      16      30      65      77      84      90      94      97
372          UA     100
             *

373          KK  597598
374          KM      Normal depth channel route from C597 to C598
375          KM      Source:  HEC-2 Cross Section: CL 0.328
376          RS       5    FLOW      -1
377          RC   0.065   0.050   0.065  2822.0  0.0252
378          RX  9961.0  9961.9  9969.1  9986.3 10018.5 10082.6 10155.2 10278.8
379          RY  1740.2  1740.2  1738.1  1731.6  1732.3  1737.1  1740.0  1740.8
             *
```



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

380          KK    210M
381          KM   Sub-Basin   210M
382          KM
383          KM      The Clark Unit Hydrograph is used for this basin.
384          KM          The Urban time-area relation is used for this basin.
385          KM
386          KM      Time of Concentration for this sub-basin is based on the following:
387          KM          6-Hour Rainfall, Pattern No.  1.00
388          KM          An rainfall areal reduction factor of 0.998
389          KM
390          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
391          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
392          KM   .47 .47 .46 .16 .13 .12 .05 .05 .05 .04 .04 .03 .00 .00 .00 .00 .00 .00
393          KM
394          KM          L=   1.022 miles, S=  232 feet/mile, Kb= .03
395          KM
396          BA   0.162
397          LG    0.09    0.25    5.80    0.17   15.02
398          UC   0.179   0.157
399          UA       0       5      16      30      65      77      84      90      94      97
400          UA     100
             *

401          KK    C598
402          KM      Hydrograph combine 597598 + 210M at C598
403          HC       2
             *

404          KK    210N
405          KM   Sub-Basin   210N
406          KM
407          KM      The Clark Unit Hydrograph is used for this basin.
408          KM          The Urban time-area relation is used for this basin.
409          KM
410          KM      Time of Concentration for this sub-basin is based on the following:
411          KM          6-Hour Rainfall, Pattern No.  1.00
412          KM          An rainfall areal reduction factor of 0.999
413          KM
414          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
415          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
416          KM   .45 .44 .44 .13 .10 .09 .03 .03 .03 .01 .01 .01 .00 .00 .00 .00 .00 .00
417          KM
418          KM          L=   0.309 miles, S=  178 feet/mile, Kb= .03
419          KM
420          BA   0.049
421          LG    0.09    0.25    4.10    0.40   16.38
422          UC   0.108   0.069
423          UA       0       5      16      30      65      77      84      90      94      97
424          UA     100
             *
```



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

425          KK   C210I
```

```
          426          KM      Hydrograph combine 210A + C596 + C598 + 210N at C210I
          427          HC       4
          428          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
 LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

  29        210A
            .
            .
  50        .       210B
            .          V
            .          V
  71        .      C586O
            .          V
            .          V
  80        .     586587
            .          V
            .          V
  87        .     587595
            .          .
            .          .
  94        .          .       210C
            .          .          .
            .          .          .
 115        .      C595L............
            .          .
            .          .
 118        .          .       210D
            .          .          V
            .          .          V
 139        .          .     588590
            .          .          .
            .          .          .
 146        .          .          .       210E
            .          .          .          .
            .          .          .          .
 167        .          .      C590L............
            .          .          .
            .          .          .
 170        .          .          .       210F
            .          .          .          V
            .          .          .          V
 191        .          .          .     589590
            .          .          .          .
            .          .          .          .
 198        .          .          .          .       210G
            .          .          .          .          .
            .          .          .          .          .
 219        .          .          .     C590R............
            .          .          .          .
            .          .          .          .
 222        .          .      C590............
            .          .          .
            .          .          .
 225        .          .          .       210H
            .          .          .          V
            .          .          .          V
 246        .          .          .     592593
            .          .          .          .
            .          .          .          .
 253        .          .      C593............
            .          .          V
            .          .          V
 256        .          .     593594
            .          .          .
            .          .          .
 263        .          .          .       210I
            .          .          .          .
            .          .          .          .
 284        .          .      C594............
            .          .          V
            .          .          V
 287        .          .     594595
            .          .          .
            .          .          .
 294        .          .          .       210J
            .          .          .          .
            .          .          .          .
 315        .          .      C595R............
            .          .          .
            .          .          .
 318        .      C595............
            .          V
            .          V
 321        .     595596
```

```
                .          .
                .          .
  328           .          .        210K
                .          .          .
                .          .          .
  349           .        C596............
                .          .
                .          .
  352           .          .        210L
                .          .          V
                .          .          V
  373           .          .      597598
                .          .          .
                .          .          .
  380           .          .          .        210M
                .          .          .          .
                .          .          .          .
  401           .          .        C598............
                .          .          .
                .          .          .
  404           .          .          .        210N
                .          .          .          .
                .          .          .          .
  425       C210I...................................
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************                    ****************************************
*                                      *                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *    U.S. ARMY CORPS OF ENGINEERS      *
*              MAY   1991              *                    *    HYDROLOGIC ENGINEERING CENTER     *
*            VERSION 4.0.1E            *                    *          609 SECOND STREET           *
*                                      *                    *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE  10/14/96  TIME  10:23:39  *                    *           (916) 551-1748             *
*                                      *                    *                                      *
****************************************                    ****************************************
```

```
                          FOUNTAIN HILLS ADMP - Project No. 63
                          Future Condition Model                          File:    M210-6.IH1
                          100-Year, 6-Hour Storm, Clark Unit Hydrograph   Date:  03/08/96 CCC
                          Multiple Basin Model for Sub-basin 210

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

    IT          HYDROGRAPH TIME DATA
                       NMIN          5  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME       0000  STARTING TIME
                         NQ        120  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      1    0  ENDING DATE
                     NDTIME       0955  ENDING TIME
                      ICENT         19  CENTURY MARK

                 COMPUTATION INTERVAL    0.08 HOURS
                      TOTAL TIME BASE    9.92 HOURS

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

  8 JD          INDEX STORM NO. 1
                       STRM       3.30  PRECIPITATION DEPTH
                       TRDA       0.01  TRANSPOSITION DRAINAGE AREA

  9 PI            PRECIPITATION PATTERN
                     0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00
                     0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00
                     0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00
                     0.00       0.00       0.00       0.01       0.01       0.01       0.01       0.01       0.01       0.03
                     0.03       0.03       0.05       0.05       0.05       0.15       0.15       0.15       0.03       0.03
                     0.03       0.01       0.01       0.01       0.01       0.01       0.01       0.00       0.00       0.00
                     0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00
                     0.00       0.00

 12 JD          INDEX STORM NO. 2
                       STRM       3.28  PRECIPITATION DEPTH
                       TRDA       0.50  TRANSPOSITION DRAINAGE AREA
```

```
 0 PI          PRECIPITATION PATTERN
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.03
                 0.03      0.03      0.05      0.05      0.05      0.15      0.15      0.15      0.03      0.03
                 0.03      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00

13 JD        INDEX STORM NO. 3
                STRM        3.23  PRECIPITATION DEPTH
                TRDA        2.80  TRANSPOSITION DRAINAGE AREA

14 PI         PRECIPITATION PATTERN
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.03
                 0.03      0.03      0.07      0.07      0.07      0.08      0.08      0.08      0.05      0.05
                 0.05      0.02      0.02      0.02      0.01      0.01      0.01      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00

17 JD        INDEX STORM NO. 4
                STRM        3.04  PRECIPITATION DEPTH
                TRDA       16.00  TRANSPOSITION DRAINAGE AREA

18 PI         PRECIPITATION PATTERN
                 0.01      0.01      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.01
                 0.01      0.01      0.00      0.01      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.01      0.00      0.00      0.00      0.00      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.02      0.03
                 0.03      0.03      0.06      0.06      0.06      0.07      0.07      0.07      0.04      0.04
                 0.04      0.02      0.02      0.02      0.01      0.01      0.01      0.01      0.01      0.01
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00

21 JD        INDEX STORM NO. 5
                STRM        2.67  PRECIPITATION DEPTH
                TRDA       90.00  TRANSPOSITION DRAINAGE AREA

22 PI         PRECIPITATION PATTERN
                 0.01      0.01      0.01      0.00      0.00      0.00      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.02      0.03
                 0.03      0.03      0.05      0.05      0.05      0.05      0.05      0.05      0.04      0.04
                 0.04      0.02      0.02      0.02      0.02      0.02      0.02      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01

25 JD        INDEX STORM NO. 6
                STRM        1.88  PRECIPITATION DEPTH
                TRDA      500.00  TRANSPOSITION DRAINAGE AREA

26 PI         PRECIPITATION PATTERN
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.02      0.03
                 0.03      0.03      0.04      0.04      0.04      0.04      0.04      0.04      0.04      0.04
                 0.04      0.03      0.03      0.03      0.02      0.02      0.02      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01
1
                                    RUNOFF SUMMARY
                              FLOW IN CUBIC FEET PER SECOND
                           TIME IN HOURS,  AREA IN SQUARE MILES

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

        HYDROGRAPH AT
+                          210A      392.   4.00         28.         17.         17.       0.12
        HYDROGRAPH AT
+                          210B      294.   4.00         28.         17.         17.       0.11
        ROUTED TO
+                          C5860     241.   4.17         28.         17.         17.       0.11
        ROUTED TO
+                         586587     242.   4.17         28.         17.         17.       0.11
        ROUTED TO
+                         587595     238.   4.17         28.         17.         17.       0.11
```

+	HYDROGRAPH AT	210C	238.	4.00	19.	11.	11.	0.08
+	2 COMBINED AT	C595L	423.	4.08	47.	28.	28.	0.19
+	HYDROGRAPH AT	210D	439.	4.00	36.	22.	22.	0.14
+	ROUTED TO	588590	410.	4.08	36.	22.	22.	0.14
+	HYDROGRAPH AT	210E	91.	4.00	7.	4.	4.	0.03
+	2 COMBINED AT	C590L	500.	4.00	43.	26.	26.	0.17
+	HYDROGRAPH AT	210F	302.	4.00	25.	15.	15.	0.09
+	ROUTED TO	589590	282.	4.00	25.	15.	15.	0.09
+	HYDROGRAPH AT	210G	491.	4.00	42.	26.	26.	0.16
+	2 COMBINED AT	C590R	772.	4.00	67.	41.	41.	0.25
+	2 COMBINED AT	C590	1271.	4.00	110.	66.	66.	0.42
+	HYDROGRAPH AT	210H	231.	4.00	17.	10.	10.	0.07
+	ROUTED TO	592593	219.	4.08	17.	10.	10.	0.07
+	2 COMBINED AT	C593	1477.	4.00	127.	77.	77.	0.49
+	ROUTED TO	593594	1479.	4.08	127.	77.	77.	0.49
+	HYDROGRAPH AT	210I	144.	4.00	13.	8.	8.	0.05
+	2 COMBINED AT	C594	1577.	4.08	139.	84.	84.	0.54
+	ROUTED TO	594595	1528.	4.08	139.	84.	84.	0.54
+	HYDROGRAPH AT	210J	317.	4.00	25.	15.	15.	0.10
+	2 COMBINED AT	C595R	1721.	4.08	163.	99.	99.	0.64
+	2 COMBINED AT	C595	1978.	4.08	207.	126.	126.	0.83
+	ROUTED TO	595596	1996.	4.17	207.	126.	126.	0.83
+	HYDROGRAPH AT	210K	270.	4.00	19.	11.	11.	0.08
+	2 COMBINED AT	C596	2035.	4.17	225.	136.	136.	0.91
+	HYDROGRAPH AT	210L	402.	4.00	31.	19.	19.	0.14
+	ROUTED TO	597598	369.	4.17	31.	19.	19.	0.14
+	HYDROGRAPH AT	210M	441.	4.00	38.	23.	23.	0.16
+	2 COMBINED AT	C598	785.	4.08	68.	41.	41.	0.30
+	HYDROGRAPH AT	210N	163.	4.00	10.	6.	6.	0.05
+	4 COMBINED AT	C210I	2576.	4.08	320.	194.	194.	1.38

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

```
1*************************************
 *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              MAY   1991           *
 *           VERSION 4.0.1E          *
 *                                   *
 *  RUN DATE  10/14/96  TIME  10:23:20  *
 *                                   *
 *************************************
```

```
*************************************
*                                   *
*    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        FOUNTAIN HILLS ADMP - Project No. 63
             2          ID        Future Condition Model                          File:  M210-24.IH1
             3          ID        100-Year ,24-Hour Storm, Clark Unit Hydrograph  Date: 03/08/96 CCC
             4          ID        Multiple-Basin Model for Sub-basin 210
                        *DIAGRAM
                        *
             5          IT       5                     300
             6          IO       5
             7          IN      15
                        *
                        * Point precipitation values are are based on Hydro-40 DARF.
                        *   0.01    5.00   10.00   50.00   80.00  100.00  200.00
                        *  1.000   0.980   0.949   0.883   0.861   0.850   0.819
                        *
             8          JD    4.20    0.01
                        * The following PC records are a 24-hour SCS Type II rainfall distribution.
             9          PC   0.000   0.002   0.005   0.008   0.011   0.013   0.016   0.019   0.022   0.025
            10          PC   0.028   0.032   0.035   0.038   0.041   0.044   0.048   0.053   0.056   0.060
            11          PC   0.063   0.067   0.071   0.075   0.080   0.084   0.089   0.093   0.098   0.103
            12          PC   0.109   0.114   0.120   0.127   0.133   0.140   0.147   0.155   0.163   0.172
            13          PC   0.181   0.192   0.204   0.220   0.235   0.259   0.283   0.473   0.663   0.699
            14          PC   0.735   0.754   0.772   0.785   0.799   0.810   0.820   0.829   0.838   0.846
            15          PC   0.854   0.861   0.868   0.874   0.880   0.885   0.891   0.900   0.902   0.910
            16          PC   0.912   0.920   0.921   0.926   0.929   0.930   0.937   0.941   0.945   0.950
            17          PC   0.952   0.957   0.959   0.962   0.965   0.970   0.972   0.973   0.978   0.981
            18          PC   0.984   0.987   0.989   0.992   0.995   0.998   1.000
            19          JD    4.12    5.00
            20          JD    3.99   10.00
            21          JD    3.71   50.00
            22          JD    3.62   80.00
                        *

            23          KK    210A
            24          KM   Sub-Basin   210A
            25          KM
            26          KM      The Clark Unit Hydrograph is used for this basin.
            27          KM          The Urban time-area relation is used for this basin.
            28          KM
            29          KM      Time of Concentration for this sub-basin is based on the following:
            30          KM          An rainfall areal reduction factor of 1.000
            31          KM
            32          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
            33          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
            34          KM   .27 .26 .26 .26 .26 .26 .02 .02 .02 .02 .02 .02 .01 .01 .01 .01 .01 .01
            35          KM
            36          KM          L=   0.631 miles, S=  233 feet/mile, Kb= .03
            37          KM
            38          BA   0.123
            39          LG    0.09    0.25    5.00    0.24   16.65
            40          UC   0.175   0.122
            41          UA       0       5      16      30      65      77      84      90      94      97
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  42        UA     100
            *
1                                   HEC-1 INPUT                                          PAGE  2

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

  43        KK    210B
  44        KM   Sub-Basin   210B
  45        KM
  46        KM      The Clark Unit Hydrograph is used for this basin.
  47        KM          The Urban time-area relation is used for this basin.
  48        KM
  49        KM      Time of Concentration for this sub-basin is based on the following:
  50        KM          An rainfall areal reduction factor of 1.000
  51        KM
  52        KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
  53        KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
  54        KM   .28 .28 .28 .28 .27 .27 .03 .03 .03 .03 .03 .03 .01 .01 .01 .01 .01 .01
  55        KM
  56        KM          L=   0.930 miles, S=  251 feet/mile, Kb= .03
  57        KM
  58        BA   0.107
  59        LG    0.08    0.25    5.80    0.17   37.15
  60        UC   0.204   0.214
  61        UA       0       5      16      30      65      77      84      90      94      97
  62        UA     100
            *

  63        KK   C5860
  64        KM      Reservoir route at C586.
  65        RS       1    ELEV  1804.4
  66        SV    0.00    0.05    0.36    1.09    2.45    4.45    7.00    9.50    9.60   10.00
  67        SV   10.34   10.70   11.20   11.60   12.10   12.50
  68        SE  1804.4  1806.0  1808.0  1810.0  1812.0  1814.0  1816.0 1817.55  1817.6  1817.8
  69        SE  1818.0  1818.2  1818.4  1818.6  1818.8  1819.0
  70        SQ       0      37     130     219     284     322     353     375     377     393
  71        SQ     432     492     574     680     808     959
            *

  72        KK  586587
  73        KM      Normal depth channel route from C586 to C587
  74        KM      Source:  200 Scale Mapping
  75        RS       3    FLOW      -1
  76        RC   0.040   0.035   0.040  1905.0  0.0313
  77        RX  1000.0  1020.0  1050.0  1055.0  1065.0  1070.0  1130.0  1150.0
  78        RY  1782.0  1780.0  1772.0  1771.0  1771.0  1772.0  1778.0  1782.0
            *

  79        KK  587595
  80        KM      Normal depth channel route from C587 to C595
  81        KM      Source:  HEC-2 Cross Section: BR 0.533
  82        RS       2    FLOW      -1
  83        RC   0.055   0.045   0.055  1039.0  0.0173
  84        RX  9977.2  9980.4  9983.6  9989.9 10009.9 10020.3 10028.8 10037.3
  85        RY  1745.2  1744.0  1742.8  1740.3  1740.3  1742.4  1743.0  1743.6
            *
1                                   HEC-1 INPUT                                          PAGE  3

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

  86        KK    210C
  87        KM   Sub-Basin   210C
  88        KM
  89        KM      The Clark Unit Hydrograph is used for this basin.
  90        KM          The Urban time-area relation is used for this basin.
  91        KM
  92        KM      Time of Concentration for this sub-basin is based on the following:
  93        KM          An rainfall areal reduction factor of 1.000
  94        KM
  95        KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
  96        KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
  97        KM   .26 .26 .26 .26 .26 .26 .02 .02 .02 .02 .02 .02 .01 .01 .01 .01 .01 .01
  98        KM
  99        KM          L=   0.637 miles, S=  198 feet/mile, Kb= .03
 100        KM
 101        BA   0.082
 102        LG    0.11    0.26    4.80    0.28   22.29
 103        UC   0.183   0.164
 104        UA       0       5      16      30      65      77      84      90      94      97
 105        UA     100
            *

 106        KK   C595L
 107        KM      Hydrograph combine 587595 + 210C at C595 left branch
 108        HC       2
            *
            * *
```

```
                    * * C595L is the total flow in Bristol Wash upstream of the confluence
                    * * with Longmont Wash
                    * *
                    * * Start Longmont Wash Left Branch
                    * *
                    *

 109                KK    210D
 110                KM   Sub-Basin   210D
 111                KM
 112                KM      The Clark Unit Hydrograph is used for this basin.
 113                KM          The Urban time-area relation is used for this basin.
 114                KM
 115                KM      Time of Concentration for this sub-basin is based on the following:
 116                KM          An rainfall areal reduction factor of 1.000
 117                KM
 118                KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 119                KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 120                KM   .28 .28 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .01 .01 .01 .01 .01 .01
 121                KM
 122                KM          L=   0.832 miles, S=  325 feet/mile, Kb= .03
 123                KM
 124                BA   0.140
 125                LG    0.09    0.25    5.80    0.18   33.66
 126                UC   0.179   0.145
 127                UA      0       5      16      30      65      77      84      90      94      97
 128                UA    100
                    *
1                                                HEC-1 INPUT                                          PAGE  4

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

 129                KK  588590
 130                KM      Normal depth channel route from C588 to C590
 131                KM      Source:  HEC-2 Cross Section: LO-LB1 0.128
 132                RS       2    FLOW      -1
 133                RC   0.065   0.050   0.060  1117.0  0.0340
 134                RX  9931.7  9960.6  9984.9 10005.7 10019.1 10033.8 10151.6 10172.9
 135                RY  1839.3  1833.5  1825.9  1824.7  1825.9  1828.8  1832.9  1838.0
                    *

 136                KK    210E
 137                KM   Sub-Basin   210E
 138                KM
 139                KM      The Clark Unit Hydrograph is used for this basin.
 140                KM          The Urban time-area relation is used for this basin.
 141                KM
 142                KM      Time of Concentration for this sub-basin is based on the following:
 143                KM          An rainfall areal reduction factor of 1.000
 144                KM
 145                KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 146                KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 147                KM   .28 .28 .28 .28 .28 .28 .03 .03 .03 .03 .03 .03 .02 .02 .01 .01 .01 .01
 148                KM
 149                KM          L=   0.339 miles, S=  151 feet/mile, Kb= .03
 150                KM
 151                BA   0.028
 152                LG    0.09    0.17    6.80    0.12   15.00
 153                UC   0.142   0.138
 154                UA      0       5      16      30      65      77      84      90      94      97
 155                UA    100
                    *

 156                KK   C590L
 157                KM      Hydrograph combine 588590 + 210E at C590 left branch
 158                HC       2
                    *
                    * *
                    * * C590L is the total flow in Longmont Wash Left Branch upstream of the
                    * * confluence with Longmont Wash
                    * *
                    * * Start Longmont Wash
                    * *
                    *

 159                KK    210F
 160                KM   Sub-Basin   210F
 161                KM
 162                KM      The Clark Unit Hydrograph is used for this basin.
 163                KM          The Urban time-area relation is used for this basin.
 164                KM
 165                KM      Time of Concentration for this sub-basin is based on the following:
 166                KM          An rainfall areal reduction factor of 1.000
 167                KM
 168                KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 169                KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
1                                                HEC-1 INPUT                                          PAGE  5
```

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

 170          KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .02 .02 .02 .02 .02 .02
 171          KM
 172          KM          L=   0.668 miles, S=  349 feet/mile, Kb= .03
 173          KM
 174          BA   0.093
 175          LG    0.09    0.25    4.40    0.34   49.44
 176          UC   0.158   0.134
 177          UA       0       5      16      30      65      77      84      90      94      97
 178          UA     100
              *

 179          KK  589590
 180          KM      Normal depth channel route from C589 to C590
 181          KM      Source:  HEC-2 Cross Section: LO 0.813
 182          RS       2    FLOW      -1
 183          RC   0.065   0.050   0.060  1751.0  0.0423
 184          RX  9957.0  9963.5  9984.5  9996.1 10008.8 10017.4 10040.1 10060.8
 185          RY  1843.8  1842.9  1837.0  1831.2  1830.6  1836.1  1838.3  1842.1
              *

 186          KK    210G
 187          KM   Sub-Basin   210G
 188          KM
 189          KM      The Clark Unit Hydrograph is used for this basin.
 190          KM          The Urban time-area relation is used for this basin.
 191          KM
 192          KM      Time of Concentration for this sub-basin is based on the following:
 193          KM          An rainfall areal reduction factor of 1.000
 194          KM
 195          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 196          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 197          KM   .28 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .01 .01 .01 .01 .01 .01
 198          KM
 199          KM          L=   0.969 miles, S=  333 feet/mile, Kb= .03
 200          KM
 201          BA   0.162
 202          LG    0.09    0.25    5.30    0.22   39.22
 203          UC   0.192   0.163
 204          UA       0       5      16      30      65      77      84      90      94      97
 205          UA     100
              *

 206          KK   C590R
 207          KM      Hydrograph combine 589590 + 210G at C590 right branch
 208          HC       2
              *
              * * NOTE: 590593 is too short to route
              * *
              * * C590R is the total flow in Longmont Wash upstream of the confluence
              * * with Longmont Wash Left Branch
              * *
              *
```

1 HEC-1 INPUT PAGE 6

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

 209          KK    C590
 210          KM      Hydrograph combine C590L + C590R at C590
 211          HC       2
              *
              * * C590 is the total flow in Longmont Wash upstream of the confluence
              * * Longmont Wash Right Branch
              * *
              * * Start Longmont Wash Right Branch
              * *
              *

 212          KK    210H
 213          KM   Sub-Basin   210H
 214          KM
 215          KM      The Clark Unit Hydrograph is used for this basin.
 216          KM          The Urban time-area relation is used for this basin.
 217          KM
 218          KM      Time of Concentration for this sub-basin is based on the following:
 219          KM          An rainfall areal reduction factor of 1.000
 220          KM
 221          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 222          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 223          KM   .28 .28 .27 .27 .27 .27 .03 .03 .03 .03 .03 .03 .01 .01 .01 .01 .01 .01
 224          KM
 225          KM          L=   0.565 miles, S=  340 feet/mile, Kb= .03
 226          KM
 227          BA   0.070
 228          LG    0.09    0.23    6.20    0.16   21.74
 229          UC   0.146   0.126
 230          UA       0       5      16      30      65      77      84      90      94      97
```

```
 231          UA     100
              *

 232          KK  592593
 233          KM      Normal depth channel route from C592 to C593
 234          KM      Source:  HEC-2 Cross Section: LO-RB1 0.027
 235          RS       2    FLOW      -1
 236          RC   0.065   0.050   0.060  2062.0  0.0412
 237          RX  9920.6  9964.0  9984.7  9996.1 10003.9 10025.4 10041.1 10057.9
 238          RY  1820.0  1804.5  1801.2  1797.3  1797.3  1808.5  1818.3  1820.1
              *
              * *
              * * 592593 is the total flow in Longmont Wash Right Branch upstream
              * * of the confluence with Longmont Wash
              * *
              *

 239          KK    C593
 240          KM      Hydrograph combine C590 + C593R at C593
 241          HC       2
              *
              * *
              * * C593 is the total flow in Longmont Wash below the confluence with
              * * Longmont Wash Right Branch
              * *
              *
1                                        HEC-1 INPUT                                          PAGE  7

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

 242          KK  593594
 243          KM      Normal depth channel route from C593 to C594
 244          KM      Source:  HEC-2 Cross Section: LO0.413
 245          RS       1    FLOW      -1
 246          RC   0.065   0.050   0.060   988.0  0.0202
 247          RX  9937.2  9958.5  9981.7  9992.8 10007.7 10024.4 10041.9 10067.8
 248          RY  1783.6  1773.5  1773.9  1771.3  1771.2  1774.5  1778.7  1788.7
              *

 249          KK    210I
 250          KM   Sub-Basin   210I
 251          KM
 252          KM      The Clark Unit Hydrograph is used for this basin.
 253          KM          The Urban time-area relation is used for this basin.
 254          KM
 255          KM      Time of Concentration for this sub-basin is based on the following:
 256          KM          An rainfall areal reduction factor of 1.000
 257          KM
 258          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 259          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 260          KM   .29 .29 .28 .28 .28 .28 .04 .04 .04 .04 .04 .04 .02 .02 .02 .02 .02 .02
 261          KM
 262          KM          L=   0.634 miles, S=  250 feet/mile, Kb= .03
 263          KM
 264          BA   0.049
 265          LG    0.09    0.15    7.60    0.09   15.00
 266          UC   0.167   0.196
 267          UA       0       5      16      30      65      77      84      90      94      97
 268          UA     100
              *

 269          KK    C594
 270          KM      Hydrograph combine 593594 + 210I at C594
 271          HC       2
              *

 272          KK  594595
 273          KM      Normal depth channel route from C594 to C595
 274          KM      Source:  HEC-2 Cross Section: LO 0.184
 275          RS       5    FLOW      -1
 276          RC   0.065   0.050   0.060  2093.0  0.0201
 277          RX  9814.0  9836.5  9878.5  9988.2  9994.1 10010.9 10030.4 10030.5
 278          RY  1769.3  1766.6  1752.8  1750.6  1747.9  1749.2  1770.5  1770.6
              *

 279          KK    210J
 280          KM   Sub-Basin   210J
 281          KM
 282          KM      The Clark Unit Hydrograph is used for this basin.
 283          KM          The Urban time-area relation is used for this basin.
 284          KM
 285          KM      Time of Concentration for this sub-basin is based on the following:
 286          KM          An rainfall areal reduction factor of 1.000
 287          KM
1                                        HEC-1 INPUT                                          PAGE  8

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

```
288          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
289          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
290          KM   .28 .28 .28 .28 .27 .27 .03 .03 .03 .03 .03 .03 .01 .01 .01 .01 .01 .01
291          KM
292          KM          L=   0.684 miles, S=  187 feet/mile, Kb= .03
293          KM
294          BA   0.103
295          LG    0.09    0.19    6.60    0.13   15.00
296          UC   0.192   0.159
297          UA       0       5      16      30      65      77      84      90      94      97
298          UA     100
             *

299          KK   C595R
300          KM      Hydrograph combine 594595 + 210J at C595
301          HC       2
             *
             * *
             * * C595R is the total flow in Longmont Wash upstream of the confluence
             * * with Bristol Wash
             * *
             *

302          KK    C595
303          KM      Hydrograph combine C595L + C595R at C595
304          HC       2
             *
             * *
             * * C595 is the total flow in Bristol Wash just downstream of the
             * * confluence with Longmont Wash
             * *
             *

305          KK  595596
306          KM      Normal depth channel route from C595 to C596
307          KM      Source:  HEC-2 Cross Section: BR0.290
308          RS       4    FLOW      -1
309          RC   0.055   0.045   0.055  1095.0  0.0110
310          RX  9886.8  9904.8  9948.0 10000.0 10032.4 10081.5 10107.3 10130.4
311          RY  1727.2  1724.1  1725.9  1720.2  1725.6  1725.3  1721.3  1731.4
             *

312          KK    210K
313          KM   Sub-Basin   210K
314          KM
315          KM      The Clark Unit Hydrograph is used for this basin.
316          KM          The Urban time-area relation is used for this basin.
317          KM
318          KM      Time of Concentration for this sub-basin is based on the following:
319          KM          An rainfall areal reduction factor of 1.000
320          KM
321          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
322          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
323          KM   .28 .28 .28 .28 .27 .27 .03 .03 .03 .03 .03 .03 .01 .01 .01 .01 .01 .01
324          KM
```



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

325          KM          L=   0.425 miles, S=  207 feet/mile, Kb= .03
326          KM
327          BA   0.077
328          LG    0.09    0.19    6.60    0.13   15.00
329          UC   0.146   0.095
330          UA       0       5      16      30      65      77      84      90      94      97
331          UA     100
             *

332          KK    C596
333          KM      Hydrograph combine 595596 + 210K at C596
334          HC       2
             *

335          KK    210L
336          KM   Sub-Basin   210L
337          KM
338          KM      The Clark Unit Hydrograph is used for this basin.
339          KM          The Urban time-area relation is used for this basin.
340          KM
341          KM      Time of Concentration for this sub-basin is based on the following:
342          KM          An rainfall areal reduction factor of 1.000
343          KM
344          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
345          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
346          KM   .27 .26 .26 .26 .26 .26 .02 .02 .02 .02 .02 .02 .01 .01 .01 .01 .01 .01
347          KM
348          KM          L=   0.820 miles, S=  251 feet/mile, Kb= .03
349          KM
350          BA   0.137
```

```
 351          LG    0.09    0.25    5.20    0.23   15.90
 352          UC   0.192   0.156
 353          UA       0       5      16      30      65      77      84      90      94      97
 354          UA     100
              *

 355          KK  597598
 356          KM      Normal depth channel route from C597 to C598
 357          KM      Source:  HEC-2 Cross Section: CL 0.328
 358          RS       6    FLOW      -1
 359          RC   0.065   0.050   0.065  2822.0  0.0252
 360          RX  9961.0  9961.9  9969.1  9986.3 10018.5 10082.6 10155.2 10278.8
 361          RY  1740.2  1740.2  1738.1  1731.6  1732.3  1737.1  1740.0  1740.8
              *

 362          KK    210M
 363          KM   Sub-Basin   210M
 364          KM
 365          KM      The Clark Unit Hydrograph is used for this basin.
 366          KM          The Urban time-area relation is used for this basin.
 367          KM
 368          KM      Time of Concentration for this sub-basin is based on the following:
 369          KM          An rainfall areal reduction factor of 1.000
 370          KM
 371          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
1                                          HEC-1 INPUT                                          PAGE 10

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

 372          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 373          KM   .27 .27 .27 .27 .27 .27 .03 .03 .03 .03 .03 .02 .01 .01 .01 .01 .01 .01
 374          KM
 375          KM          L=   1.022 miles, S=  232 feet/mile, Kb= .03
 376          KM
 377          BA   0.162
 378          LG    0.09    0.25    5.80    0.17   15.02
 379          UC   0.221   0.198
 380          UA       0       5      16      30      65      77      84      90      94      97
 381          UA     100
              *

 382          KK    C598
 383          KM      Hydrograph combine 597598 + 210M at C598
 384          HC       2
              *
              * *
              * * C598 is the total flow in Cloudburst Wash at Golden Eagle Blvd.
              * * upstream of DAM 4
              * *
              *

 385          KK    210N
 386          KM   Sub-Basin   210N
 387          KM
 388          KM      The Clark Unit Hydrograph is used for this basin.
 389          KM          The Urban time-area relation is used for this basin.
 390          KM
 391          KM      Time of Concentration for this sub-basin is based on the following:
 392          KM          An rainfall areal reduction factor of 1.000
 393          KM
 394          KM       EXCESS RAINFALL VALUES EXCEEDED IN 5-MINUTE INTERVALS
 395          KM     5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90
 396          KM   .25 .25 .25 .24 .24 .24 .01 .01 .01 .01 .01 .01 .01 .01 .01 .01 .01 .01
 397          KM
 398          KM          L=   0.309 miles, S=  178 feet/mile, Kb= .03
 399          KM
 400          BA   0.049
 401          LG    0.09    0.25    4.10    0.40   16.38
 402          UC   0.138   0.090
 403          UA       0       5      16      30      65      77      84      90      94      97
 404          UA     100
              *

 405          KK   C210I
 406          KM      Hydrograph combine C585 + C596 + C598 + 210N at C599I
 407          HC       4
 408          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   23         210A
                .
                .
   43           .        210B
                .           V
```

```
                .          V
 63             .       C586O
                .          V
                .          V
 72             .      586587
                .          V
                .          V
 79             .      587595
                .          .
                .          .
 86             .          .       210C
                .          .          .
                .          .          .
106             .       C595L...........
                .          .
                .          .
109             .          .       210D
                .          .          V
                .          .          V
129             .          .     588590
                .          .          .
                .          .          .
136             .          .          .       210E
                .          .          .          .
                .          .          .          .
156             .          .      C590L...........
                .          .          .
                .          .          .
159             .          .          .       210F
                .          .          .          V
                .          .          .          V
179             .          .          .     589590
                .          .          .          .
                .          .          .          .
186             .          .          .          .       210G
                .          .          .          .          .
                .          .          .          .          .
206             .          .          .      C590R...........
                .          .          .          .
                .          .          .          .
209             .          .       C590...........
                .          .          .
                .          .          .
212             .          .          .       210H
                .          .          .          V
                .          .          .          V
232             .          .          .     592593
                .          .          .          .
                .          .          .          .
239             .          .       C593...........
                .          .          V
                .          .          V
242             .          .     593594
                .          .          .
                .          .          .
249             .          .          .       210I
                .          .          .          .
                .          .          .          .
269             .          .       C594...........
                .          .          V
                .          .          V
272             .          .     594595
                .          .          .
                .          .          .
279             .          .          .       210J
                .          .          .          .
                .          .          .          .
299             .          .      C595R...........
                .          .          .
                .          .          .
302             .       C595...........
                .          V
                .          V
305             .      595596
                .          .
                .          .
312             .          .       210K
                .          .          .
                .          .          .
332             .       C596...........
                .          .
                .          .
335             .          .       210L
                .          .          V
                .          .          V
355             .          .     597598
                .          .          .
                .          .          .
362             .          .          .       210M
```

```
                .          .          .          .
                .          .          .          .
  382           .          .       C598...........
                .          .          .
                .          .          .
  385           .          .          .       210N
                .          .          .          .
                .          .          .          .
  405       C210I...................................
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              MAY   1991              *
*            VERSION 4.0.1E            *
*                                      *
*  RUN DATE  10/14/96  TIME  10:23:20  *
*                                      *
****************************************
```

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

```
                    FOUNTAIN HILLS ADMP - Project No. 63
                    Future Condition Model                          File:  M210-24.IH1
                    100-Year ,24-Hour Storm, Clark Unit Hydrograph  Date: 03/08/96 CCC
                    Multiple-Basin Model for Sub-basin 210

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

    IT        HYDROGRAPH TIME DATA
                   NMIN          5  MINUTES IN COMPUTATION INTERVAL
                  IDATE      1   0  STARTING DATE
                  ITIME       0000  STARTING TIME
                     NQ        300  NUMBER OF HYDROGRAPH ORDINATES
                 NDDATE      2   0  ENDING DATE
                 NDTIME       0055  ENDING TIME
                  ICENT         19  CENTURY MARK

              COMPUTATION INTERVAL    0.08 HOURS
                   TOTAL TIME BASE   24.92 HOURS

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

  8 JD        INDEX STORM NO. 1
                   STRM       4.20  PRECIPITATION DEPTH
                   TRDA       0.01  TRANSPOSITION DRAINAGE AREA

  9 PI          PRECIPITATION PATTERN
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.00
                  0.01      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.06      0.06
                  0.06      0.06      0.06      0.06      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
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                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00

19 JD        INDEX STORM NO. 2
                STRM        4.12  PRECIPITATION DEPTH
                TRDA        5.00  TRANSPOSITION DRAINAGE AREA

 0 PI         PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.00
                0.01      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.06      0.06
                0.06      0.06      0.06      0.06      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00

20 JD        INDEX STORM NO. 3
                STRM        3.99  PRECIPITATION DEPTH
                TRDA       10.00  TRANSPOSITION DRAINAGE AREA

 0 PI         PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.00
                0.01      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.06      0.06
                0.06      0.06      0.06      0.06      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00

21 JD        INDEX STORM NO. 4
                STRM        3.71  PRECIPITATION DEPTH
                TRDA       50.00  TRANSPOSITION DRAINAGE AREA

 0 PI         PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
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                0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.00
                0.01      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.06      0.06
                0.06      0.06      0.06      0.06      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
 22 JD        INDEX STORM NO. 5
                  STRM        3.62  PRECIPITATION DEPTH
                  TRDA       80.00  TRANSPOSITION DRAINAGE AREA

  0 PI         PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.00
                0.01      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.06      0.06
                0.06      0.06      0.06      0.06      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
1
                                          RUNOFF SUMMARY
                                   FLOW IN CUBIC FEET PER SECOND
                                TIME IN HOURS,  AREA IN SQUARE MILES

                                          PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN    MAXIMUM    TIME OF
          OPERATION        STATION       FLOW    PEAK                                            AREA     STAGE    MAX STAGE
+                                                            6-HOUR     24-HOUR     72-HOUR
          HYDROGRAPH AT
+                            210A        214.   12.00         22.         6.          6.        0.12
          HYDROGRAPH AT
+                            210B        176.   12.00         24.         7.          7.        0.11
          ROUTED TO
+                           C586O        166.   12.08         24.         7.          7.        0.11
          ROUTED TO
+                          586587        163.   12.17         24.         7.          7.        0.11
          ROUTED TO
+                          587595        163.   12.17         24.         7.          7.        0.11
          HYDROGRAPH AT
+                            210C        135.   12.00         15.         4.          4.        0.08
          2 COMBINED AT
+                           C595L        277.   12.00         38.        11.         11.        0.19
          HYDROGRAPH AT
+                            210D        250.   12.00         30.         9.          9.        0.14
          ROUTED TO
+                          588590        245.   12.00         30.         9.          9.        0.14
          HYDROGRAPH AT
```

+		210E	52.	12.00	6.	2.	2.	0.03
+	2 COMBINED AT	C590L	297.	12.00	36.	11.	10.	0.17
+	HYDROGRAPH AT	210F	165.	12.00	21.	7.	7.	0.09
+	ROUTED TO	589590	162.	12.00	21.	7.	7.	0.09
+	HYDROGRAPH AT	210G	281.	12.00	35.	11.	10.	0.16
+	2 COMBINED AT	C590R	442.	12.00	56.	18.	17.	0.25
+	2 COMBINED AT	C590	737.	12.00	91.	28.	27.	0.42
+	HYDROGRAPH AT	210H	127.	12.00	14.	4.	4.	0.07
+	ROUTED TO	592593	125.	12.00	14.	4.	4.	0.07
+	2 COMBINED AT	C593	860.	12.00	105.	32.	31.	0.49
+	ROUTED TO	593594	846.	12.00	105.	32.	31.	0.49
+	HYDROGRAPH AT	210I	86.	12.00	11.	3.	3.	0.05
+	2 COMBINED AT	C594	930.	12.00	116.	35.	34.	0.54
+	ROUTED TO	594595	913.	12.08	116.	35.	34.	0.54
+	HYDROGRAPH AT	210J	182.	12.00	21.	6.	5.	0.10
+	2 COMBINED AT	C595R	1074.	12.08	136.	41.	39.	0.64
+	2 COMBINED AT	C595	1348.	12.08	174.	52.	50.	0.83
+	ROUTED TO	595596	1329.	12.17	174.	52.	50.	0.83
+	HYDROGRAPH AT	210K	145.	12.00	16.	4.	4.	0.08
+	2 COMBINED AT	C596	1441.	12.08	190.	56.	54.	0.91
+	HYDROGRAPH AT	210L	229.	12.00	24.	7.	7.	0.14
+	ROUTED TO	597598	222.	12.08	24.	7.	7.	0.14
+	HYDROGRAPH AT	210M	261.	12.00	30.	8.	8.	0.16
+	2 COMBINED AT	C598	471.	12.00	54.	15.	15.	0.30
+	HYDROGRAPH AT	210N	81.	12.00	8.	2.	2.	0.05
+	4 COMBINED AT	C210I	2141.	12.08	273.	79.	77.	1.38

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

APPENDIX C

Rainfall loss parameter worksheets and supporting Ftn Hills FDS documentation

TABLE C1

Summary of subbasin area and rainfall loss parameters for Fountain Hills FDS Major Basin 207

Subbasin ID (1)	Area sq. miles (2)	Vegetation Cover % (3)	Rainfall Loss Parameters: IA inches (4)	DTHETA (5)	PSIF inches (6)	Bare ground XKSAT in/hr (7)	RTIMP % (8)
207A	0.2560	30.00	0.24	0.35	4.55	0.30	29.81
207B	0.2080	30.00	0.24	0.35	4.45	0.31	32.42
207C	0.1730	35.00	0.19	0.37	5.30	0.21	13.69
207D	0.1970	23.70	0.18	0.31	4.35	0.33	41.30
207E	0.1570	22.45	0.15	0.29	4.35	0.33	44.41
207F	0.1260	28.76	0.20	0.32	4.40	0.32	38.35
207G	0.2360	28.18	0.17	0.37	5.60	0.19	9.10
207H	0.1240	18.22	0.13	0.27	4.35	0.33	46.78
207I	0.0730	15.00	0.09	0.25	4.40	0.33	50.00
207J	0.0930	15.91	0.10	0.26	4.40	0.32	48.61
207K	0.1300	17.46	0.11	0.27	5.40	0.19	37.19
207L	0.0800	15.90	0.09	0.26	6.00	0.15	33.25
207M	0.1160	18.82	0.11	0.28	6.00	0.15	23.09
207N	0.0490	15.56	0.09	0.25	4.80	0.25	35.87
207O	0.1310	19.66	0.13	0.29	5.60	0.19	23.47
Composite Values:	2.1490	24.36	0.17	0.31	---	0.25	31.55

PSIF from Fig 4.3:	4.90
XKSAT vegetation correction factor:	1.16
Adjusted XKSAT for vegetation:	0.29

TABLE C2

Summary of subbasin area and rainfall loss parameters for Fountain Hills FDS Major Basin 208

			Rainfall Loss Parameters				
Subbasin ID (1)	Area sq. miles (2)	Vegetation Cover % (3)	IA inches (4)	DTHETA (5)	PSIF inches (6)	Bare ground XKSAT in/hr (7)	RTIMP % (8)
208A	0.1390	15.14	0.09	0.25	4.35	0.33	49.86
208B	0.0270	15.00	0.09	0.25	4.35	0.33	50.00
208C	0.0660	24.89	0.20	0.32	4.35	0.33	40.11
208D	0.0750	15.00	0.09	0.25	4.35	0.33	50.00
208E	0.0620	15.18	0.09	0.25	4.35	0.33	50.00
208F	0.0690	15.24	0.09	0.25	4.35	0.33	49.92
208G	0.1290	16.81	0.11	0.26	4.60	0.29	54.19
208H	0.0430	20.59	0.12	0.30	5.60	0.19	35.43
208I	0.1170	15.00	0.09	0.25	4.35	0.33	50.00
208J	0.0810	15.00	0.09	0.25	4.35	0.33	50.00
208K	0.0480	15.00	0.09	0.25	4.35	0.33	54.38
208L	0.0590	15.00	0.09	0.25	4.40	0.33	51.31
208M	0.1590	15.04	0.09	0.25	4.40	0.32	62.04
208N	0.0470	16.73	0.09	0.25	6.20	0.14	62.49
208O	0.2300	15.00	0.09	0.25	4.60	0.29	48.49
208P	0.0580	15.00	0.08	0.25	5.70	0.17	59.29
208Q	0.0940	16.17	0.10	0.26	5.00	0.23	54.26
208R	0.0100	15.00	0.08	0.23	6.20	0.14	55.16
208S	0.0680	15.85	0.08	0.24	6.20	0.14	67.07
208T	0.1320	15.00	0.09	0.25	5.20	0.21	44.80
208U	0.1340	15.00	0.09	0.25	5.30	0.20	44.19
208V	0.0280	15.00	0.09	0.21	6.40	0.14	41.15
208W	0.0500	15.00	0.09	0.23	6.20	0.15	42.74
208X	0.0750	20.44	0.13	0.29	5.60	0.19	39.42
Composite Values:	2.0000	15.92	0.10	0.25	---	0.26	50.48

PSIF from Fig 4.3:	4.80
XKSAT vegetation correction factor:	1.07
Adjusted XKSAT for vegetation:	0.28

TABLE C3

Summary of subbasin area and rainfall loss parameters for Fountain Hills FDS Major Basin 209

Subbasin ID (1)	Area sq. miles (2)	Vegetation Cover % (3)	Rainfall Loss Parameters: IA inches (4)	DTHETA (5)	PSIF inches (6)	Bare ground XKSAT in/hr (7)	RTIMP % (8)
209A	0.3680	23.59	0.18	0.31	4.35	0.33	41.41
209B	0.0830	15.00	0.09	0.25	4.35	0.33	50.00
209C	0.0640	16.97	0.11	0.26	4.35	0.33	48.03
209D	0.2440	16.82	0.11	0.26	4.35	0.33	48.63
209E	0.1490	15.00	0.09	0.25	4.35	0.33	50.00
209F	0.2260	26.06	0.18	0.31	4.50	0.31	40.21
209G	0.2040	15.07	0.09	0.25	4.35	0.33	49.93
209H	0.0830	23.92	0.15	0.31	5.60	0.19	26.57
209I	0.1820	16.07	0.10	0.27	6.00	0.16	17.98
Composite Values:	1.6030	19.48	0.13	0.28	---	0.29	41.50

PSIF from Fig 4.3:	4.62
XKSAT vegetation correction factor:	1.11
Adjusted XKSAT for vegetation:	0.32

TABLE C4

Summary of subbasin area and rainfall loss parameters for Fountain Hills FDS Major Basin 210

Subbasin ID (1)	Area sq. miles (2)	Vegetation Cover % (3)	Rainfall Loss Parameters: IA inches (4)	DTHETA (5)	PSIF inches (6)	Bare ground XKSAT in/hr (7)	RTIMP % (8)
210A	0.1230	15.08	0.09	0.25	5.00	0.23	16.65
210B	0.1070	15.07	0.08	0.25	5.80	0.16	37.15
210C	0.0820	15.99	0.11	0.26	4.80	0.26	22.29
210D	0.1400	15.00	0.09	0.25	5.80	0.17	33.66
210E	0.0280	15.00	0.09	0.17	6.80	0.11	15.00
210F	0.0930	15.00	0.09	0.25	4.40	0.32	49.44
210G	0.1620	15.00	0.09	0.25	5.30	0.20	39.22
210H	0.0700	15.00	0.09	0.23	6.20	0.15	21.74
210I	0.0490	15.00	0.09	0.15	7.60	0.09	15.00
210J	0.1030	15.00	0.09	0.19	6.60	0.12	15.00
210K	0.0770	15.00	0.09	0.19	6.60	0.12	15.00
210L	0.1370	15.00	0.09	0.25	5.20	0.22	15.90
210M	0.1620	15.00	0.09	0.25	5.80	0.16	15.02
210N	0.0490	15.05	0.09	0.25	4.10	0.38	16.38
Composite Values:	1.3820	15.07	0.09	0.24	---	0.18	24.82

PSIF from Fig 4.3:	5.61
XKSAT vegetation correction factor:	1.06
Adjusted XKSAT for vegetation:	0.19

Table S-2

Summary
of
Green & Ampt Parameters by SCS Map Unit

[1] SCS Soil Map Unit	[2] XKSAT (Unadj)	[3] PSIF	[4] DTHETA (Dry)	[5] DTHETA (Normal)	[6] RTIMP	[7] Slope Range (%)	[8] Terrain Class	[9] Soil Texture	[10] Runoff Characteristic
8	0.96	2.71	0.35	0.29	0%	0-3	Valley	Loamy Sand	slow
31	0.33	4.35	0.35	0.25	35%	25-65	Mountain	Sandy Loam	moderate to high
36	0.07	8.00	0.30	0.15	0%	1-8	Hillslope	Sandy Clay Loam	slow
40	0.17	5.70	0.39	0.25	0%	3-20	Hillslope	Sandy Loam/Sandy Clay Loam	medium
41	0.17	5.70	0.39	0.25	0%	20-40	Hillslope	Sandy Loam/Sandy Clay Loam	medium to rapid
61	0.15	6.00	0.40	0.25	0%	1-10	Hillslope	Clay Loam/Sandy Loam	slow to medium
63	0.14	6.20	0.39	0.23	25%	10-65	Hillslope	Clay Loam/Sandy Loam	medium to rapid
66	0.23	5.00	0.36	0.25	0%	1-7	Hillslope	Sandy Loam/Sandy Clay Loam	slow to medium
93	0.33	4.35	0.35	0.25	0%	8-30	Hillslope	Sandy Loam/Loam	medium
96	0.07	8.00	0.30	0.15	0%	1-10	Hillslope	Sandy Clay/Sandy Clay Loam	slow

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

206M

Soil Map Unit No. ...	8	40	41	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	5.4	0.0	32.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.96	0.17	0.17	—	—	—	—	—	—	—	—	—
% Rock ...	0%	0%	0%	—	—	—	—	—	—	—	—	—
Terrain Class ...	Valley	Hillslope	Hillslope	—	—	—	—	—	—	—	—	—

0.22 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.23 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
0.0% ... RTIMP (Composite)
14.0% ... Terrain = Valley (composite)
86.0% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.060**

206N

Soil Map Unit No. ...	8	40	41	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	26.7	39.3	31.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.96	0.17	0.17	—	—	—	—	—	—	—	—	—
% Rock ...	0%	0%	0%	—	—	—	—	—	—	—	—	—
Terrain Class ...	Valley	Hillslope	Hillslope	—	—	—	—	—	—	—	—	—

0.27 ... XKSAT (Log averaged)
16% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.29 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
0.0% ... RTIMP (Composite)
27.5% ... Terrain = Valley (composite)
72.5% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.152**

207A

Soil Map Unit No. ...	31	40	61	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	139.6	23.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.17	0.15	—	—	—	—	—	—	—	—	—
% Rock ...	35%	0%	0%	—	—	—	—	—	—	—	—	—
Terrain Class ...	Mountain	Hillslope	Hillslope	—	—	—	—	—	—	—	—	—

0.30 ... XKSAT (Log averaged)
30% ... Vegetation Cover Density (VCD) in percent
1.22 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.37 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
29.8% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
14.8% ... Terrain = Hillside (composite)
85.2% ... Terrain = Mountain (composite) **Total area in square miles = 0.256**

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

207B

Soil Map Unit No. ...	31	40	61	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	123.5	8.1	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.17	0.15	---	---	---	---	---	---	---	---	---
% Rock ...	35%	0%	0%	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	Hillslope	---	---	---	---	---	---	---	---	---

0.31 ... XKSAT (Log averaged)
30% ... Vegetation Cover Density (VCD) in percent
1.22 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.38 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
32.4% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
7.4% ... Terrain = Hillside (composite)
92.6% ... Terrain = Mountain (composite) **Total area in square miles = 0.208**

207C

Soil Map Unit No. ...	31	40	61	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	43.3	7.5	59.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.17	0.15	---	---	---	---	---	---	---	---	---
% Rock ...	35%	0%	0%	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	Hillslope	---	---	---	---	---	---	---	---	---

0.21 ... XKSAT (Log averaged)
35% ... Vegetation Cover Density (VCD) in percent
1.28 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.26 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
13.7% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
60.9% ... Terrain = Hillside (composite)
39.1% ... Terrain = Mountain (composite) **Total area in square miles = 0.173**

207D

Soil Map Unit No. ...	31	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	126.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	---	---	---	---	---	---	---	---	---	---	---

0.33 ... XKSAT (Log averaged)
24% ... Vegetation Cover Density (VCD) in percent
1.15 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.38 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
35.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
0.0% ... Terrain = Hillside (composite)
100.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.197**

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

207E

Soil Map Unit No. ...	31	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	100.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	---	---	---	---	---	---	---	---	---	---	---

0.33 ... XKSAT (Log averaged)
22% ... Vegetation Cover Density (VCD) in percent
1.14 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.38 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
35.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
0.0% ... Terrain = Hillside (composite)
100.0% ... Terrain = Mountain (composite) Total area in square miles = 0.157

207F

Soil Map Unit No. ...	31	61	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	77.7	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.15	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	0%	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	---	---	---	---	---	---	---	---	---	---

0.32 ... XKSAT (Log averaged)
29% ... Vegetation Cover Density (VCD) in percent
1.21 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.39 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
33.7% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
3.8% ... Terrain = Hillside (composite)
96.2% ... Terrain = Mountain (composite) Total area in square miles = 0.126

207G

Soil Map Unit No. ...	31	40	41	61	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	35.4	0.0	48.0	67.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.17	0.17	0.15	---	---	---	---	---	---	---	---
% Rock ...	35%	0%	0%	0%	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	Hillslope	Hillslope	---	---	---	---	---	---	---	---

0.19 ... XKSAT (Log averaged)
28% ... Vegetation Cover Density (VCD) in percent
1.20 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.23 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
8.2% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
76.6% ... Terrain = Hillside (composite)
23.4% ... Terrain = Mountain (composite) Total area in square miles = 0.236

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

207H

Soil Map Unit No. ...	31	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	79.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	---	---	---	---	---	---	---	---	---	---	---

0.33 ... XKSAT (Log averaged)
18% ... Vegetation Cover Density (VCD) in percent
1.09 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.36 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
35.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
0.0% ... Terrain = Hillside (composite)
100.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.124**

207I

Soil Map Unit No. ...	31	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	46.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	---	---	---	---	---	---	---	---	---	---	---

0.33 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.35 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
35.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
0.0% ... Terrain = Hillside (composite)
100.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.073**

207J

Soil Map Unit No. ...	31	41	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	57.6	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.17	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	0%	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	---	---	---	---	---	---	---	---	---	---

0.32 ... XKSAT (Log averaged)
16% ... Vegetation Cover Density (VCD) in percent
1.07 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.34 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
34.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
3.0% ... Terrain = Hillside (composite)
97.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.093**

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

207K

Soil Map Unit No. ...	31	41	96	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	22.6	53.9	6.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.17	0.07	---	---	---	---	---	---	---	---	---
% Rock ...	35%	0%	0%	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	Hillslope	---	---	---	---	---	---	---	---	---

0.19 ... XKSAT (Log averaged)
17% ... Vegetation Cover Density (VCD) in percent
1.08 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.21 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
9.6% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
72.7% ... Terrain = Hillside (composite)
27.3% ... Terrain = Mountain (composite) **Total area in square miles = 0.130**

207L

Soil Map Unit No. ...	41	96	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	45.4	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.17	0.07	---	---	---	---	---	---	---	---	---	---
% Rock ...	0%	0%	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Hillslope	Hillslope	---	---	---	---	---	---	---	---	---	---

0.15 ... XKSAT (Log averaged)
16% ... Vegetation Cover Density (VCD) in percent
1.07 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.16 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
0.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
100.0% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.080**

207M

Soil Map Unit No. ...	8	41	96	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	2.2	59.7	12.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.96	0.17	0.07	---	---	---	---	---	---	---	---	---
% Rock ...	0%	0%	0%	---	---	---	---	---	---	---	---	---
Terrain Class ...	Valley	Hillslope	Hillslope	---	---	---	---	---	---	---	---	---

0.15 ... XKSAT (Log averaged)
19% ... Vegetation Cover Density (VCD) in percent
1.10 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.17 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
0.0% ... RTIMP (Composite)
3.0% ... Terrain = Valley (composite)
97.0% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.116**

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

207N

Soil Map Unit No. ...	8	41	96	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	8.3	21.2	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.96	0.17	0.07	---	---	---	---	---	---	---	---	---
% Rock ...	0%	0%	0%	---	---	---	---	---	---	---	---	---
Terrain Class ...	Valley	Hillslope	Hillslope	---	---	---	---	---	---	---	---	---

0.25 ... XKSAT (Log averaged)
16% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.27 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
0.0% ... RTIMP (Composite)
26.2% ... Terrain = Valley (composite)
73.8% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.049**

207O

Soil Map Unit No. ...	8	41	96	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	12.2	57.5	13.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.96	0.17	0.07	---	---	---	---	---	---	---	---	---
% Rock ...	0%	0%	0%	---	---	---	---	---	---	---	---	---
Terrain Class ...	Valley	Hillslope	Hillslope	---	---	---	---	---	---	---	---	---

0.19 ... XKSAT (Log averaged)
20% ... Vegetation Cover Density (VCD) in percent
1.11 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.21 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
0.0% ... RTIMP (Composite)
14.6% ... Terrain = Valley (composite)
85.4% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.131**

208A

Soil Map Unit No. ...	31	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	88.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	---	---	---	---	---	---	---	---	---	---	---

0.33 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.35 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
35.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
0.0% ... Terrain = Hillside (composite)
100.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.139**

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

208B

Soil Map Unit No. ...	31	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	17.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	---	---	---	---	---	---	---	---	---	---	---

0.33 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.35 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
35.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
0.0% ... Terrain = Hillside (composite)
100.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.027**

208C

Soil Map Unit No. ...	31	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	42.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	---	---	---	---	---	---	---	---	---	---	---

0.33 ... XKSAT (Log averaged)
25% ... Vegetation Cover Density (VCD) in percent
1.17 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.38 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
35.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
0.0% ... Terrain = Hillside (composite)
100.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.066**

208D

Soil Map Unit No. ...	31	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	47.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	---	---	---	---	---	---	---	---	---	---	---

0.33 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.35 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
35.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
0.0% ... Terrain = Hillside (composite)
100.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.075**

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

208E

Soil Map Unit No. ...	31	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	39.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	---	---	---	---	---	---	---	---	---	---	---

0.33 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.35 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
35.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
0.0% ... Terrain = Hillside (composite)
100.0% ... Terrain = Mountain (composite) Total area in square miles = 0.062

208F

Soil Map Unit No. ...	31	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	44.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	---	---	---	---	---	---	---	---	---	---	---

0.33 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.35 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
35.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
0.0% ... Terrain = Hillside (composite)
100.0% ... Terrain = Mountain (composite) Total area in square miles = 0.069

208G

Soil Map Unit No. ...	31	41	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	66.1	16.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.17	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	0%	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	---	---	---	---	---	---	---	---	---	---

0.29 ... XKSAT (Log averaged)
17% ... Vegetation Cover Density (VCD) in percent
1.08 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.31 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
27.9% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
20.2% ... Terrain = Hillside (composite)
79.8% ... Terrain = Mountain (composite) Total area in square miles = 0.129

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

208H

Soil Map Unit No. ...	31	41	63	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	4.9	20.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.17	0.14	---	---	---	---	---	---	---	---	---
% Rock ...	35%	0%	25%	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	Hillslope	---	---	---	---	---	---	---	---	---

0.19 ... XKSAT (Log averaged)
21% ... Vegetation Cover Density (VCD) in percent
1.12 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.21 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
8.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
82.2% ... Terrain = Hillside (composite)
17.8% ... Terrain = Mountain (composite) **Total area in square miles = 0.043**

208I

Soil Map Unit No. ...	31	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	74.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	---	---	---	---	---	---	---	---	---	---	---

0.33 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.35 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
35.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
0.0% ... Terrain = Hillside (composite)
100.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.117**

208J

Soil Map Unit No. ...	31	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	51.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	---	---	---	---	---	---	---	---	---	---	---

0.33 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.35 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
35.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
0.0% ... Terrain = Hillside (composite)
100.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.081**

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

208K

Soil Map Unit No. ...	31	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	30.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	---	---	---	---	---	---	---	---	---	---	---

0.33 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.35 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
35.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
0.0% ... Terrain = Hillside (composite)
100.0% ... Terrain = Mountain (composite) Total area in square miles = 0.048

208L

Soil Map Unit No. ...	31	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	37.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	---	---	---	---	---	---	---	---	---	---	---

0.33 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.35 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
35.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
0.0% ... Terrain = Hillside (composite)
100.0% ... Terrain = Mountain (composite) Total area in square miles = 0.059

208M

Soil Map Unit No. ...	31	63	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	98.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.14	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	25%	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	---	---	---	---	---	---	---	---	---	---

0.32 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.34 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
34.7% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
3.5% ... Terrain = Hillside (composite)
96.5% ... Terrain = Mountain (composite) Total area in square miles = 0.159

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

208N

Soil Map Unit No. ...	31	41	63	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	0.2	1.6	28.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.17	0.14	---	---	---	---	---	---	---	---	---
% Rock ...	35%	0%	25%	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	Hillslope	---	---	---	---	---	---	---	---	---

0.14 ... XKSAT (Log averaged)
17% ... Vegetation Cover Density (VCD) in percent
1.07 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.15 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
23.7% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
99.4% ... Terrain = Hillside (composite)
0.6% ... Terrain = Mountain (composite) Total area in square miles = 0.047

208O

Soil Map Unit No. ...	31	63	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	124.9	22.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.14	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	25%	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	---	---	---	---	---	---	---	---	---	---

0.29 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.31 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
33.5% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
15.1% ... Terrain = Hillside (composite)
84.9% ... Terrain = Mountain (composite) Total area in square miles = 0.230

208P

Soil Map Unit No. ...	31	63	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	9.6	27.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.14	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	25%	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	---	---	---	---	---	---	---	---	---	---

0.17 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.18 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
27.6% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
74.3% ... Terrain = Hillside (composite)
25.7% ... Terrain = Mountain (composite) Total area in square miles = 0.058

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

208Q

Soil Map Unit No. ...	31	63	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	36.2	24.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.14	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	25%	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	---	---	---	---	---	---	---	---	---	---

0.23 ... XKSAT (Log averaged)
16% ... Vegetation Cover Density (VCD) in percent
1.07 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.25 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
31.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
40.1% ... Terrain = Hillside (composite)
59.9% ... Terrain = Mountain (composite) Total area in square miles = 0.094

208R

Soil Map Unit No. ...	63	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.14	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	25%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Hillslope	---	---	---	---	---	---	---	---	---	---	---

0.14 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.15 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
25.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
100.0% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) Total area in square miles = 0.010

208S

Soil Map Unit No. ...	63	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	43.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.14	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	25%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Hillslope	---	---	---	---	---	---	---	---	---	---	---

0.14 ... XKSAT (Log averaged)
16% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.15 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
25.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
100.0% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) Total area in square miles = 0.068

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

208T

Soil Map Unit No. ...	31	63	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	40.5	43.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.14	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	25%	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	---	---	---	---	---	---	---	---	---	---

0.21 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.22 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
29.8% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
52.0% ... Terrain = Hillside (composite)
48.0% ... Terrain = Mountain (composite) Total area in square miles = 0.132

208U

Soil Map Unit No. ...	31	63	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	35.8	49.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.14	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	25%	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	---	---	---	---	---	---	---	---	---	---

0.20 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.21 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
29.2% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
58.1% ... Terrain = Hillside (composite)
41.9% ... Terrain = Mountain (composite) Total area in square miles = 0.134

208V

Soil Map Unit No. ...	63	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	17.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.14	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	25%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Hillslope	---	---	---	---	---	---	---	---	---	---	---

0.14 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.15 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
25.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
100.0% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) Total area in square miles = 0.028

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

208W

Soil Map Unit No. ...	41	63	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	9.4	22.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.17	0.14	---	---	---	---	---	---	---	---	---	---
% Rock ...	0%	25%	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Hillslope	Hillslope	---	---	---	---	---	---	---	---	---	---

0.15 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.16 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
17.7% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
100.0% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.050**

208X

Soil Map Unit No. ...	8	41	63	96	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	6.1	10.1	31.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.96	0.17	0.14	0.07	---	---	---	---	---	---	---	---
% Rock ...	0%	0%	25%	0%	---	---	---	---	---	---	---	---
Terrain Class ...	Valley	Hillslope	Hillslope	Hillslope	---	---	---	---	---	---	---	---

0.19 ... XKSAT (Log averaged)
20% ... Vegetation Cover Density (VCD) in percent
1.12 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.21 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
16.5% ... RTIMP (Composite)
12.6% ... Terrain = Valley (composite)
87.4% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.075**

209A

Soil Map Unit No. ...	31	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	235.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	---	---	---	---	---	---	---	---	---	---	---

0.33 ... XKSAT (Log averaged)
24% ... Vegetation Cover Density (VCD) in percent
1.15 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.38 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
35.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
0.0% ... Terrain = Hillside (composite)
100.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.368**

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

209B

Soil Map Unit No. ...	31	0	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	53.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	---	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	---	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	---	---	---	---	---	---	---	---	---	---	---	---

0.33 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.35 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
35.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
0.0% ... Terrain = Hillside (composite)
100.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.083**

209C

Soil Map Unit No. ...	31	0	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	40.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	---	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	---	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	---	---	---	---	---	---	---	---	---	---	---	---

0.33 ... XKSAT (Log averaged)
17% ... Vegetation Cover Density (VCD) in percent
1.08 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.36 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
35.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
0.0% ... Terrain = Hillside (composite)
100.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.064**

209D

Soil Map Unit No. ...	31	0	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	156.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	---	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	---	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	---	---	---	---	---	---	---	---	---	---	---	---

0.33 ... XKSAT (Log averaged)
17% ... Vegetation Cover Density (VCD) in percent
1.08 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.36 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
35.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
0.0% ... Terrain = Hillside (composite)
100.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.244**

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

209E

Soil Map Unit No. ...	31	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	95.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	---	---	---	---	---	---	---	---	---	---	---

0.33 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.35 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
35.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
0.0% ... Terrain = Hillside (composite)
100.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.149**

209F

Soil Map Unit No. ...	31	41	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	127.7	16.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.17	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	0%	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	---	---	---	---	---	---	---	---	---	---

0.31 ... XKSAT (Log averaged)
26% ... Vegetation Cover Density (VCD) in percent
1.18 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.36 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
30.9% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
11.6% ... Terrain = Hillside (composite)
88.4% ... Terrain = Mountain (composite) **Total area in square miles = 0.226**

209G

Soil Map Unit No. ...	31	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	130.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	---	---	---	---	---	---	---	---	---	---	---

0.33 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.35 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
35.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
0.0% ... Terrain = Hillside (composite)
100.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.204**

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

209H

Soil Map Unit No. ...	31	41	63	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	14.4	20.2	18.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.17	0.14	---	---	---	---	---	---	---	---	---
% Rock ...	35%	0%	25%	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	Hillslope	---	---	---	---	---	---	---	---	---

0.19 ... XKSAT (Log averaged)
24% ... Vegetation Cover Density (VCD) in percent
1.15 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.22 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
18.3% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
73.1% ... Terrain = Hillside (composite)
26.9% ... Terrain = Mountain (composite) **Total area in square miles = 0.083**

209I

Soil Map Unit No. ...	31	41	61	63	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	2.8	34.3	58.8	20.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.17	0.15	0.14	---	---	---	---	---	---	---	---
% Rock ...	35%	0%	0%	25%	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	Hillslope	Hillslope	---	---	---	---	---	---	---	---

0.16 ... XKSAT (Log averaged)
16% ... Vegetation Cover Density (VCD) in percent
1.07 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.17 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
5.3% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
97.6% ... Terrain = Hillside (composite)
2.4% ... Terrain = Mountain (composite) **Total area in square miles = 0.182**

210A

Soil Map Unit No. ...	8	40	41	96	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	19.7	5.3	42.2	11.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.96	0.17	0.17	0.07	---	---	---	---	---	---	---	---
% Rock ...	0%	0%	0%	0%	---	---	---	---	---	---	---	---
Terrain Class ...	Valley	Hillslope	Hillslope	Hillslope	---	---	---	---	---	---	---	---

0.23 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.24 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
0.0% ... RTIMP (Composite)
25.1% ... Terrain = Valley (composite)
74.9% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.123**

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

210B

Soil Map Unit No. ...	41	63	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	56.9	11.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.17	0.14	---	---	---	---	---	---	---	---	---	---
% Rock ...	0%	25%	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Hillslope	Hillslope	---	---	---	---	---	---	---	---	---	---

0.16 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.17 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
4.2% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
100.0% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.107**

210C

Soil Map Unit No. ...	8	40	41	63	96	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	16.8	0.2	18.6	11.0	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.96	0.17	0.17	0.14	0.07	---	---	---	---	---	---	---
% Rock ...	0%	0%	0%	25%	0%	---	---	---	---	---	---	---
Terrain Class ...	Valley	Hillslope	Hillslope	Hillslope	Hillslope	---	---	---	---	---	---	---

0.26 ... XKSAT (Log averaged)
16% ... Vegetation Cover Density (VCD) in percent
1.07 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.28 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
5.3% ... RTIMP (Composite)
32.1% ... Terrain = Valley (composite)
67.9% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.082**

210D

Soil Map Unit No. ...	31	41	63	96	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	29.6	15.5	25.3	18.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.17	0.14	0.07	---	---	---	---	---	---	---	---
% Rock ...	35%	0%	25%	0%	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	Hillslope	Hillslope	---	---	---	---	---	---	---	---

0.17 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.18 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
18.7% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
66.9% ... Terrain = Hillside (composite)
33.1% ... Terrain = Mountain (composite) **Total area in square miles = 0.140**

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

210E

Soil Map Unit No. ...	41	96	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	9.7	7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.17	0.07	---	---	---	---	---	---	---	---	---	---
% Rock ...	0%	0%	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Hillslope	Hillslope	---	---	---	---	---	---	---	---	---	---

0.11 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.12 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
0.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
100.0% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.028**

210F

Soil Map Unit No. ...	31	96	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	58.3	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.07	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	0%	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	---	---	---	---	---	---	---	---	---	---

0.32 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.34 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
34.4% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
1.6% ... Terrain = Hillside (composite)
98.4% ... Terrain = Mountain (composite) **Total area in square miles = 0.093**

210G

Soil Map Unit No. ...	31	96	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	71.5	31.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.07	---	---	---	---	---	---	---	---	---	---
% Rock ...	35%	0%	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	---	---	---	---	---	---	---	---	---	---

0.20 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.22 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
24.2% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
30.8% ... Terrain = Hillside (composite)
69.2% ... Terrain = Mountain (composite) **Total area in square miles = 0.162**

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

210H

Soil Map Unit No. ...	31	40	61	63	96	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	6.5	6.7	20.9	2.9	7.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.33	0.17	0.15	0.14	0.07	---	---	---	---	---	---	---
% Rock ...	35%	0%	0%	25%	0%	---	---	---	---	---	---	---
Terrain Class ...	Mountain	Hillslope	Hillslope	Hillslope	Hillslope	---	---	---	---	---	---	---

0.15 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.16 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
6.7% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
85.4% ... Terrain = Hillside (composite)
14.6% ... Terrain = Mountain (composite) **Total area in square miles = 0.070**

210I

Soil Map Unit No. ...	40	41	96	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	4.7	4.1	22.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.17	0.17	0.07	---	---	---	---	---	---	---	---	---
% Rock ...	0%	0%	0%	---	---	---	---	---	---	---	---	---
Terrain Class ...	Hillslope	Hillslope	Hillslope	---	---	---	---	---	---	---	---	---

0.09 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.09 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
0.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
100.0% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.049**

210J

Soil Map Unit No. ...	8	41	96	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	0.6	39.2	26.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.96	0.17	0.07	---	---	---	---	---	---	---	---	---
% Rock ...	0%	0%	0%	---	---	---	---	---	---	---	---	---
Terrain Class ...	Valley	Hillslope	Hillslope	---	---	---	---	---	---	---	---	---

0.12 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.13 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
0.0% ... RTIMP (Composite)
0.9% ... Terrain = Valley (composite)
99.1% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.103**

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

210K

Soil Map Unit No. ...	8	40	41	96	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	6.5	6.6	5.7	30.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.96	0.17	0.17	0.07	---	---	---	---	---	---	---	---
% Rock ...	0%	0%	0%	0%	---	---	---	---	---	---	---	---
Terrain Class ...	Valley	Hillslope	Hillslope	Hillslope	---	---	---	---	---	---	---	---

0.12 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.13 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
0.0% ... RTIMP (Composite)
13.1% ... Terrain = Valley (composite)
86.9% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.077**

210L

Soil Map Unit No. ...	8	40	41	61	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	13.6	23.9	36.2	14.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.96	0.17	0.17	0.15	---	---	---	---	---	---	---	---
% Rock ...	0%	0%	0%	0%	---	---	---	---	---	---	---	---
Terrain Class ...	Valley	Hillslope	Hillslope	Hillslope	---	---	---	---	---	---	---	---

0.22 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.23 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
0.0% ... RTIMP (Composite)
15.5% ... Terrain = Valley (composite)
84.5% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.137**

210M

Soil Map Unit No. ...	8	40	41	96	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	16.4	50.4	0.1	37.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.96	0.17	0.17	0.07	---	---	---	---	---	---	---	---
% Rock ...	0%	0%	0%	0%	---	---	---	---	---	---	---	---
Terrain Class ...	Valley	Hillslope	Hillslope	Hillslope	---	---	---	---	---	---	---	---

0.16 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.17 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
0.0% ... RTIMP (Composite)
15.8% ... Terrain = Valley (composite)
84.2% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) **Total area in square miles = 0.162**

TABLE S-3
XKSAT AND TERRAIN CLASSIFICATIONS BY SUB-BASIN
Future Condition

210N

Soil Map Unit No. ...	8	40	96	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	17.6	7.4	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.96	0.17	0.07	---	---	---	---	---	---	---	---	---
% Rock ...	0%	0%	0%	---	---	---	---	---	---	---	---	---
Terrain Class ...	Valley	Hillslope	Hillslope	---	---	---	---	---	---	---	---	---

0.38 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.40 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
0.0% ... RTIMP (Composite)
56.5% ... Terrain = Valley (composite)
43.5% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) Total area in square miles = 0.049

211A

Soil Map Unit No. ...	41	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	91.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.17	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	0%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Hillslope	---	---	---	---	---	---	---	---	---	---	---

0.17 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.18 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
0.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
100.0% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) Total area in square miles = 0.143

211B

Soil Map Unit No. ...	41	0	0	0	0	0	0	0	0	0	0	0
Soil Map Unit Area(ac) ...	69.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XKSAT(Unadj) ...	0.17	---	---	---	---	---	---	---	---	---	---	---
% Rock ...	0%	---	---	---	---	---	---	---	---	---	---	---
Terrain Class ...	Hillslope	---	---	---	---	---	---	---	---	---	---	---

0.17 ... XKSAT (Log averaged)
15% ... Vegetation Cover Density (VCD) in percent
1.06 ... Ck: 0.889+1.111*VCD - Applied EXCEPT for XKSAT>=1.2 & VCD<=10%

0.18 ... XKSAT (Adj. for VCD using Ck=XKSAT(adj)/XKSAT(unadj))
0.0% ... RTIMP (Composite)
0.0% ... Terrain = Valley (composite)
100.0% ... Terrain = Hillside (composite)
0.0% ... Terrain = Mountain (composite) Total area in square miles = 0.109

Table S-4

Land Use Identifiers and Percent Impervious Estimates

Landuse Code	Description	Fountain Hills Zoning Classifications	Percent Impervious
VLDR	Very Low Density Residential	Rural-190, Rural-43	15
LDR	Light Density Residential	R1-35, R1-18	25
MDR	Medium Density Residential	R1-10, R1-8, R1-6	45
MFR	Multi-Family Residential	R-2, R-3, R-4, R-5,	65
C	Commercial	C-S, C-O, C-1, C-2, C-3	75
I	Industrial	IND-1, IND-2, IND-3	90
School	Schools	C-1	varies
DE	Drainage Easement (width > 50')	N/A	0
RW	Street Right-of-Way	N/A	90
ND	Natural Desert	N/A	0

Qualifiers:

-F	Fully developed
-P	Less than 50% developed
-N	Undeveloped (natural)
(##)	Value in parenthesis is estimated % impervious

Example: VLDR-P(23) indicates a partially developed VLDR land use with an estimated average percent impervious value of 23% for the entire parcel.

TABLE S-5

SUB-BASIN LAND USE AREAS AND URBAN RTIMP ESTIMATES
Future Condition

206K

Land Use Identifier ...	LDR-F	LDR-F	MDR-F	0	0	0	0	0
Land Use Area(ac) ...	29.4	4.9	1.4	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	25%	25%	45%	—	—	—	—	—
Land Use Char. ...	Urban	Urban	Urban	—	—	—	—	—
Urban Area ...	29.4	4.9	1.4	—	—	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.0558
25.8% ... Composite Urban Percent Impervious — Total area in square miles = 0.0558

206L

Land Use Identifier ...	LDR-F	LDR-F	MDR-F	0	0	0	0	0
Land Use Area(ac) ...	18.2	19.9	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	25%	25%	45%	—	—	—	—	—
Land Use Char. ...	Urban	Urban	Urban	—	—	—	—	—
Urban Area ...	18.2	19.9	0.0	—	—	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.0595
25.0% ... Composite Urban Percent Impervious — Total area in square miles = 0.0595

206M

Land Use Identifier ...	DE	LDR-F	MDR-F	MFR-F	0	0	0	0
Land Use Area(ac) ...	1.1	0.0	32.3	4.7	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	25%	45%	65%	—	—	—	—
Land Use Char. ...	Natural	Urban	Urban	Urban	—	—	—	—
Urban Area ...	—	0.0	32.3	4.7	—	—	—	—

97.1% ... Percent Urban — Urban area in square miles = 0.0579
46.2% ... Composite Urban Percent Impervious — Total area in square miles = 0.0596

206N

Land Use Identifier ...	C-F	DE	MDR-F	MFR-F	MFR-F	SCHOOL	0	0
Land Use Area(ac) ...	0.7	15.7	8.3	69.7	2.3	0.5	0.0	0.0
Percent Impervious ...	75%	0%	45%	65%	65%	25%	—	—
Land Use Char. ...	Urban	Natural	Urban	Urban	Urban	Urban	—	—
Urban Area ...	0.7	—	8.3	69.7	2.3	0.5	—	—

83.8% ... Percent Urban — Urban area in square miles = 0.1272
52.7% ... Composite Urban Percent Impervious — Total area in square miles = 0.1518

207A

Land Use Identifier ...	ND	0	0	0	0	0	0	0
Land Use Area(ac) ...	163.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	—	—	—	—	—	—	—
Land Use Char. ...	Natural	—	—	—	—	—	—	—
Urban Area ...	—	—	—	—	—	—	—	—

0.0% ... Percent Urban — Urban area in square miles = 0.0000
0.0% ... Composite Urban Percent Impervious — Total area in square miles = 0.2561

TABLE S-5

SUB-BASIN LAND USE AREAS AND URBAN RTIMP ESTIMATES
Future Condition

207B

Land Use Identifier ...	ND	0	0	0	0	0	0	0
Land Use Area(ac) ...	133.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	—	—	—	—	—	—	—
Land Use Char. ...	Natural	—	—	—	—	—	—	—
Urban Area ...	—	—	—	—	—	—	—	—

0.0% ... Percent Urban — Urban area in square miles = 0.0000
0.0% ... Composite Urban Percent Impervious — Total area in square miles = 0.20[illegible]

207C

Land Use Identifier ...	ND	0	0	0	0	0	0	0
Land Use Area(ac) ...	110.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	—	—	—	—	—	—	—
Land Use Char. ...	Natural	—	—	—	—	—	—	—
Urban Area ...	—	—	—	—	—	—	—	—

0.0% ... Percent Urban — Urban area in square miles = 0.00[illegible]
0.0% ... Composite Urban Percent Impervious — Total area in square miles = 0.1730

207D

Land Use Identifier ...	ND	VLDR-F	0	0	0	0	0	0
Land Use Area(ac) ...	73.2	53.0	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	15%	—	—	—	—	—	—
Land Use Char. ...	Natural	Urban	—	—	—	—	—	—
Urban Area ...	—	53.0	—	—	—	—	—	—

42.0% ... Percent Urban — Urban area in square miles = 0.08[illegible]
6.3% ... Composite Urban Percent Impervious — Total area in square miles = 0.19[illegible]

207E

Land Use Identifier ...	ND	VLDR-F	0	0	0	0	0	0
Land Use Area(ac) ...	37.3	62.8	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	15%	—	—	—	—	—	—
Land Use Char. ...	Natural	Urban	—	—	—	—	—	—
Urban Area ...	—	62.8	—	—	—	—	—	—

62.7% ... Percent Urban — Urban area in square miles = 0.098[illegible]
9.4% ... Composite Urban Percent Impervious — Total area in square miles = 0.156[illegible]

207F

Land Use Identifier ...	ND	VLDR-F	VLDR-F	0	0	0	0	0
Land Use Area(ac) ...	55.6	0.3	24.9	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	15%	15%	—	—	—	—	—
Land Use Char. ...	Natural	Urban	Urban	—	—	—	—	—
Urban Area ...	—	0.3	24.9	—	—	—	—	—

31.2% ... Percent Urban — Urban area in square miles = 0.0393
4.7% ... Composite Urban Percent Impervious — Total area in square miles = 0.1261

TABLE S-5

SUB-BASIN LAND USE AREAS AND URBAN RTIMP ESTIMATES
Future Condition

207G

Land Use Identifier ...	DE	LDR-F	ND	VLDR-F	0	0	0	0
Land Use Area(ac) ...	1.5	0.7	140.9	8.1	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	25%	0%	15%	—	—	—	—
Land Use Char. ...	Natural	Urban	Natural	Urban	—	—	—	—
Urban Area ...	—	0.7	—	8.1	—	—	—	—

5.8% ... Percent Urban — Urban area in square miles = 0.0138
0.9% ... Composite Urban Percent Impervious — Total area in square miles = 0.2363

207H

Land Use Identifier ...	ND	VLDR-F	0	0	0	0	0	0
Land Use Area(ac) ...	17.1	62.6	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	15%	—	—	—	—	—	—
Land Use Char. ...	Natural	Urban	—	—	—	—	—	—
Urban Area ...	—	62.6	—	—	—	—	—	—

78.5% ... Percent Urban — Urban area in square miles = 0.0978
11.8% ... Composite Urban Percent Impervious — Total area in square miles = 0.1245

207I

Land Use Identifier ...	VLDR-F	0	0	0	0	0	0	0
Land Use Area(ac) ...	46.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	15%	—	—	—	—	—	—	—
Land Use Char. ...	Urban	—	—	—	—	—	—	—
Urban Area ...	46.7	—	—	—	—	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.0729
15.0% ... Composite Urban Percent Impervious — Total area in square miles = 0.0729

207J

Land Use Identifier ...	DE	LDR-F	MDR-F	ND	VLDR-F	VLDR-F	0	0
Land Use Area(ac) ...	0.5	1.7	0.3	2.7	9.3	44.9	0.0	0.0
Percent Impervious ...	0%	25%	45%	0%	15%	15%	—	—
Land Use Char. ...	Natural	Urban	Urban	Natural	Urban	Urban	—	—
Urban Area ...	—	1.7	0.3	—	9.3	44.9	—	—

94.7% ... Percent Urban — Urban area in square miles = 0.0878
14.6% ... Composite Urban Percent Impervious — Total area in square miles = 0.0928

207K

Land Use Identifier ...	DE	LDR-F	LDR-F	LDR-F	MDR-F	MDR-F	ND	VLDR-F
Land Use Area(ac) ...	13.6	32.7	0.8	0.9	30.3	0.0	0.1	4.7
Percent Impervious ...	0%	25%	25%	25%	45%	45%	0%	15%
Land Use Char. ...	Natural	Urban	Urban	Urban	Urban	Urban	Natural	Urban
Urban Area ...	—	32.7	0.8	0.9	30.3	0.0	—	4.7

83.6% ... Percent Urban — Urban area in square miles = 0.1083
27.6% ... Composite Urban Percent Impervious — Total area in square miles = 0.1296

TABLE S-5

SUB-BASIN LAND USE AREAS AND URBAN RTIMP ESTIMATES
Future Condition

207L

Land Use Identifier ...	DE	LDR-F	LDR-F	MDR-F	MDR-F	ND	0	0
Land Use Area(ac) ...	0.7	1.7	19.0	26.5	0.0	3.5	0.0	0.0
Percent Impervious ...	0%	25%	25%	45%	45%	0%	—	—
Land Use Char. ...	Natural	Urban	Urban	Urban	Urban	Natural	—	—
Urban Area ...	—	1.7	19.0	26.5	0.0	—	—	—

91.8% ... Percent Urban — Urban area in square miles = 0.0738
33.3% ... Composite Urban Percent Impervious — Total area in square miles = 0.08[illegible]

207M

Land Use Identifier ...	C-F	DE	LDR-F	LDR-F	MDR-F	MDR-F	0	0
Land Use Area(ac) ...	4.1	16.7	0.1	49.9	1.4	2.0	0.0	0.0
Percent Impervious ...	75%	0%	25%	25%	45%	45%	—	—
Land Use Char. ...	Urban	Natural	Urban	Urban	Urban	Urban	—	—
Urban Area ...	4.1	—	0.1	49.9	1.4	2.0	—	—

77.5% ... Percent Urban — Urban area in square miles = 0.08[illegible]
23.1% ... Composite Urban Percent Impervious — Total area in square miles = 0.1159

207N

Land Use Identifier ...	DE	LDR-F	MDR-F	MDR-F	0	0	0	0
Land Use Area(ac) ...	0.9	12.3	0.1	18.2	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	25%	45%	45%	—	—	—	—
Land Use Char. ...	Natural	Urban	Urban	Urban	—	—	—	—
Urban Area ...	—	12.3	0.1	18.2	—	—	—	—

97.1% ... Percent Urban — Urban area in square miles = 0.047[illegible]
35.9% ... Composite Urban Percent Impervious — Total area in square miles = 0.049[illegible]

207O

Land Use Identifier ...	DE	LDR-F	LDR-F	MDR-F	SCHOOL	VLDR-F	VLDR-F	0
Land Use Area(ac) ...	22.9	0.4	27.2	22.5	10.0	0.3	0.1	0.0
Percent Impervious ...	0%	25%	25%	45%	25%	15%	15%	—
Land Use Char. ...	Natural	Urban	Urban	Urban	Urban	Urban	Urban	—
Urban Area ...	—	0.4	27.2	22.5	10.0	0.3	0.1	—

72.6% ... Percent Urban — Urban area in square miles = 0.094[illegible]
23.5% ... Composite Urban Percent Impervious — Total area in square miles = 0.130[illegible]

208A

Land Use Identifier ...	ND	VLDR-F	0	0	0	0	0	0
Land Use Area(ac) ...	0.8	87.9	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	15%	—	—	—	—	—	—
Land Use Char. ...	Natural	Urban	—	—	—	—	—	—
Urban Area ...	—	87.9	—	—	—	—	—	—

99.1% ... Percent Urban — Urban area in square miles = 0.1373
14.9% ... Composite Urban Percent Impervious — Total area in square miles = 0.1386

TABLE S-5

SUB-BASIN LAND USE AREAS AND URBAN RTIMP ESTIMATES
Future Condition

208B

Land Use Identifier ...	VLDR-F	0	0	0	0	0	0	0
Land Use Area(ac) ...	17.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	15%	—	—	—	—	—	—	—
Land Use Char. ...	Urban	—	—	—	—	—	—	—
Urban Area ...	17.2	—	—	—	—	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.0269
15.0% ... Composite Urban Percent Impervious — Total area in square miles = 0.0269

208C

Land Use Identifier ...	ND	VLDR-F	0	0	0	0	0	0
Land Use Area(ac) ...	28.0	14.5	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	15%	—	—	—	—	—	—
Land Use Char. ...	Natural	Urban	—	—	—	—	—	—
Urban Area ...	—	14.5	—	—	—	—	—	—

34.0% ... Percent Urban — Urban area in square miles = 0.0226
5.1% ... Composite Urban Percent Impervious — Total area in square miles = 0.0664

208D

Land Use Identifier ...	VLDR-F	0	0	0	0	0	0	0
Land Use Area(ac) ...	47.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	15%	—	—	—	—	—	—	—
Land Use Char. ...	Urban	—	—	—	—	—	—	—
Urban Area ...	47.7	—	—	—	—	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.0745
15.0% ... Composite Urban Percent Impervious — Total area in square miles = 0.0745

208E

Land Use Identifier ...	DE	LDR-F	VLDR-F	0	0	0	0	0
Land Use Area(ac) ...	0.4	0.7	38.6	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	25%	15%	—	—	—	—	—
Land Use Char. ...	Natural	Urban	Urban	—	—	—	—	—
Urban Area ...	—	0.7	38.6	—	—	—	—	—

98.9% ... Percent Urban — Urban area in square miles = 0.0614
15.0% ... Composite Urban Percent Impervious — Total area in square miles = 0.0621

208F

Land Use Identifier ...	DE	MDR-F	VLDR-F	0	0	0	0	0
Land Use Area(ac) ...	0.6	0.2	43.4	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	45%	15%	—	—	—	—	—
Land Use Char. ...	Natural	Urban	Urban	—	—	—	—	—
Urban Area ...	—	0.2	43.4	—	—	—	—	—

98.6% ... Percent Urban — Urban area in square miles = 0.0681
14.9% ... Composite Urban Percent Impervious — Total area in square miles = 0.0691

TABLE S-5

SUB-BASIN LAND USE AREAS AND URBAN RTIMP ESTIMATES
Future Condition

208G	Land Use Identifier ...	DE	LDR-F	LDR-F	MDR-F	MDR-F	MDR-F	MDR-F	VLDR-F
	Land Use Area(ac) ...	11.5	23.4	22.7	4.3	2.0	5.8	9.3	3.7
	Percent Impervious ...	0%	25%	25%	45%	45%	45%	45%	15%
	Land Use Char. ...	Natural	Urban	Urban	Urban	Urban	Urban	Urban	Urban
	Urban Area ...	—	23.4	22.7	4.3	2.0	5.8	9.3	3.7
	86.1% ... Percent Urban						Urban area in square miles =		0.1114
	26.3% ... Composite Urban Percent Impervious						Total area in square miles =		0.12[illegible]
208H	Land Use Identifier ...	DE	LDR-F	MDR-F	MDR-F	MDR-F	0	0	0
	Land Use Area(ac) ...	10.2	1.1	5.7	10.3	0.1	0.0	0.0	0.0
	Percent Impervious ...	0%	25%	45%	45%	45%	—	—	—
	Land Use Char. ...	Natural	Urban	Urban	Urban	Urban	—	—	—
	Urban Area ...	—	1.1	5.7	10.3	0.1	—	—	—
	62.7% ... Percent Urban						Urban area in square miles =		0.02[illegible]
	27.4% ... Composite Urban Percent Impervious						Total area in square miles =		0.0428
208I	Land Use Identifier ...	VLDR-F	0	0	0	0	0	0	0
	Land Use Area(ac) ...	74.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Percent Impervious ...	15%	—	—	—	—	—	—	—
	Land Use Char. ...	Urban	—	—	—	—	—	—	—
	Urban Area ...	74.9	—	—	—	—	—	—	—
	100.0% ... Percent Urban						Urban area in square miles =		0.11[illegible]
	15.0% ... Composite Urban Percent Impervious						Total area in square miles =		0.117[illegible]
208J	Land Use Identifier ...	VLDR-F	0	0	0	0	0	0	0
	Land Use Area(ac) ...	51.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Percent Impervious ...	15%	—	—	—	—	—	—	—
	Land Use Char. ...	Urban	—	—	—	—	—	—	—
	Urban Area ...	51.9	—	—	—	—	—	—	—
	100.0% ... Percent Urban						Urban area in square miles =		0.081[illegible]
	15.0% ... Composite Urban Percent Impervious						Total area in square miles =		0.081[illegible]
208K	Land Use Identifier ...	LDR-F	VLDR-F	0	0	0	0	0	0
	Land Use Area(ac) ...	13.3	17.1	0.0	0.0	0.0	0.0	0.0	0.0
	Percent Impervious ...	25%	15%	—	—	—	—	—	—
	Land Use Char. ...	Urban	Urban	—	—	—	—	—	—
	Urban Area ...	13.3	17.1	—	—	—	—	—	—
	100.0% ... Percent Urban						Urban area in square miles =		0.0476
	19.4% ... Composite Urban Percent Impervious						Total area in square miles =		0.0476

TABLE S-5

SUB-BASIN LAND USE AREAS AND URBAN RTIMP ESTIMATES
Future Condition

208L

Land Use Identifier ...	LDR-F	VLDR-F	0	0	0	0	0	0
Land Use Area(ac) ...	4.9	32.7	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	25%	15%	—	—	—	—	—	—
Land Use Char. ...	Urban	Urban	—	—	—	—	—	—
Urban Area ...	4.9	32.7	—	—	—	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.0588
16.3% ... Composite Urban Percent Impervious — Total area in square miles = 0.0588

208M

Land Use Identifier ...	DE	LDR-F	MDR-F	MDR-F	VLDR-F	0	0	0
Land Use Area(ac) ...	0.2	29.1	27.1	5.4	40.3	0.0	0.0	0.0
Percent Impervious ...	0%	25%	45%	45%	15%	—	—	—
Land Use Char. ...	Natural	Urban	Urban	Urban	Urban	—	—	—
Urban Area ...	—	29.1	27.1	5.4	40.3	—	—	—

99.8% ... Percent Urban — Urban area in square miles = 0.1591
27.4% ... Composite Urban Percent Impervious — Total area in square miles = 0.1594

208N

Land Use Identifier ...	DE	LDR-F	MDR-F	MDR-F	MDR-F	MDR-F	0	0
Land Use Area(ac) ...	4.0	0.4	4.1	17.0	0.0	4.7	0.0	0.0
Percent Impervious ...	0%	25%	45%	45%	45%	45%	—	—
Land Use Char. ...	Natural	Urban	Urban	Urban	Urban	Urban	—	—
Urban Area ...	—	0.4	4.1	17.0	0.0	4.7	—	—

86.7% ... Percent Urban — Urban area in square miles = 0.0409
38.8% ... Composite Urban Percent Impervious — Total area in square miles = 0.0471

208O

Land Use Identifier ...	VLDR-F	0	0	0	0	0	0	0
Land Use Area(ac) ...	147.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	15%	—	—	—	—	—	—	—
Land Use Char. ...	Urban	—	—	—	—	—	—	—
Urban Area ...	147.1	—	—	—	—	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.2299
15.0% ... Composite Urban Percent Impervious — Total area in square miles = 0.2299

208P

Land Use Identifier ...	LDR-F	MDR-F	MDR-F	VLDR-F	0	0	0	0
Land Use Area(ac) ...	4.5	18.6	0.7	13.6	0.0	0.0	0.0	0.0
Percent Impervious ...	25%	45%	45%	15%	—	—	—	—
Land Use Char. ...	Urban	Urban	Urban	Urban	—	—	—	—
Urban Area ...	4.5	18.6	0.7	13.6	—	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.0584
31.7% ... Composite Urban Percent Impervious — Total area in square miles = 0.0584

TABLE S-5

SUB-BASIN LAND USE AREAS AND URBAN RTIMP ESTIMATES
Future Condition

208Q

Land Use Identifier ...	DE	LDR-F	MDR-F	MDR-F	MDR-F	VLDR-F	0	0
Land Use Area(ac) ...	5.5	5.5	15.1	2.2	0.2	31.9	0.0	0.0
Percent Impervious ...	0%	25%	45%	45%	45%	15%	—	—
Land Use Char. ...	Natural	Urban	Urban	Urban	Urban	Urban	—	—
Urban Area ...	—	5.5	15.1	2.2	0.2	31.9	—	—

91.0% ... Percent Urban — Urban area in square miles = 0.0857
23.3% ... Composite Urban Percent Impervious — Total area in square miles = 0.0943

208R

Land Use Identifier ...	MDR-F	MDR-F	VLDR-F	0	0	0	0	0
Land Use Area(ac) ...	3.3	0.1	3.3	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	45%	45%	15%	—	—	—	—	—
Land Use Char. ...	Urban	Urban	Urban	—	—	—	—	—
Urban Area ...	3.3	0.1	3.3	—	—	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.01
30.2% ... Composite Urban Percent Impervious — Total area in square miles = 0.0105

208S

Land Use Identifier ...	DE	MDR-F	MDR-F	MDR-F	VLDR-F	0	0	0
Land Use Area(ac) ...	2.8	0.2	15.3	25.4	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	45%	45%	45%	15%	—	—	—
Land Use Char. ...	Natural	Urban	Urban	Urban	Urban	—	—	—
Urban Area ...	—	0.2	15.3	25.4	0.0	—	—	—

93.5% ... Percent Urban — Urban area in square miles = 0.06
42.1% ... Composite Urban Percent Impervious — Total area in square miles = 0.06

208T

Land Use Identifier ...	VLDR-F	0	0	0	0	0	0	0
Land Use Area(ac) ...	84.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	15%	—	—	—	—	—	—	—
Land Use Char. ...	Urban	—	—	—	—	—	—	—
Urban Area ...	84.3	—	—	—	—	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.1318
15.0% ... Composite Urban Percent Impervious — Total area in square miles = 0.131

208U

Land Use Identifier ...	VLDR-F	0	0	0	0	0	0	0
Land Use Area(ac) ...	85.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	15%	—	—	—	—	—	—	—
Land Use Char. ...	Urban	—	—	—	—	—	—	—
Urban Area ...	85.6	—	—	—	—	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.1337
15.0% ... Composite Urban Percent Impervious — Total area in square miles = 0.1337

TABLE S-5

SUB-BASIN LAND USE AREAS AND URBAN RTIMP ESTIMATES
Future Condition

208V

Land Use Identifier ...	MDR-F	VLDR-F	0	0	0	0	0	0
Land Use Area(ac) ...	0.7	17.1	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	45%	15%	—	—	—	—	—	—
Land Use Char. ...	Urban	Urban	—	—	—	—	—	—
Urban Area ...	0.7	17.1	—	—	—	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.0278
16.1% ... Composite Urban Percent Impervious — Total area in square miles = 0.0278

208W

Land Use Identifier ...	MDR-F	VLDR-F	0	0	0	0	0	0
Land Use Area(ac) ...	10.8	21.5	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	45%	15%	—	—	—	—	—	—
Land Use Char. ...	Urban	Urban	—	—	—	—	—	—
Urban Area ...	10.8	21.5	—	—	—	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.0504
25.0% ... Composite Urban Percent Impervious — Total area in square miles = 0.0504

208X

Land Use Identifier ...	DE	MDR-F	MDR-F	MDR-F	VLDR-F	0	0	0
Land Use Area(ac) ...	15.4	0.0	3.5	17.0	12.3	0.0	0.0	0.0
Percent Impervious ...	0%	45%	45%	45%	15%	—	—	—
Land Use Char. ...	Natural	Urban	Urban	Urban	Urban	—	—	—
Urban Area ...	—	0.0	3.5	17.0	12.3	—	—	—

68.0% ... Percent Urban — Urban area in square miles = 0.0513
22.9% ... Composite Urban Percent Impervious — Total area in square miles = 0.0754

209A

Land Use Identifier ...	ND	VLDR-F	0	0	0	0	0	0
Land Use Area(ac) ...	134.8	100.6	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	15%	—	—	—	—	—	—
Land Use Char. ...	Natural	Urban	—	—	—	—	—	—
Urban Area ...	—	100.6	—	—	—	—	—	—

42.7% ... Percent Urban — Urban area in square miles = 0.1572
6.4% ... Composite Urban Percent Impervious — Total area in square miles = 0.3678

209B

Land Use Identifier ...	VLDR-F	0	0	0	0	0	0	0
Land Use Area(ac) ...	53.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	15%	—	—	—	—	—	—	—
Land Use Char. ...	Urban	—	—	—	—	—	—	—
Urban Area ...	53.2	—	—	—	—	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.0831
15.0% ... Composite Urban Percent Impervious — Total area in square miles = 0.0831

TABLE S-5

SUB-BASIN LAND USE AREAS AND URBAN RTIMP ESTIMATES
Future Condition

209C

Land Use Identifier ...	ND	VLDR-F	0	0	0	0	0	0
Land Use Area(ac) ...	5.4	35.5	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	15%	—	—	—	—	—	—
Land Use Char. ...	Natural	Urban	—	—	—	—	—	—
Urban Area ...	—	35.5	—	—	—	—	—	—

86.8% ... Percent Urban — Urban area in square miles = 0.05[illegible]
13.0% ... Composite Urban Percent Impervious — Total area in square miles = 0.0639

209D

Land Use Identifier ...	ND	VLDR-F	0	0	0	0	0	0
Land Use Area(ac) ...	14.2	142.0	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	15%	—	—	—	—	—	—
Land Use Char. ...	Natural	Urban	—	—	—	—	—	—
Urban Area ...	—	142.0	—	—	—	—	—	—

90.9% ... Percent Urban — Urban area in square miles = 0.22[illegible]
13.6% ... Composite Urban Percent Impervious — Total area in square miles = 0.2442

209E

Land Use Identifier ...	VLDR-F	0	0	0	0	0	0	0
Land Use Area(ac) ...	95.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	15%	—	—	—	—	—	—	—
Land Use Char. ...	Urban	—	—	—	—	—	—	—
Urban Area ...	95.4	—	—	—	—	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.14[illegible]
15.0% ... Composite Urban Percent Impervious — Total area in square miles = 0.14[illegible]

209F

Land Use Identifier ...	MDR-F	ND	VLDR-F	0	0	0	0	0
Land Use Area(ac) ...	12.4	79.9	52.2	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	45%	0%	15%	—	—	—	—	—
Land Use Char. ...	Urban	Natural	Urban	—	—	—	—	—
Urban Area ...	12.4	—	52.2	—	—	—	—	—

44.7% ... Percent Urban — Urban area in square miles = 0.1009
9.3% ... Composite Urban Percent Impervious — Total area in square miles = 0.22[illegible]

209G

Land Use Identifier ...	ND	VLDR-F	0	0	0	0	0	0
Land Use Area(ac) ...	0.7	129.8	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	15%	—	—	—	—	—	—
Land Use Char. ...	Natural	Urban	—	—	—	—	—	—
Urban Area ...	—	129.8	—	—	—	—	—	—

99.5% ... Percent Urban — Urban area in square miles = 0.2028
14.9% ... Composite Urban Percent Impervious — Total area in square miles = 0.2038

TABLE S-5

SUB-BASIN LAND USE AREAS AND URBAN RTIMP ESTIMATES
Future Condition

209H

Land Use Identifier ...	ND	VLDR-F	0	0	0	0	0	0
Land Use Area(ac) ...	23.8	29.6	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	15%	—	—	—	—	—	—
Land Use Char. ...	Natural	Urban	—	—	—	—	—	—
Urban Area ...	—	29.6	—	—	—	—	—	—

55.4% ... Percent Urban — Urban area in square miles = 0.0462
8.3% ... Composite Urban Percent Impervious — Total area in square miles = 0.0835

209I

Land Use Identifier ...	ND	VLDR-F	0	0	0	0	0	0
Land Use Area(ac) ...	17.8	98.9	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	15%	—	—	—	—	—	—
Land Use Char. ...	Natural	Urban	—	—	—	—	—	—
Urban Area ...	—	98.9	—	—	—	—	—	—

84.7% ... Percent Urban — Urban area in square miles = 0.1545
12.7% ... Composite Urban Percent Impervious — Total area in square miles = 0.1823

210A

Land Use Identifier ...	DE	LDR-F	LDR-F	MDR-F	VLDR-F	VLDR-F	VLDR-F	VLDR-F
Land Use Area(ac) ...	0.6	0.4	0.2	4.4	26.1	0.6	12.9	33.3
Percent Impervious ...	0%	25%	25%	45%	15%	15%	15%	15%
Land Use Char. ...	Natural	Urban	Urban	Urban	Urban	Urban	Urban	Urban
Urban Area ...	—	0.4	0.2	4.4	26.1	0.6	12.9	33.3

99.2% ... Percent Urban — Urban area in square miles = 0.1218
16.7% ... Composite Urban Percent Impervious — Total area in square miles = 0.1227

210B

Land Use Identifier ...	DE	LDR-F	MDR-F	MDR-F	MDR-F	VLDR-F	VLDR-F	0
Land Use Area(ac) ...	0.3	37.5	0.1	18.3	10.2	0.1	1.8	0.0
Percent Impervious ...	0%	25%	45%	45%	45%	15%	15%	—
Land Use Char. ...	Natural	Urban	Urban	Urban	Urban	Urban	Urban	—
Urban Area ...	—	37.5	0.1	18.3	10.2	0.1	1.8	—

99.5% ... Percent Urban — Urban area in square miles = 0.1062
33.0% ... Composite Urban Percent Impervious — Total area in square miles = 0.1067

210C

Land Use Identifier ...	DE	MDR-F	VLDR-F	0	0	0	0	0
Land Use Area(ac) ...	3.0	5.0	44.2	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	45%	15%	—	—	—	—	—
Land Use Char. ...	Natural	Urban	Urban	—	—	—	—	—
Urban Area ...	—	5.0	44.2	—	—	—	—	—

94.2% ... Percent Urban — Urban area in square miles = 0.0770
17.0% ... Composite Urban Percent Impervious — Total area in square miles = 0.0817

TABLE S-5

SUB-BASIN LAND USE AREAS AND URBAN RTIMP ESTIMATES
Future Condition

210D	Land Use Identifier ...	VLDR-F	0	0	0	0	0	0	0
	Land Use Area(ac) ...	89.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Percent Impervious ...	15%	—	—	—	—	—	—	—
	Land Use Char. ...	Urban	—	—	—	—	—	—	—
	Urban Area ...	89.4	—	—	—	—	—	—	—
	100.0% ... Percent Urban						Urban area in square miles =		0.1397
	15.0% ... Composite Urban Percent Impervious						Total area in square miles =		0.13[illegible]
210E	Land Use Identifier ...	VLDR-F	0	0	0	0	0	0	0
	Land Use Area(ac) ...	17.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Percent Impervious ...	15%	—	—	—	—	—	—	—
	Land Use Char. ...	Urban	—	—	—	—	—	—	—
	Urban Area ...	17.6	—	—	—	—	—	—	—
	100.0% ... Percent Urban						Urban area in square miles =		0.02[illegible]
	15.0% ... Composite Urban Percent Impervious						Total area in square miles =		0.0275
210F	Land Use Identifier ...	VLDR-F	0	0	0	0	0	0	0
	Land Use Area(ac) ...	59.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Percent Impervious ...	15%	—	—	—	—	—	—	—
	Land Use Char. ...	Urban	—	—	—	—	—	—	—
	Urban Area ...	59.3	—	—	—	—	—	—	—
	100.0% ... Percent Urban						Urban area in square miles =		0.09[illegible]
	15.0% ... Composite Urban Percent Impervious						Total area in square miles =		0.09[illegible]
210G	Land Use Identifier ...	VLDR-F	0	0	0	0	0	0	0
	Land Use Area(ac) ...	103.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Percent Impervious ...	15%	—	—	—	—	—	—	—
	Land Use Char. ...	Urban	—	—	—	—	—	—	—
	Urban Area ...	103.4	—	—	—	—	—	—	—
	100.0% ... Percent Urban						Urban area in square miles =		0.161[illegible]
	15.0% ... Composite Urban Percent Impervious						Total area in square miles =		0.16[illegible]
210H	Land Use Identifier ...	VLDR-F	0	0	0	0	0	0	0
	Land Use Area(ac) ...	44.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Percent Impervious ...	15%	—	—	—	—	—	—	—
	Land Use Char. ...	Urban	—	—	—	—	—	—	—
	Urban Area ...	44.6	—	—	—	—	—	—	—
	100.0% ... Percent Urban						Urban area in square miles =		0.0697
	15.0% ... Composite Urban Percent Impervious						Total area in square miles =		0.069[illegible]

TABLE S-5

SUB-BASIN LAND USE AREAS AND URBAN RTIMP ESTIMATES
Future Condition

210I	Land Use Identifier ...	VLDR-F	0	0	0	0	0	0	0
	Land Use Area(ac) ...	31.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Percent Impervious ...	15%	—	—	—	—	—	—	—
	Land Use Char. ...	Urban	—	—	—	—	—	—	—
	Urban Area ...	31.4	—	—	—	—	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.0491
15.0% ... Composite Urban Percent Impervious — Total area in square miles = 0.0491

210J	Land Use Identifier ...	VLDR-F	0	0	0	0	0	0	0
	Land Use Area(ac) ...	66.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Percent Impervious ...	15%	—	—	—	—	—	—	—
	Land Use Char. ...	Urban	—	—	—	—	—	—	—
	Urban Area ...	66.1	—	—	—	—	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.1033
15.0% ... Composite Urban Percent Impervious — Total area in square miles = 0.1033

210K	Land Use Identifier ...	VLDR-F	VLDR-F	0	0	0	0	0	0
	Land Use Area(ac) ...	48.8	0.5	0.0	0.0	0.0	0.0	0.0	0.0
	Percent Impervious ...	15%	15%	—	—	—	—	—	—
	Land Use Char. ...	Urban	Urban	—	—	—	—	—	—
	Urban Area ...	48.8	0.5	—	—	—	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.0771
15.0% ... Composite Urban Percent Impervious — Total area in square miles = 0.0771

210L	Land Use Identifier ...	MDR-F	MDR-F	MDR-F	RW	VLDR-F	0	0	0
	Land Use Area(ac) ...	0.0	2.6	0.0	0.0	85.3	0.0	0.0	0.0
	Percent Impervious ...	45%	45%	45%	90%	15%	—	—	—
	Land Use Char. ...	Urban	Urban	Urban	Urban	Urban	—	—	—
	Urban Area ...	0.0	2.6	0.0	0.0	85.3	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.1374
15.9% ... Composite Urban Percent Impervious — Total area in square miles = 0.1374

210M	Land Use Identifier ...	SCHOOL	VLDR-F	VLDR-F	0	0	0	0	0
	Land Use Area(ac) ...	0.2	103.1	0.6	0.0	0.0	0.0	0.0	0.0
	Percent Impervious ...	25%	15%	15%	—	—	—	—	—
	Land Use Char. ...	Urban	Urban	Urban	—	—	—	—	—
	Urban Area ...	0.2	103.1	0.6	—	—	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.1624
15.0% ... Composite Urban Percent Impervious — Total area in square miles = 0.1624

TABLE S-5

SUB-BASIN LAND USE AREAS AND URBAN RTIMP ESTIMATES
Future Condition

210N

Land Use Identifier ...	DE	MFR-F	SCHOOL	VLDR-F	0	0	0	0
Land Use Area(ac) ...	0.1	0.6	1.4	29.0	0.0	0.0	0.0	0.0
Percent Impervious ...	0%	65%	25%	15%	—	—	—	—
Land Use Char. ...	Natural	Urban	Urban	Urban	—	—	—	—
Urban Area ...	—	0.6	1.4	29.0	—	—	—	—

99.7% ... Percent Urban — Urban area in square miles = 0.048[illegible]
16.4% ... Composite Urban Percent Impervious — Total area in square miles = 0.0485

211A

Land Use Identifier ...	LDR-F	MDR-F	MDR-F	VLDR-F	0	0	0	0
Land Use Area(ac) ...	54.7	6.4	0.0	30.3	0.0	0.0	0.0	0.0
Percent Impervious ...	25%	45%	45%	15%	—	—	—	—
Land Use Char. ...	Urban	Urban	Urban	Urban	—	—	—	—
Urban Area ...	54.7	6.4	0.0	30.3	—	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.14[illegible]
23.1% ... Composite Urban Percent Impervious — Total area in square miles = 0.1429

211B

Land Use Identifier ...	LDR-F	LDR-F	LDR-F	MDR-F	VLDR-F	0	0	0
Land Use Area(ac) ...	0.5	0.2	11.8	7.9	49.0	0.0	0.0	0.0
Percent Impervious ...	25%	25%	25%	45%	15%	—	—	—
Land Use Char. ...	Urban	Urban	Urban	Urban	Urban	—	—	—
Urban Area ...	0.5	0.2	11.8	7.9	49.0	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.108[illegible]
20.2% ... Composite Urban Percent Impervious — Total area in square miles = 0.108[illegible]

211C

Land Use Identifier ...	MDR-F	SCHOOL	0	0	0	0	0	0
Land Use Area(ac) ...	26.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Percent Impervious ...	45%	25%	—	—	—	—	—	—
Land Use Char. ...	Urban	Urban	—	—	—	—	—	—
Urban Area ...	26.7	0.7	—	—	—	—	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.0428
44.5% ... Composite Urban Percent Impervious — Total area in square miles = 0.042[illegible]

211D

Land Use Identifier ...	LDR-F	MDR-F	MFR-F	SCHOOL	VLDR-F	VLDR-F	0	0
Land Use Area(ac) ...	3.3	23.4	5.5	0.2	5.1	7.6	0.0	0.0
Percent Impervious ...	25%	45%	65%	25%	15%	15%	—	—
Land Use Char. ...	Urban	Urban	Urban	Urban	Urban	Urban	—	—
Urban Area ...	3.3	23.4	5.5	0.2	5.1	7.6	—	—

100.0% ... Percent Urban — Urban area in square miles = 0.0705
37.4% ... Composite Urban Percent Impervious — Total area in square miles = 0.0705

Table S-6

Subbasin Weighted DTHETA and Surface Loss Parameters
Future Condition

[1] Sub-basin ID	[2] Log Avg. XKSAT	[3] DTHETA (Dry)	[4] DTHETA (Normal)	[5] PSIF	[6] Percent Valley Area	[7] Percent Hillslope Area	[8] Percent Mountain Area	[9] Percent Urban Area	[10] Adjusted Hillslope Area	[11] Adjusted Mountain Area	[12] Adjusted Valley Area	[13] V,H,M Veg. Cover	[14] Urban Veg. Cover	[15] RTIMP (urban)	[16] RTIMP (rock)	[17] RTIMP (total)	[18] DTHETA (wghtd)	[19] Vegetation Cover (wghtd)	[20] IA (wghtd)
206N	0.27	0.35	0.25	4.65	27.5%	72.5%	0.0%	83.8%	0.0%	0.0%	16.2%	20%	15%	52.7%	0.0%	52.7%	0.27	16%	0.11
207A	0.30	0.35	0.25	4.55	0.0%	14.8%	85.2%	0.0%	14.8%	85.2%	0.0%	30%	15%	0.0%	29.8%	29.8%	0.35	30%	0.24
207B	0.31	0.35	0.25	4.45	0.0%	7.4%	92.6%	0.0%	7.4%	92.6%	0.0%	30%	15%	0.0%	32.4%	32.4%	0.35	30%	0.24
207C	0.21	0.37	0.25	5.30	0.0%	60.9%	39.1%	0.0%	60.9%	39.1%	0.0%	35%	15%	0.0%	13.7%	13.7%	0.37	35%	0.19
207D	0.33	0.35	0.25	4.35	0.0%	0.0%	100.0%	42.0%	0.0%	58.0%	0.0%	30%	15%	6.3%	35.0%	41.3%	0.31	24%	0.18
207E	0.33	0.35	0.25	4.35	0.0%	0.0%	100.0%	62.7%	0.0%	37.3%	0.0%	35%	15%	9.4%	35.0%	44.4%	0.29	22%	0.15
207F	0.32	0.35	0.25	4.40	0.0%	3.8%	96.2%	31.2%	0.0%	68.8%	0.0%	35%	15%	4.7%	33.7%	38.4%	0.32	29%	0.20
207G	0.19	0.38	0.25	5.60	0.0%	76.6%	23.4%	5.8%	70.8%	23.4%	0.0%	29%	15%	0.9%	8.2%	9.1%	0.37	28%	0.17
207H	0.33	0.35	0.25	4.35	0.0%	0.0%	100.0%	78.5%	0.0%	21.5%	0.0%	30%	15%	11.8%	35.0%	46.8%	0.27	18%	0.13
207I	0.33	0.35	0.25	4.40	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	30%	15%	15.0%	35.0%	50.0%	0.25	15%	0.09
207J	0.32	0.35	0.25	4.40	0.0%	3.0%	97.0%	94.7%	0.0%	5.3%	0.0%	32%	15%	14.6%	34.0%	48.6%	0.26	16%	0.10
207K	0.19	0.38	0.25	5.40	0.0%	72.7%	27.3%	83.6%	0.0%	16.4%	0.0%	30%	15%	27.6%	9.6%	37.2%	0.27	17%	0.11
207L	0.15	0.40	0.25	6.00	0.0%	100.0%	0.0%	91.8%	8.2%	0.0%	0.0%	26%	15%	33.3%	0.0%	33.3%	0.26	16%	0.09
207M	0.15	0.40	0.25	6.00	3.0%	97.0%	0.0%	77.5%	19.5%	0.0%	3.0%	32%	15%	23.1%	0.0%	23.1%	0.28	19%	0.11
207N	0.25	0.35	0.25	4.80	26.2%	73.8%	0.0%	97.1%	0.0%	0.0%	2.9%	34%	15%	35.9%	0.0%	35.9%	0.25	16%	0.09
207O	0.19	0.38	0.25	5.60	14.6%	85.4%	0.0%	72.6%	12.8%	0.0%	14.6%	32%	15%	23.5%	0.0%	23.5%	0.29	20%	0.13
208A	0.33	0.35	0.25	4.35	0.0%	0.0%	100.0%	99.1%	0.0%	0.9%	0.0%	30%	15%	14.9%	35.0%	49.9%	0.25	15%	0.09
208B	0.33	0.35	0.25	4.35	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	35%	15%	15.0%	35.0%	50.0%	0.25	15%	0.09
208C	0.33	0.35	0.25	4.35	0.0%	0.0%	100.0%	34.0%	0.0%	66.0%	0.0%	30%	15%	5.1%	35.0%	40.1%	0.32	25%	0.20
208D	0.33	0.35	0.25	4.35	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	35%	15%	15.0%	35.0%	50.0%	0.25	15%	0.09
208E	0.33	0.35	0.25	4.35	0.0%	0.0%	100.0%	98.9%	0.0%	1.1%	0.0%	32%	15%	15.0%	35.0%	50.0%	0.25	15%	0.09
208F	0.33	0.35	0.25	4.35	0.0%	0.0%	100.0%	98.6%	0.0%	1.4%	0.0%	32%	15%	14.9%	35.0%	49.9%	0.25	15%	0.09
208G	0.29	0.35	0.25	4.60	0.0%	20.2%	79.8%	86.1%	0.0%	13.9%	0.0%	28%	15%	26.3%	27.9%	54.2%	0.26	17%	0.11
208H	0.19	0.38	0.25	5.60	0.0%	82.2%	17.8%	62.7%	19.5%	17.8%	0.0%	30%	15%	27.4%	8.0%	35.4%	0.30	21%	0.12
208I	0.33	0.35	0.25	4.35	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	35%	15%	15.0%	35.0%	50.0%	0.25	15%	0.09
208J	0.33	0.35	0.25	4.35	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	35%	15%	15.0%	35.0%	50.0%	0.25	15%	0.09
208K	0.33	0.35	0.25	4.35	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	37%	15%	19.4%	35.0%	54.4%	0.25	15%	0.09
208L	0.33	0.35	0.25	4.40	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	37%	15%	16.3%	35.0%	51.3%	0.25	15%	0.09
208M	0.32	0.35	0.25	4.40	0.0%	3.5%	96.5%	99.8%	0.0%	0.2%	0.0%	37%	15%	27.4%	34.7%	62.0%	0.25	15%	0.09

Table S-6

Subbasin Weighted DTHETA and Surface Loss Parameters
Future Condition

[1] Sub-basin ID	[2] Log Avg. XKSAT	[3] DTHETA (Dry)	[4] DTHETA (Normal)	[5] PSIF	[6] Percent Valley Area	[7] Percent Hillslope Area	[8] Percent Mountain Area	[9] Percent Urban Area	[10] Adjusted Hillslope Area	[11] Adjusted Mountain Area	[12] Adjusted Valley Area	[13] V,H,M Veg. Cover	[14] Urban Veg. Cover	[15] RTIMP (urban)	[16] RTIMP (rock)	[17] RTIMP (total)	[18] DTHETA (wghtd)	[19] Vegetation Cover (wghtd)	[20] IA (wghtd)
208N	0.14	0.39	0.23	6.20	0.0%	99.4%	0.6%	86.7%	12.7%	0.6%	0.0%	28%	15%	38.8%	23.7%	62.5%	0.25	17%	0.09
208O	0.29	0.35	0.25	4.60	0.0%	15.1%	84.9%	100.0%	0.0%	0.0%	0.0%	35%	15%	15.0%	33.5%	48.5%	0.25	15%	0.09
208P	0.17	0.39	0.25	5.70	0.0%	74.3%	25.7%	100.0%	0.0%	0.0%	0.0%	28%	15%	31.7%	27.6%	59.3%	0.25	15%	0.08
208Q	0.23	0.36	0.25	5.00	0.0%	40.1%	59.9%	91.0%	0.0%	9.0%	0.0%	28%	15%	23.3%	31.0%	54.3%	0.26	16%	0.10
208R	0.14	0.39	0.23	6.20	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	28%	15%	30.2%	25.0%	55.2%	0.23	15%	0.08
208S	0.14	0.39	0.23	6.20	0.0%	100.0%	0.0%	93.5%	6.5%	0.0%	0.0%	28%	15%	42.1%	25.0%	67.1%	0.24	16%	0.08
208T	0.21	0.37	0.25	5.20	0.0%	52.0%	48.0%	100.0%	0.0%	0.0%	0.0%	35%	15%	15.0%	29.8%	44.8%	0.25	15%	0.09
208U	0.20	0.37	0.25	5.30	0.0%	58.1%	41.9%	100.0%	0.0%	0.0%	0.0%	35%	15%	15.0%	29.2%	44.2%	0.25	15%	0.09
208V	0.14	0.38	0.21	6.40	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	28%	15%	16.1%	25.0%	41.1%	0.21	15%	0.09
208W	0.15	0.39	0.23	6.20	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	32%	15%	25.0%	17.7%	42.7%	0.23	15%	0.09
208X	0.19	0.38	0.25	5.60	12.6%	87.4%	0.0%	68.0%	19.4%	0.0%	12.6%	32%	15%	22.9%	16.5%	39.4%	0.29	20%	0.13
209A	0.33	0.35	0.25	4.35	0.0%	0.0%	100.0%	42.7%	0.0%	57.3%	0.0%	30%	15%	6.4%	35.0%	41.4%	0.31	24%	0.18
209B	0.33	0.35	0.25	4.35	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	30%	15%	15.0%	35.0%	50.0%	0.25	15%	0.09
209C	0.33	0.35	0.25	4.35	0.0%	0.0%	100.0%	86.8%	0.0%	13.2%	0.0%	30%	15%	13.0%	35.0%	48.0%	0.26	17%	0.11
209D	0.33	0.35	0.25	4.35	0.0%	0.0%	100.0%	90.9%	0.0%	9.1%	0.0%	35%	15%	13.6%	35.0%	48.6%	0.26	17%	0.11
209E	0.33	0.35	0.25	4.35	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	30%	15%	15.0%	35.0%	50.0%	0.25	15%	0.09
209F	0.31	0.35	0.25	4.50	0.0%	11.6%	88.4%	44.7%	0.0%	55.3%	0.0%	35%	15%	9.3%	30.9%	40.2%	0.31	26%	0.18
209G	0.33	0.35	0.25	4.35	0.0%	0.0%	100.0%	99.5%	0.0%	0.5%	0.0%	30%	15%	14.9%	35.0%	49.9%	0.25	15%	0.09
209H	0.19	0.38	0.25	5.60	0.0%	73.1%	26.9%	55.4%	17.7%	26.9%	0.0%	35%	15%	8.3%	18.3%	26.6%	0.31	24%	0.15
209I	0.16	0.40	0.25	6.00	0.0%	97.6%	2.4%	84.7%	12.9%	2.4%	0.0%	22%	15%	12.7%	5.3%	18.0%	0.27	16%	0.10
210A	0.23	0.36	0.25	5.00	25.1%	74.9%	0.0%	99.2%	0.0%	0.0%	0.8%	26%	15%	16.7%	0.0%	16.7%	0.25	15%	0.09
210B	0.16	0.39	0.25	5.80	0.0%	100.0%	0.0%	99.5%	0.5%	0.0%	0.0%	30%	15%	33.0%	4.2%	37.1%	0.25	15%	0.08
210C	0.26	0.35	0.25	4.80	32.1%	67.9%	0.0%	94.2%	0.0%	0.0%	5.8%	32%	15%	17.0%	5.3%	22.3%	0.26	16%	0.11
210D	0.17	0.39	0.25	5.80	0.0%	66.9%	33.1%	100.0%	0.0%	0.0%	0.0%	26%	15%	15.0%	18.7%	33.7%	0.25	15%	0.09
210E	0.11	0.36	0.17	6.80	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	32%	15%	15.0%	0.0%	15.0%	0.17	15%	0.09
210F	0.32	0.35	0.25	4.40	0.0%	1.6%	98.4%	100.0%	0.0%	0.0%	0.0%	30%	15%	15.0%	34.4%	49.4%	0.25	15%	0.09
210G	0.20	0.37	0.25	5.30	0.0%	30.8%	69.2%	100.0%	0.0%	0.0%	0.0%	28%	15%	15.0%	24.2%	39.2%	0.25	15%	0.09
210H	0.15	0.39	0.23	6.20	0.0%	85.4%	14.6%	100.0%	0.0%	0.0%	0.0%	32%	15%	15.0%	6.7%	21.7%	0.23	15%	0.09
210I	0.09	0.32	0.15	7.60	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	28%	15%	15.0%	0.0%	15.0%	0.15	15%	0.09

Table S-6

Subbasin Weighted DTHETA and Surface Loss Parameters
Future Condition

[1] Sub-basin ID	[2] Log Avg. XKSAT	[3] DTHETA (Dry)	[4] DTHETA (Normal)	[5] PSIF	[6] Percent Valley Area	[7] Percent Hillslope Area	[8] Percent Mountain Area	[9] Percent Urban Area	[10] Adjusted Hillslope Area	[11] Adjusted Mountain Area	[12] Adjusted Valley Area	[13] V,H,M Veg. Cover	[14] Urban Veg. Cover	[15] RTIMP (urban)	[16] RTIMP (rock)	[17] RTIMP (total)	[18] DTHETA (wghtd)	[19] Vegetation Cover (wghtd)	[20] IA (wghtd)
210J	0.12	0.37	0.19	6.60	0.9%	99.1%	0.0%	100.0%	0.0%	0.0%	0.0%	32%	15%	15.0%	0.0%	15.0%	0.19	15%	0.09
210K	0.12	0.37	0.19	6.60	13.1%	86.9%	0.0%	100.0%	0.0%	0.0%	0.0%	28%	15%	15.0%	0.0%	15.0%	0.19	15%	0.09
210L	0.22	0.37	0.25	5.20	15.5%	84.5%	0.0%	100.0%	0.0%	0.0%	0.0%	34%	15%	15.9%	0.0%	15.9%	0.25	15%	0.09
210M	0.16	0.39	0.25	5.80	15.8%	84.2%	0.0%	100.0%	0.0%	0.0%	0.0%	29%	15%	15.0%	0.0%	15.0%	0.25	15%	0.09
210N	0.38	0.35	0.25	4.10	56.5%	43.5%	0.0%	99.7%	0.0%	0.0%	0.3%	30%	15%	16.4%	0.0%	16.4%	0.25	15%	0.09
211A	0.17	0.39	0.25	5.70	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	32%	15%	23.1%	0.0%	23.1%	0.25	15%	0.09
211B	0.17	0.39	0.25	5.80	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	32%	15%	20.2%	0.0%	20.2%	0.25	15%	0.09
211C	0.17	0.39	0.25	5.70	9.1%	90.9%	0.0%	100.0%	0.0%	0.0%	0.0%	27%	15%	44.5%	0.0%	44.5%	0.25	15%	0.08
211D	0.44	0.35	0.25	3.85	55.6%	44.4%	0.0%	100.0%	0.0%	0.0%	0.0%	27%	15%	37.4%	0.0%	37.4%	0.25	15%	0.08
211E	0.22	0.36	0.25	5.10	22.7%	77.3%	0.0%	100.0%	0.0%	0.0%	0.0%	20%	15%	42.2%	0.0%	42.2%	0.25	15%	0.08
211F	0.34	0.35	0.25	4.30	40.9%	59.1%	0.0%	96.6%	0.0%	0.0%	3.4%	20%	15%	62.8%	0.0%	62.8%	0.25	15%	0.08
211G	0.17	0.39	0.25	5.70	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	30%	15%	90.0%	0.0%	90.0%	0.25	15%	0.06
211H	0.15	0.40	0.25	6.00	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	26%	15%	17.9%	0.0%	17.9%	0.25	15%	0.09
211I	0.17	0.39	0.25	5.70	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	24%	15%	45.0%	0.0%	45.0%	0.25	15%	0.08
211J	0.15	0.39	0.23	6.20	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	27%	15%	39.2%	0.0%	39.2%	0.23	15%	0.08
211K	0.15	0.40	0.25	6.00	22.4%	77.6%	0.0%	83.6%	0.0%	0.0%	16.4%	27%	15%	31.5%	0.0%	31.5%	0.27	17%	0.13
211L	0.33	0.35	0.25	4.35	43.6%	56.4%	0.0%	85.6%	0.0%	0.0%	14.4%	20%	15%	42.4%	0.0%	42.4%	0.26	16%	0.11
211M	0.17	0.39	0.25	5.70	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	31%	15%	50.0%	0.0%	50.0%	0.25	15%	0.07
211N	0.17	0.39	0.25	5.70	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	27%	15%	56.6%	0.0%	56.6%	0.25	15%	0.07
211O	0.17	0.39	0.25	5.70	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	27%	15%	45.3%	0.0%	45.3%	0.25	15%	0.08
211P	0.10	0.35	0.15	7.00	3.3%	96.7%	0.0%	100.0%	0.0%	0.0%	0.0%	20%	15%	45.0%	0.0%	45.0%	0.15	15%	0.08
211Q	0.17	0.39	0.25	5.70	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	29%	15%	30.0%	0.0%	30.0%	0.25	15%	0.08
211R	0.17	0.39	0.25	5.70	0.0%	100.0%	0.0%	99.9%	0.1%	0.0%	0.0%	29%	15%	37.8%	0.0%	37.8%	0.25	15%	0.08
211S	0.17	0.39	0.25	5.70	0.0%	100.0%	0.0%	57.4%	42.6%	0.0%	0.0%	29%	15%	30.1%	0.0%	30.1%	0.31	21%	0.11
211T	0.17	0.39	0.25	5.70	0.0%	100.0%	0.0%	98.1%	1.9%	0.0%	0.0%	28%	15%	64.2%	0.0%	64.2%	0.25	15%	0.07
211U	0.17	0.39	0.25	5.70	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	20%	15%	66.0%	0.0%	66.0%	0.25	15%	0.07
211V	0.17	0.39	0.25	5.80	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	30%	15%	90.0%	0.0%	90.0%	0.25	15%	0.06
211W	0.17	0.39	0.25	5.70	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	30%	15%	73.7%	0.0%	73.7%	0.25	15%	0.06
211X	0.25	0.35	0.25	4.90	26.0%	74.0%	0.0%	87.3%	0.0%	0.0%	12.7%	20%	15%	56.6%	0.0%	56.6%	0.26	16%	0.10

Table S-9

Summary of Future Condition Subbasin Parameters

[1] Subbasin ID	[2] Area (sm)	[3] Kb	[4] Slope (ft/mi)	[5] IA (in)	[6] DTHETA	[7] PSIF (in)	[8] XKSAT (in/hr)	[9] RTIMP (%)	[10] Time Area Curve	[11] Total Basin Area (sm)
210K	0.07706	0.03	207	0.09	0.19	6.60	0.13	15.00	Urban	
210L	0.13741	0.03	251	0.09	0.25	5.20	0.23	15.90	Urban	
210M	0.16239	0.03	232	0.09	0.25	5.80	0.17	15.02	Urban	
210N	0.04852	0.03	178	0.09	0.25	4.10	0.40	16.38	Urban	1.38000
211A	0.14294	0.03	248	0.09	0.25	5.70	0.18	23.09	Urban	
211B	0.10855	0.03	244	0.09	0.25	5.80	0.18	20.22	Urban	
211C	0.04277	0.03	154	0.08	0.25	5.70	0.18	44.48	Urban	
211D	0.07054	0.03	115	0.08	0.25	3.85	0.46	37.42	Urban	
211E	0.15557	0.03	118	0.08	0.25	5.10	0.24	42.21	Urban	
211F	0.11280	0.03	134	0.08	0.25	4.30	0.36	62.81	Urban	
211G	0.00759	0.04	190	0.06	0.25	5.70	0.18	90.00	Urban	
211H	0.07345	0.03	289	0.09	0.25	6.00	0.16	17.93	Urban	
211I	0.04077	0.03	257	0.08	0.25	5.70	0.18	45.00	Urban	
211J	0.01480	0.03	166	0.08	0.23	6.20	0.16	39.19	Urban	
211K	0.10197	0.03	157	0.13	0.27	6.00	0.16	31.48	Urban	
211L	0.09575	0.03	181	0.11	0.26	4.35	0.36	42.40	Urban	
211M	0.08133	0.03	266	0.07	0.25	5.70	0.18	50.05	Urban	
211N	0.02038	0.03	235	0.07	0.25	5.70	0.18	56.58	Urban	
211O	0.04119	0.03	257	0.08	0.25	5.70	0.18	45.31	Urban	
211P	0.03347	0.03	192	0.08	0.15	7.00	0.11	45.00	Urban	
211Q	0.02107	0.03	295	0.08	0.25	5.70	0.18	30.04	Urban	
211R	0.08438	0.03	271	0.08	0.25	5.70	0.18	37.77	Urban	
211S	0.05041	0.07	272	0.11	0.31	5.70	0.19	30.06	Urban	
211T	0.06637	0.03	250	0.07	0.25	5.70	0.18	64.25	Urban	
211U	0.02744	0.03	214	0.07	0.25	5.70	0.18	65.99	Urban	
211V	0.00490	0.04	212	0.06	0.25	5.80	0.18	90.00	Urban	
211W	0.02969	0.03	173	0.06	0.25	5.70	0.18	73.65	Urban	
211X	0.21393	0.03	111	0.10	0.26	4.90	0.26	56.64	Urban	
211Y	0.08928	0.04	147	0.09	0.21	6.60	0.13	50.06	Urban	
211Z	0.08254	0.04	147	0.14	0.27	4.50	0.34	34.43	Urban	
211AA	0.03399	0.03	85	0.08	0.19	6.60	0.13	39.38	Urban	
211AB	0.03974	0.03	321	0.07	0.17	6.80	0.12	54.72	Urban	
211AC	0.02745	0.03	82	0.08	0.15	8.40	0.07	44.76	Urban	
211AD	0.04132	0.03	280	0.08	0.15	8.00	0.08	46.16	Urban	
211AE	0.03443	0.04	153	0.12	0.24	6.40	0.15	38.15	Urban	
211AF	0.05270	0.03	292	0.07	0.25	5.80	0.17	52.43	Urban	2.04349

Total Watershed Are **16.50481**
(excluding non-contributing area)

Table S-9

Summary of Future Condition Subbasin Parameters

[1] Subbasin ID	[2] Area (sm)	[3] Kb	[4] Slope (ft/mi)	[5] IA (in)	[6] DTHETA	[7] PSIF (in)	[8] XKSAT (in/hr)	[9] RTIMP (%)	[10] Time Area Curve	[11] Total Basin Area (sm)
208E	0.06205	0.03	306	0.09	0.25	4.35	0.35	50.00	Urban	
208F	0.06910	0.03	293	0.09	0.25	4.35	0.35	49.92	Urban	
208G	0.12941	0.04	299	0.11	0.26	4.60	0.31	54.19	Urban	
208H	0.04276	0.07	283	0.12	0.30	5.60	0.21	35.43	Urban	
208I	0.11709	0.03	363	0.09	0.25	4.35	0.35	50.00	Urban	
208J	0.08107	0.03	353	0.09	0.25	4.35	0.35	50.00	Urban	
208K	0.04756	0.03	317	0.09	0.25	4.35	0.35	54.38	Urban	
208L	0.05884	0.03	334	0.09	0.25	4.40	0.35	51.31	Urban	
208M	0.15941	0.03	321	0.09	0.25	4.40	0.34	62.04	Urban	
208N	0.04713	0.04	160	0.09	0.25	6.20	0.15	62.49	Urban	
208O	0.22988	0.03	347	0.09	0.25	4.60	0.31	48.49	Urban	
208P	0.05837	0.03	312	0.08	0.25	5.70	0.18	59.29	Urban	
208Q	0.09426	0.04	324	0.10	0.26	5.00	0.25	54.26	Urban	
208R	0.01047	0.03	327	0.08	0.23	6.20	0.15	55.16	Urban	
208S	0.06825	0.03	234	0.08	0.24	6.20	0.15	67.07	Urban	
208T	0.13175	0.03	340	0.09	0.25	5.20	0.22	44.80	Urban	
208U	0.13368	0.03	360	0.09	0.25	5.30	0.21	44.19	Urban	
208V	0.02781	0.03	319	0.09	0.21	6.40	0.15	41.15	Urban	
208W	0.05043	0.03	288	0.09	0.23	6.20	0.16	42.74	Urban	
208X	0.07543	0.05	223	0.13	0.29	5.60	0.21	39.42	Urban	2.00121
209A	0.36779	0.08	367	0.18	0.31	4.35	0.38	41.41	HEC-1	
209B	0.08313	0.03	403	0.09	0.25	4.35	0.35	50.00	Urban	
209C	0.06387	0.05	342	0.11	0.26	4.35	0.36	48.03	Urban	
209D	0.24418	0.04	354	0.11	0.26	4.35	0.36	48.63	Urban	
209E	0.14899	0.03	341	0.09	0.25	4.35	0.35	50.00	Urban	
209F	0.22574	0.09	332	0.18	0.31	4.50	0.36	40.21	HEC-1	
209G	0.20380	0.03	306	0.09	0.25	4.35	0.35	49.93	Urban	
209H	0.08348	0.07	343	0.15	0.31	5.60	0.22	26.57	Urban	
209I	0.18233	0.04	347	0.10	0.27	6.00	0.17	17.98	Urban	1.60331
210A	0.12274	0.03	233	0.09	0.25	5.00	0.24	16.65	Urban	
210B	0.10672	0.03	251	0.08	0.25	5.80	0.17	37.15	Urban	
210C	0.08171	0.03	198	0.11	0.26	4.80	0.28	22.29	Urban	
210D	0.13967	0.03	325	0.09	0.25	5.80	0.18	33.66	Urban	
210E	0.02753	0.03	151	0.09	0.17	6.80	0.12	15.00	Urban	
210F	0.09263	0.03	349	0.09	0.25	4.40	0.34	49.44	Urban	
210G	0.16152	0.03	333	0.09	0.25	5.30	0.22	39.22	Urban	
210H	0.06974	0.03	340	0.09	0.23	6.20	0.16	21.74	Urban	
210I	0.04910	0.03	250	0.09	0.15	7.60	0.09	15.00	Urban	
210J	0.10328	0.03	187	0.09	0.19	6.60	0.13	15.00	Urban	

Table S-9

Summary of Future Condition Subbasin Parameters

[1] Subbasin ID	[2] Area (sm)	[3] Kb	[4] Slope (ft/mi)	[5] IA (in)	[6] DTHETA	[7] PSIF (in)	[8] XKSAT (in/hr)	[9] RTIMP (%)	[10] Time Area Curve	[11] Total Basin Area (sm)
205I	0.35388	0.11	326	0.20	0.37	5.20	0.28	15.18	Natural	
205J	0.36947	0.08	243	0.21	0.35	4.90	0.30	3.48	Natural	
205K	0.24538	0.10	249	0.16	0.38	5.60	0.22	1.54	Natural	
205L	0.11764	0.09	284	0.19	0.36	5.00	0.29	0.00	Natural	
205M	0.13853	0.05	230	0.15	0.31	5.40	0.22	22.35	Urban	
205N	0.15606	0.10	245	0.15	0.39	5.70	0.21	0.80	HEC-1	2.91240
206A	0.12778	0.04	256	0.12	0.28	5.30	0.23	33.34	Urban	
206B	0.09522	0.03	139	0.10	0.26	5.20	0.23	41.42	Urban	
206C	0.02378	0.04	138	0.11	0.26	4.35	0.36	28.55	Urban	
206D	0.06165	0.03	236	0.08	0.25	5.70	0.18	43.01	Urban	
206E	0.02274	0.03	175	0.09	0.25	4.30	0.36	25.75	Urban	
206F	0.15713	0.03	217	0.09	0.25	4.60	0.30	24.97	Urban	
206G	0.08946	0.03	132	0.11	0.26	5.20	0.23	29.86	Urban	
206H	0.05895	0.03	183	0.08	0.25	5.70	0.18	36.29	Urban	
206I	0.02083	0.03	286	0.08	0.25	5.70	0.18	34.78	Urban	
206J	0.05990	0.03	214	0.08	0.25	5.70	0.18	44.51	Urban	
206K	0.05577	0.03	255	0.09	0.25	5.70	0.18	25.80	Urban	
206L	0.05951	0.03	231	0.09	0.25	5.80	0.18	25.01	Urban	
206M	0.05958	0.03	166	0.08	0.25	5.20	0.23	46.18	Urban	
206N	0.15176	0.03	120	0.11	0.27	4.65	0.29	52.66	Urban	1.04406
207A	0.25609	0.13	351	0.24	0.35	4.55	0.37	29.81	Natural	
207B	0.20823	0.13	359	0.24	0.35	4.45	0.38	32.42	Natural	
207C	0.17298	0.11	297	0.19	0.37	5.30	0.26	13.69	Natural	
207D	0.19708	0.09	373	0.18	0.31	4.35	0.38	41.30	HEC-1	
207E	0.15651	0.07	315	0.15	0.29	4.35	0.38	44.41	Urban	
207F	0.12613	0.11	296	0.20	0.32	4.40	0.39	38.35	HEC-1	
207G	0.23634	0.10	198	0.17	0.37	5.60	0.23	9.10	HEC-1	
207H	0.12447	0.05	371	0.13	0.27	4.35	0.36	46.78	Urban	
207I	0.07294	0.03	320	0.09	0.25	4.40	0.35	50.00	Urban	
207J	0.09277	0.04	248	0.10	0.26	4.40	0.34	48.61	Urban	
207K	0.12955	0.05	294	0.11	0.27	5.40	0.21	37.19	Urban	
207L	0.08040	0.04	236	0.09	0.26	6.00	0.16	33.25	Urban	
207M	0.11594	0.04	295	0.11	0.28	6.00	0.17	23.09	Urban	
207N	0.04918	0.03	190	0.09	0.25	4.80	0.27	35.87	Urban	
207O	0.13051	0.04	275	0.13	0.29	5.60	0.21	23.47	Urban	2.14911
208A	0.13859	0.03	366	0.09	0.25	4.35	0.35	49.86	Urban	
208B	0.02690	0.03	325	0.09	0.25	4.35	0.35	50.00	Urban	
208C	0.06644	0.11	387	0.20	0.32	4.35	0.38	40.11	HEC-1	
208D	0.07452	0.03	327	0.09	0.25	4.35	0.35	50.00	Urban	

APPENDIX D

Single basin HEC-1 output and hydrograph comparison plots

```
1*************************************                                    *************************************
*                                   *                                    *                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*                                    *   U.S. ARMY CORPS OF ENGINEERS    *
*              MAY   1991           *                                    *   HYDROLOGIC ENGINEERING CENTER   *
*           VERSION 4.0.1E          *                                    *         609 SECOND STREET         *
*                                   *                                    *      DAVIS, CALIFORNIA 95616      *
*  RUN DATE  10/14/96  TIME  11:31:17*                                    *          (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       Fountain Hills ADMP
            2           ID       Single Basin Model Developed for Basin 207 (Dam 6- Aspen Dam)
            3           ID       March 25, 1996                                        FN:  S207-6.IH1
            4           IT      5                    116
            5           IO      5

            6           KK    S207
            7           KM       BASIN S207
            8           KM       THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
            9           KM       L=      3.9  Lca=      2.2   S=  464.7  Kn= .038  LAG=  38.3
           10           KM       PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
           11           BA    2.15
           12           IN      15
           13           KM       RAINFALL DEPTH OF 3.27 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
           14           KM       AN AREAL REDUCTION COEFFICIENT OF .979 WAS USED
           15           PB    3.25
           16           KM       THE FOLLOWING PC RECORD USED A 6-HOUR RAINFALL WITH PATTERN NO. 1.85
           17           PC   .000    .009    .016    .025    .034    .042    .051    .059    .067    .076
           18           PC   .087    .100    .120    .159    .246    .440    .715    .848    .905    .940
           19           PC   .952    .964    .976    .988   1.000
           20           LG    .17     .31    4.90     .29   31.55
           21           UI   189.    273.    681.   1079.   1350.   1645.   2155.   1382.   1135.   1002.
           22           UI   881.    763.    641.    518.    452.    411.    331.    263.    231.    207.
           23           UI   163.    145.    124.     92.     92.     92.     47.     36.     36.     36.
           24           UI    36.     36.     36.     36.     36.      0.      0.      0.      0.      0.
           25           UI     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
           26           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         *
*                                   *                                    *      DAVIS, CALIFORNIA 95616      *
*  RUN DATE  10/14/96  TIME  11:31:17*                                    *          (916) 551-1748           *
*                                   *                                    *                                   *
*************************************                                    *************************************
```


```
                                Fountain Hills ADMP
                                Single Basin Model Developed for Basin 207 (Dam 6- Aspen Dam)
                                March 25, 1996                                        FN:  S207-6.IH1

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

     IT          HYDROGRAPH TIME DATA
```

```
                NMIN          5  MINUTES IN COMPUTATION INTERVAL
               IDATE      1   0  STARTING DATE
               ITIME       0000  STARTING TIME
                  NQ        116  NUMBER OF HYDROGRAPH ORDINATES
              NDDATE      1   0  ENDING DATE
              NDTIME       0935  ENDING TIME
               ICENT         19  CENTURY MARK

          COMPUTATION INTERVAL    0.08 HOURS
               TOTAL TIME BASE    9.58 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
1
                                        RUNOFF SUMMARY
                                   FLOW IN CUBIC FEET PER SECOND
                                TIME IN HOURS,  AREA IN SQUARE MILES

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

     HYDROGRAPH AT
+                       S207    2225.   4.42          455.         288.         288.      2.15

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

```
1*************************************                    *************************************
*                                   *                    *                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*                    *   U.S. ARMY CORPS OF ENGINEERS    *
*             MAY   1991            *                    *   HYDROLOGIC ENGINEERING CENTER   *
*           VERSION 4.0.1E          *                    *         609 SECOND STREET         *
*                                   *                    *      DAVIS, CALIFORNIA 95616      *
*  RUN DATE  10/14/96  TIME  11:31:30*                    *          (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        Fountain Hills ADMP
  2           ID        Single Basin Model Developed for Basin 207 (Dam 6- Aspen Dam)
  3           ID        March 25, 1996                                        FN: S207-24.IH1
  4           IT       5                    300
  5           IO       5
  6           IN      15
              *

  7           KK    S207
  8           BA    2.15
  9           KM        BASIN S207
 10           KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 11           KM        L=      3.9  Lca=      2.2   S=  464.7  Kn= .038  LAG=  38.3
 12           KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 13           PB     4.1
              *
              * The following PC records are a 24-hour SCS Type II rainfall distribution.
 14           PC   0.000   0.002   0.005   0.008   0.011   0.013   0.016   0.019   0.022   0.025
 15           PC   0.028   0.032   0.035   0.038   0.041   0.044   0.048   0.053   0.056   0.060
 16           PC   0.063   0.067   0.071   0.075   0.080   0.084   0.089   0.093   0.098   0.103
 17           PC   0.109   0.114   0.120   0.127   0.133   0.140   0.147   0.155   0.163   0.172
 18           PC   0.181   0.192   0.204   0.220   0.235   0.259   0.283   0.473   0.663   0.699
 19           PC   0.735   0.754   0.772   0.785   0.799   0.810   0.820   0.829   0.838   0.846
 20           PC   0.854   0.861   0.868   0.874   0.880   0.885   0.891   0.900   0.902   0.910
 21           PC   0.912   0.920   0.921   0.926   0.929   0.930   0.937   0.941   0.945   0.950
 22           PC   0.952   0.957   0.959   0.962   0.965   0.970   0.972   0.973   0.978   0.981
 23           PC   0.984   0.987   0.989   0.992   0.995   0.998   1.000
 24           LG     .17     .31    4.90     .29   31.55
 25           UI    189.    273.    681.   1079.   1350.   1645.   2155.   1382.   1135.   1002.
 26           UI    881.    763.    641.    518.    452.    411.    331.    263.    231.    207.
 27           UI    163.    145.    124.     92.     92.     92.     47.     36.     36.     36.
 28           UI     36.     36.     36.     36.     36.      0.      0.      0.      0.      0.
 29           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 30           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         *
*                                   *                    *      DAVIS, CALIFORNIA 95616      *
*  RUN DATE  10/14/96  TIME  11:31:30*                    *          (916) 551-1748           *
*                                   *                    *                                   *
*************************************                    *************************************
```


Fountain Hills ADMP
Single Basin Model Developed for Basin 207 (Dam 6- Aspen Dam)
March 25, 1996 FN: S207-24.IH1

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

    IT          HYDROGRAPH TIME DATA
                       NMIN          5  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1   0  STARTING DATE
                      ITIME       0000  STARTING TIME
                         NQ        300  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2   0  ENDING DATE
                     NDTIME       0055  ENDING TIME
                     ICENT         19  CENTURY MARK

                  COMPUTATION INTERVAL    0.08 HOURS
                       TOTAL TIME BASE   24.92 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT
1
                                                RUNOFF SUMMARY
                                         FLOW IN CUBIC FEET PER SECOND
                                       TIME IN HOURS,  AREA IN SQUARE MILES

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

         HYDROGRAPH AT
+                          S207    2012.   12.25        404.         123.         119.      2.15


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

```
1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*              MAY   1991           *
*            VERSION 4.0.1E         *
*                                   *
*  RUN DATE  10/14/96  TIME  11:31:44*
*                                   *
*************************************
```

```
*************************************
*                                   *
*   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        Fountain Hills ADMP
             2          ID        Single Basin Model Developed for Basin 208 (Dam 11- N. Heights Dam)
             3          ID        March 25, 1996                                        FN:  S208-6.IH1
             4          IT       5                    116
             5          IO       5

             6          KK    S208
             7          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
             8          KM        L=      3.0  Lca=      1.6   S=  488.9  Kn= .022  LAG=  17.7
             9          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
            10          BA    2.00
            11          IN      15
            12          KM        RAINFALL DEPTH OF 3.28 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
            13          KM        AN AREAL REDUCTION COEFFICIENT OF .980 WAS USED
            14          PB    3.22
            15          KM        THE FOLLOWING PC RECORD USED A 6-HOUR RAINFALL WITH PATTERN NO. 1.80
            16          PC   .000    .009    .016    .025    .034    .042    .051    .059    .067    .076
            17          PC   .087    .100    .120    .158    .245    .437    .721    .851    .906    .940
            18          PC   .952    .965    .977    .989   1.000
            19          LG    .10     .25    4.80     .28   50.48
            20          UI   513.   1937.   3377.   3020.   1966.   1434.    971.    720.    461.    339.
            21          UI   233.    186.     85.     73.     73.     73.      0.      0.      0.      0.
            22          UI     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            23          ZZ
```


```
1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*              MAY   1991           *
*            VERSION 4.0.1E         *
*                                   *
*  RUN DATE  10/14/96  TIME  11:31:44*
*                                   *
*************************************
```

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


```
                          Fountain Hills ADMP
                          Single Basin Model Developed for Basin 208 (Dam 11- N. Heights Dam)
                          March 25, 1996                                        FN:  S208-6.IH1

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

    IT          HYDROGRAPH TIME DATA
                       NMIN          5  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1   0  STARTING DATE
                      ITIME       0000  STARTING TIME
```

```
                    NQ        116  NUMBER OF HYDROGRAPH ORDINATES
                NDDATE      1   0  ENDING DATE
                NDTIME       0935  ENDING TIME
                ICENT          19  CENTURY MARK

            COMPUTATION INTERVAL    0.08 HOURS
                TOTAL TIME BASE     9.58 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
1
                                          RUNOFF SUMMARY
                                     FLOW IN CUBIC FEET PER SECOND
                                   TIME IN HOURS,  AREA IN SQUARE MILES

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

      HYDROGRAPH AT
+                       S208     3241.   4.08         510.        321.         321.      2.00


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

```
1*************************************                                    *************************************
 *                                   *                                    *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                *   U.S. ARMY CORPS OF ENGINEERS    *
 *              MAY   1991           *                                    *   HYDROLOGIC ENGINEERING CENTER   *
 *           VERSION 4.0.1E          *                                    *         609 SECOND STREET         *
 *                                   *                                    *      DAVIS, CALIFORNIA 95616      *
 *  RUN DATE  10/14/96  TIME  11:32:01 *                                  *          (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        FOUNTAIN HILLS ADMP - Project No. 63
             2          ID        Future Condition Model                          File:   S208-24.IH1
             3          ID        100-Year,24-Hour Storm, S-Graph                 Date:  03/26/96 CCC
             4          ID
                        *
             5          IT       5                    600
             6          IO       5
                        *DIAGRAM

             7          KK    S208
             8          KM        BASIN S208
             9          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
            10          KM        L=      3.0  Lca=      1.6   S=  488.9  Kn= .022  LAG=  17.7
            11          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
            12          BA    2.00
            13          IN      30
            14          KM        RAINFALL DEPTH OF 4.09 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
            15          KM        AN AREAL REDUCTION COEFFICIENT OF 1.000 WAS USED
            16          PB    4.09
            17          KM        THE FOLLOWING PC RECORD USED A 24-HOUR SCS TYPE II RAINFALL
            18          PC    .000    .005    .011    .016    .022    .028    .035    .041    .048    .056
            19          PC    .063    .071    .080    .089    .098    .109    .120    .133    .147    .163
            20          PC    .181    .204    .235    .283    .663    .735    .772    .799    .820    .838
            21          PC    .854    .868    .880    .891    .902    .912    .921    .929    .937    .945
            22          PC    .952    .959    .965    .972    .978    .984    .989    .995   1.000
            23          LG     .10     .25    4.80     .28   50.48
            24          UI    513.   1937.   3377.   3020.   1966.   1434.    971.    720.    461.    339.
            25          UI    233.    186.     85.     73.     73.     73.      0.      0.      0.      0.
            26          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            27          ZZ
1
                  SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE       (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

     7        S208

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*************************************                                    *************************************
 *                                   *                                    *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                *   U.S. ARMY CORPS OF ENGINEERS    *
 *              MAY   1991           *                                    *   HYDROLOGIC ENGINEERING CENTER   *
 *           VERSION 4.0.1E          *                                    *         609 SECOND STREET         *
 *                                   *                                    *      DAVIS, CALIFORNIA 95616      *
 *  RUN DATE  10/14/96  TIME  11:32:01 *                                  *          (916) 551-1748           *
 *                                   *                                    *                                   *
 *************************************                                    *************************************
```

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

    IT          HYDROGRAPH TIME DATA
                       NMIN          5  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1   0  STARTING DATE
                      ITIME       0000  STARTING TIME
                         NQ        600  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      3   0  ENDING DATE
                     NDTIME       0155  ENDING TIME
                      ICENT         19  CENTURY MARK

                 COMPUTATION INTERVAL    0.08 HOURS
                      TOTAL TIME BASE   49.92 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT
1
                                          RUNOFF SUMMARY
                                   FLOW IN CUBIC FEET PER SECOND
                                 TIME IN HOURS,  AREA IN SQUARE MILES

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

         HYDROGRAPH AT
+                         S208   3049.  12.08         453.        146.        70.       2.00


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

```
1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              MAY   1991           *
*           VERSION 4.0.1E          *
*                                   *
*  RUN DATE  10/14/96  TIME  11:32:17  *
*                                   *
*************************************
```

```
*************************************
*                                   *
*   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        FOUNTAIN HILLS ADMP
             2          ID        Single Basin Model Developed for Basin 209
             3          ID        March 25, 1996                                        FN:  S209-6.IH1
             4          IT       5                    116
             5          IO       5

             6          KK    S209
             7          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
             8          KM        L=      3.2  Lca=      1.7   S=  582.3  Kn= .024  LAG=  19.9
             9          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
            10          BA    1.60
            11          IN      15
            12          KM        RAINFALL DEPTH OF 3.31 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
            13          KM        AN AREAL REDUCTION COEFFICIENT OF .983 WAS USED
            14          PB    3.25
            15          KM        THE FOLLOWING PC RECORD USED A 6-HOUR RAINFALL WITH PATTERN NO. 1.68
            16          PC    .000    .009    .016    .025    .034    .042    .051    .059    .067    .075
            17          PC    .087    .100    .119    .155    .240    .427    .739    .861    .910    .942
            18          PC    .954    .966    .978    .989   1.000
            19          LG     .13     .28    4.62     .32   41.50
            20          UI    316.   1213.   2067.   2665.   1606.   1245.    915.    659.    495.    332.
            21          UI    255.    187.    133.     99.     52.     52.     52.     52.      0.      0.
            22          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            23          ZZ
```

```
1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              MAY   1991           *
*           VERSION 4.0.1E          *
*                                   *
*  RUN DATE  10/14/96  TIME  11:32:17  *
*                                   *
*************************************
```

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

```
                          FOUNTAIN HILLS ADMP
                          Single Basin Model Developed for Basin 209
                          March 25, 1996                                    FN:  S209-6.IH1

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

     IT          HYDROGRAPH TIME DATA
                        NMIN          5  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1   0  STARTING DATE
                       ITIME       0000  STARTING TIME
```

```
                    NQ        116  NUMBER OF HYDROGRAPH ORDINATES
                NDDATE      1   0  ENDING DATE
                NDTIME       0935  ENDING TIME
                ICENT          19  CENTURY MARK

            COMPUTATION INTERVAL    0.08 HOURS
                TOTAL TIME BASE     9.58 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
1
                                          RUNOFF SUMMARY
                                   FLOW IN CUBIC FEET PER SECOND
                                 TIME IN HOURS,  AREA IN SQUARE MILES

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

      HYDROGRAPH AT
+                        S209    2565.   4.17         376.         237.         237.      1.60


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

```
1*************************************                    *************************************
 *                                   *                    *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                    *   U.S. ARMY CORPS OF ENGINEERS    *
 *              MAY   1991           *                    *   HYDROLOGIC ENGINEERING CENTER   *
 *           VERSION 4.0.1E          *                    *         609 SECOND STREET         *
 *                                   *                    *      DAVIS, CALIFORNIA 95616      *
 *  RUN DATE  10/14/96  TIME  11:32:36   *                    *          (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        FOUNTAIN HILLS ADMP
            2           ID        Single Basin Model Developed for Basin 209
            3           ID        March 25, 1996                                        FN: S209-24.IH1
            4           IT       5                    300
            5           IO       5
            6           IN      15
                        *

            7           KK    S209
            8           KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
            9           KM        L=      3.2  Lca=      1.7   S=  582.3  Kn= .024  LAG=  19.9
           10           KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
           11           BA    1.60
           12           KM        RAINFALL DEPTH OF 3.31 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
           13           KM        AN AREAL REDUCTION COEFFICIENT OF .983 WAS USED
           14           PB    4.12
                        * The following PC records are a 24-hour SCS Type II rainfall distribution.
           15           PC   0.000   0.002   0.005   0.008   0.011   0.013   0.016   0.019   0.022   0.025
           16           PC   0.028   0.032   0.035   0.038   0.041   0.044   0.048   0.053   0.056   0.060
           17           PC   0.063   0.067   0.071   0.075   0.080   0.084   0.089   0.093   0.098   0.103
           18           PC   0.109   0.114   0.120   0.127   0.133   0.140   0.147   0.155   0.163   0.172
           19           PC   0.181   0.192   0.204   0.220   0.235   0.259   0.283   0.473   0.663   0.699
           20           PC   0.735   0.754   0.772   0.785   0.799   0.810   0.820   0.829   0.838   0.846
           21           PC   0.854   0.861   0.868   0.874   0.880   0.885   0.891   0.900   0.902   0.910
           22           PC   0.912   0.920   0.921   0.926   0.929   0.930   0.937   0.941   0.945   0.950
           23           PC   0.952   0.957   0.959   0.962   0.965   0.970   0.972   0.973   0.978   0.981
           24           PC   0.984   0.987   0.989   0.992   0.995   0.998   1.000
           25           LG     .13     .28    4.62     .32   41.50
           26           UI    316.   1213.   2067.   2665.   1606.   1245.    915.    659.    495.    332.
           27           UI    255.    187.    133.     99.     52.     52.     52.     52.      0.      0.
           28           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
           29           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         *
 *                                   *                    *      DAVIS, CALIFORNIA 95616      *
 *  RUN DATE  10/14/96  TIME  11:32:36   *                    *          (916) 551-1748           *
 *                                   *                    *                                   *
 *************************************                    *************************************
```


```
                        FOUNTAIN HILLS ADMP
                        Single Basin Model Developed for Basin 209
                        March 25, 1996                                        FN: S209-24.IH1

   5 IO          OUTPUT CONTROL VARIABLES
```

```
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE

     IT          HYDROGRAPH TIME DATA
                     NMIN          5  MINUTES IN COMPUTATION INTERVAL
                    IDATE      1   0  STARTING DATE
                    ITIME       0000  STARTING TIME
                       NQ        300  NUMBER OF HYDROGRAPH ORDINATES
                   NDDATE      2   0  ENDING DATE
                   NDTIME       0055  ENDING TIME
                   ICENT         19  CENTURY MARK

                 COMPUTATION INTERVAL    0.08 HOURS
                      TOTAL TIME BASE   24.92 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT
1
                                                RUNOFF SUMMARY
                                         FLOW IN CUBIC FEET PER SECOND
                                       TIME IN HOURS,  AREA IN SQUARE MILES

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

          HYDROGRAPH AT
+                           S209     2259.   12.08         332.         105.         101.      1.60


 *** NORMAL END OF HEC-1 ***
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1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*              MAY   1991           *
*           VERSION 4.0.1E          *
*                                   *
* RUN DATE  10/14/96  TIME  11:32:49*
*                                   *
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*************************************
*                                   *
*   U.S. ARMY CORPS OF ENGINEERS    *
*   HYDROLOGIC ENGINEERING CENTER   *
*         609 SECOND STREET         *
*      DAVIS, CALIFORNIA 95616      *
*          (916) 551-1748           *
*                                   *
*************************************
```

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

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

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

```
1                                          HEC-1 INPUT                                                    PAGE  1

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

             1          ID        Fountain Hills ADMP
             2          ID        Single Basin Model Developed for Basin 210
             3          ID        March 25, 1996                                        FN:  S210-6.IH1
             4          IT       5                    110
             5          IO       5

             6          KK    S210
             7          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
             8          KM        L=      1.9  Lca=       .9   S=  360.7  Kn= .030  LAG=  17.0
             9          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
            10          BA    1.38
            11          IN      15
            12          KM        RAINFALL DEPTH OF 3.40 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
            13          KM        AN AREAL REDUCTION COEFFICIENT OF .985 WAS USED
            14          PB    3.35
            15          KM        THE FOLLOWING PC RECORD USED A 6-HOUR RAINFALL WITH PATTERN NO. 1.59
            16          PC    .000    .009    .016    .025    .034    .042    .051    .059    .067    .075
            17          PC    .087    .100    .119    .153    .237    .421    .751    .867    .913    .943
            18          PC    .955    .967    .978    .989   1.000
            19          LG     .09     .24    5.61     .19   24.82
            20          UI    386.   1462.   2587.   1930.   1339.    946.    649.    444.    315.    211.
            21          UI    136.    104.     52.     52.     52.      0.      0.      0.      0.      0.
            22          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            23          ZZ
```

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1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*              MAY   1991           *
*           VERSION 4.0.1E          *
*                                   *
* RUN DATE  10/14/96  TIME  11:32:49*
*                                   *
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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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```
                                Fountain Hills ADMP
                                Single Basin Model Developed for Basin 210
                                March 25, 1996                                        FN:  S210-6.IH1

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

     IT          HYDROGRAPH TIME DATA
                        NMIN           5  MINUTES IN COMPUTATION INTERVAL
                       IDATE       1   0  STARTING DATE
                       ITIME        0000  STARTING TIME
```

```
                    NQ        110  NUMBER OF HYDROGRAPH ORDINATES
                NDDATE      1   0  ENDING DATE
                NDTIME       0905  ENDING TIME
                ICENT          19  CENTURY MARK

            COMPUTATION INTERVAL    0.08 HOURS
                TOTAL TIME BASE    9.08 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
1
                                          RUNOFF SUMMARY
                                   FLOW IN CUBIC FEET PER SECOND
                                 TIME IN HOURS,  AREA IN SQUARE MILES

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

      HYDROGRAPH AT
+                       S210     2602.   4.08         331.        219.         219.       1.38


 *** NORMAL END OF HEC-1 ***
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1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              MAY   1991              *
*           VERSION 4.0.1E             *
*                                      *
*  RUN DATE  10/14/96  TIME  13:15:03  *
*                                      *
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****************************************
*                                      *
*   U.S. ARMY CORPS OF ENGINEERS       *
*   HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET            *
*      DAVIS, CALIFORNIA 95616         *
*          (916) 551-1748              *
*                                      *
****************************************
```

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

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

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

```
1                                          HEC-1 INPUT                                                    PAGE  1

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

            1           ID        FOUNTAIN HILLS ADMP - Project No. 63
            2           ID        Future Condition Model                          File:   S210-24.IH1
            3           ID        100-Year,24-Hour Storm, S-Graph                 Date:  03/26/96 CCC
                        *DIAGRAM
            4           IT       5                    600
            5           IO       5
            6           IN      30

            7           KK    S210
            8           KM       BASIN S210
            9           KM       THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
           10           KM       L=      1.9  Lca=       .9   S=  360.7  Kn= .030  LAG=  17.0
           11           KM       PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
           12           BA    1.38
           13           KM       RAINFALL DEPTH OF 4.12 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
           14           KM       AN AREAL REDUCTION COEFFICIENT OF 1.000 WAS USED
           15           PB    4.12
           16           KM       THE FOLLOWING PC RECORD USED A 24-HOUR SCS TYPE II RAINFALL
           17           PC    .000    .005    .011    .016    .022    .028    .035    .041    .048    .056
           18           PC    .063    .071    .080    .089    .098    .109    .120    .133    .147    .163
           19           PC    .181    .204    .235    .283    .663    .735    .772    .799    .820    .838
           20           PC    .854    .868    .880    .891    .902    .912    .921    .929    .937    .945
           21           PC    .952    .959    .965    .972    .978    .984    .989    .995   1.000
           22           LG     .09     .24    5.61     .19   24.82
           23           UI    386.   1462.   2587.   1930.   1339.    946.    649.    444.    315.    211.
           24           UI    136.    104.     52.     52.     52.      0.      0.      0.      0.      0.
           25           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
           26           ZZ
1
                 SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE       (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

     7        S210

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
```


```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              MAY   1991              *
*           VERSION 4.0.1E             *
*                                      *
*  RUN DATE  10/14/96  TIME  13:15:03  *
*                                      *
****************************************
```

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

```
                    FOUNTAIN HILLS ADMP - Project No. 63
                    Future Condition Model                          File:   S210-24.IH1
                    100-Year,24-Hour Storm, S-Graph                 Date:  03/26/96 CCC

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

   IT         HYDROGRAPH TIME DATA
                   NMIN          5  MINUTES IN COMPUTATION INTERVAL
                  IDATE      1   0  STARTING DATE
                  ITIME       0000  STARTING TIME
                     NQ        600  NUMBER OF HYDROGRAPH ORDINATES
                 NDDATE      3   0  ENDING DATE
                 NDTIME       0155  ENDING TIME
                 ICENT         19  CENTURY MARK

              COMPUTATION INTERVAL    0.08 HOURS
                   TOTAL TIME BASE   49.92 HOURS

        ENGLISH UNITS
             DRAINAGE AREA          SQUARE MILES
             PRECIPITATION DEPTH    INCHES
             LENGTH, ELEVATION      FEET
             FLOW                   CUBIC FEET PER SECOND
             STORAGE VOLUME         ACRE-FEET
             SURFACE AREA           ACRES
             TEMPERATURE            DEGREES FAHRENHEIT
1
                                          RUNOFF SUMMARY
                                   FLOW IN CUBIC FEET PER SECOND
                                 TIME IN HOURS,  AREA IN SQUARE MILES

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

        HYDROGRAPH AT
+                        S210    2121.   12.08       271.         79.         38.      1.38


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

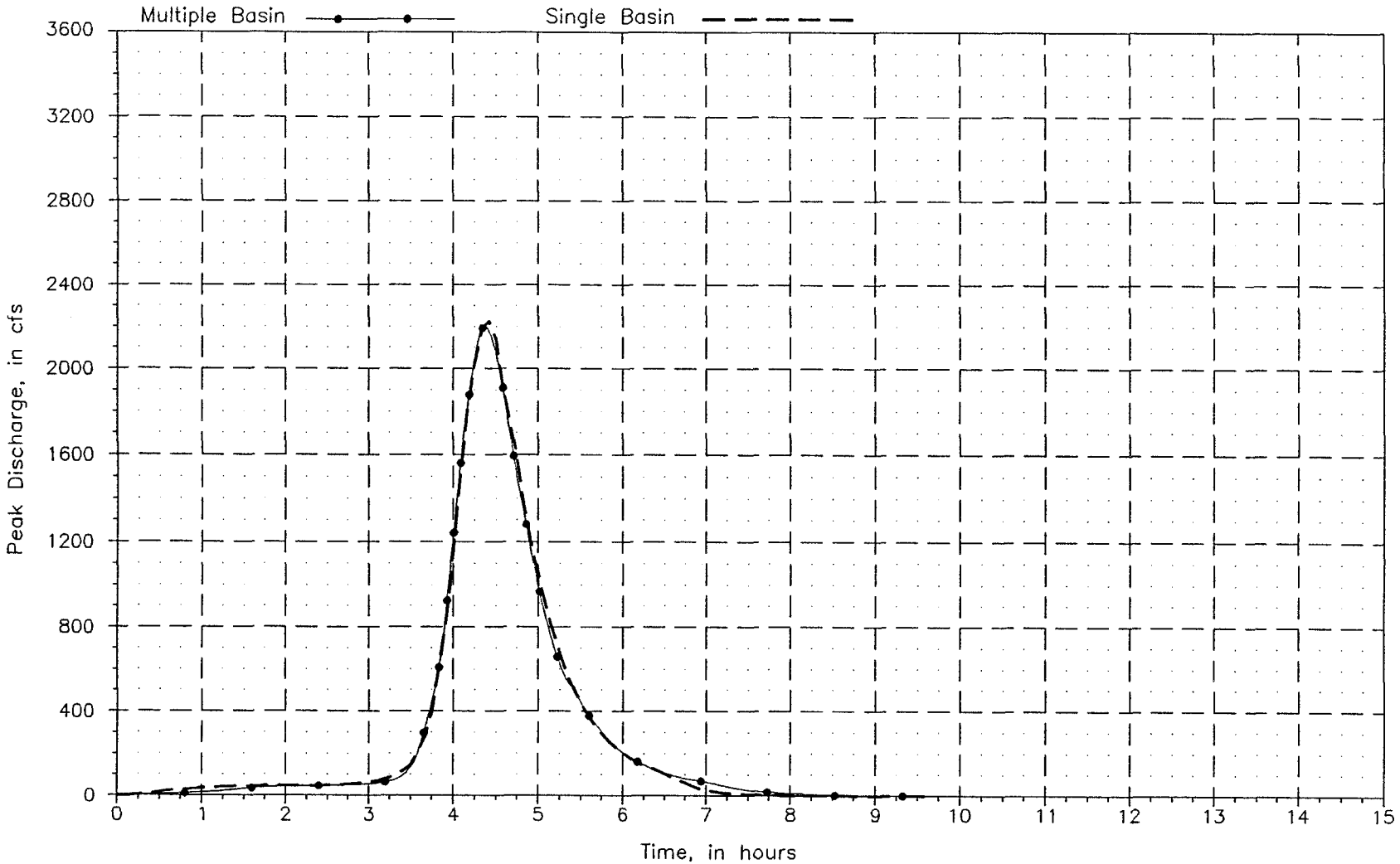

Figure D1
Major Basin 207: 100-year, 6-hour hydrographs

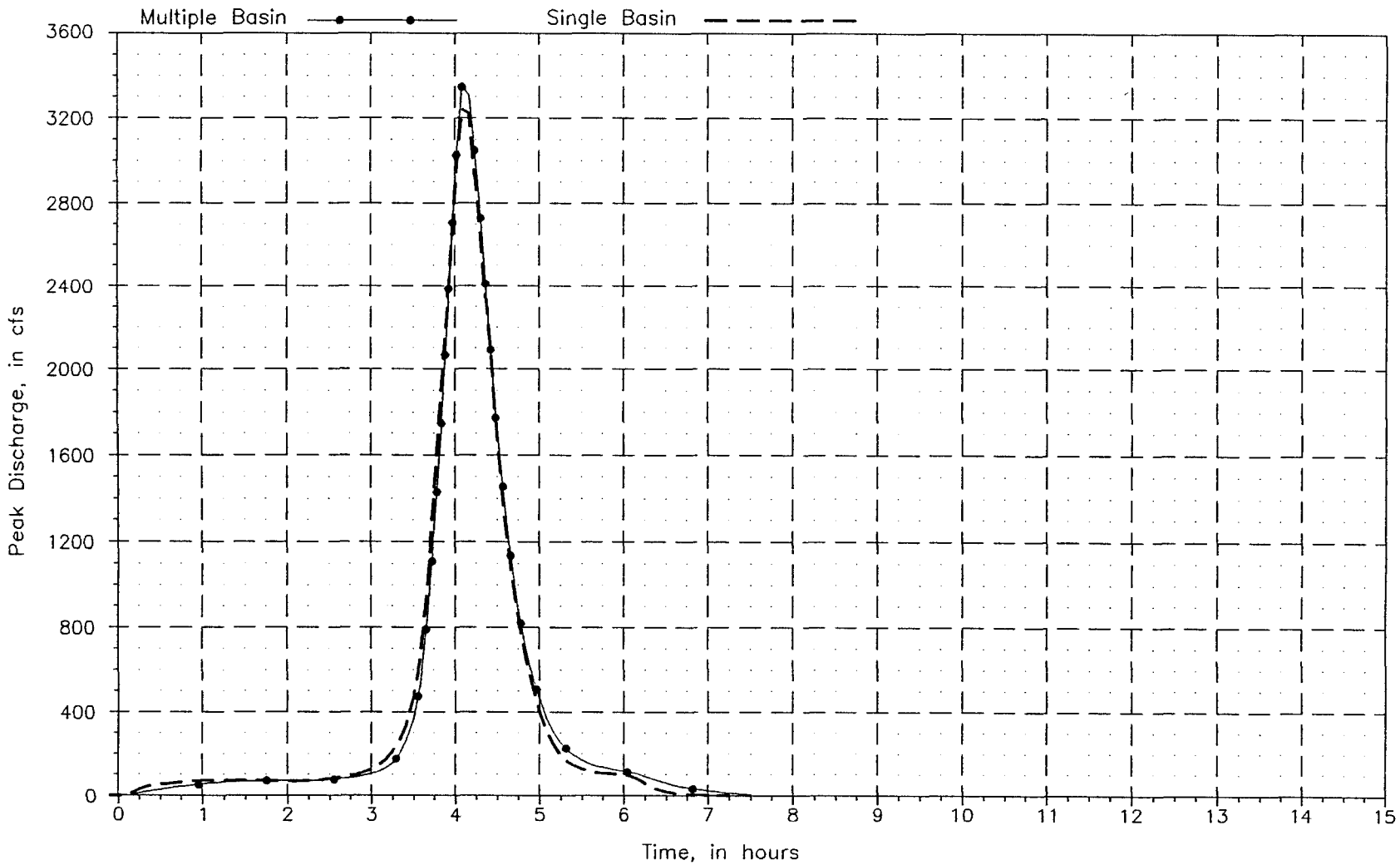

Figure D2
Major Basin 208: 100-year, 6-hour hydrographs

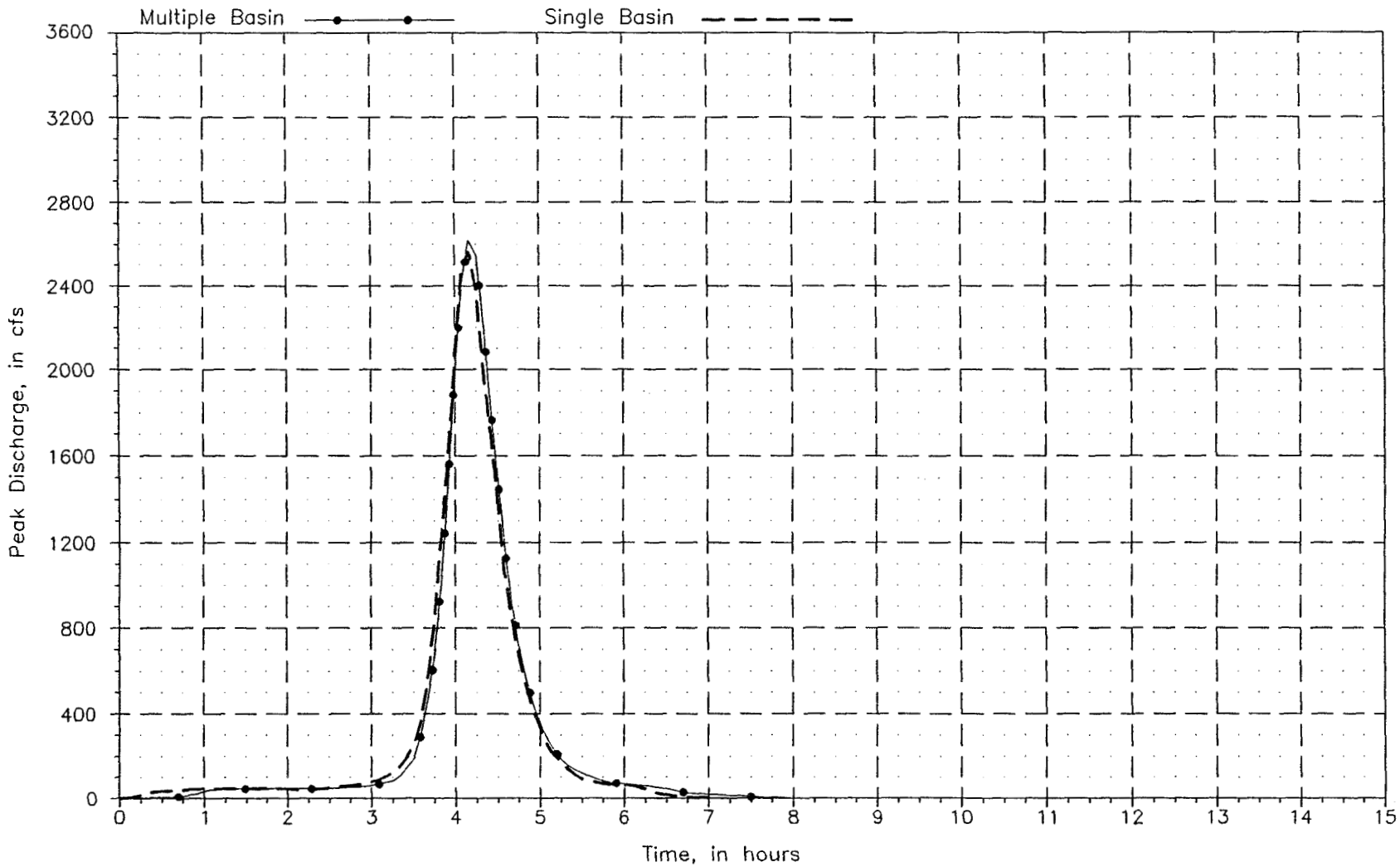

Figure D3
Major Basin 209: 100-year, 6-hour hydrographs

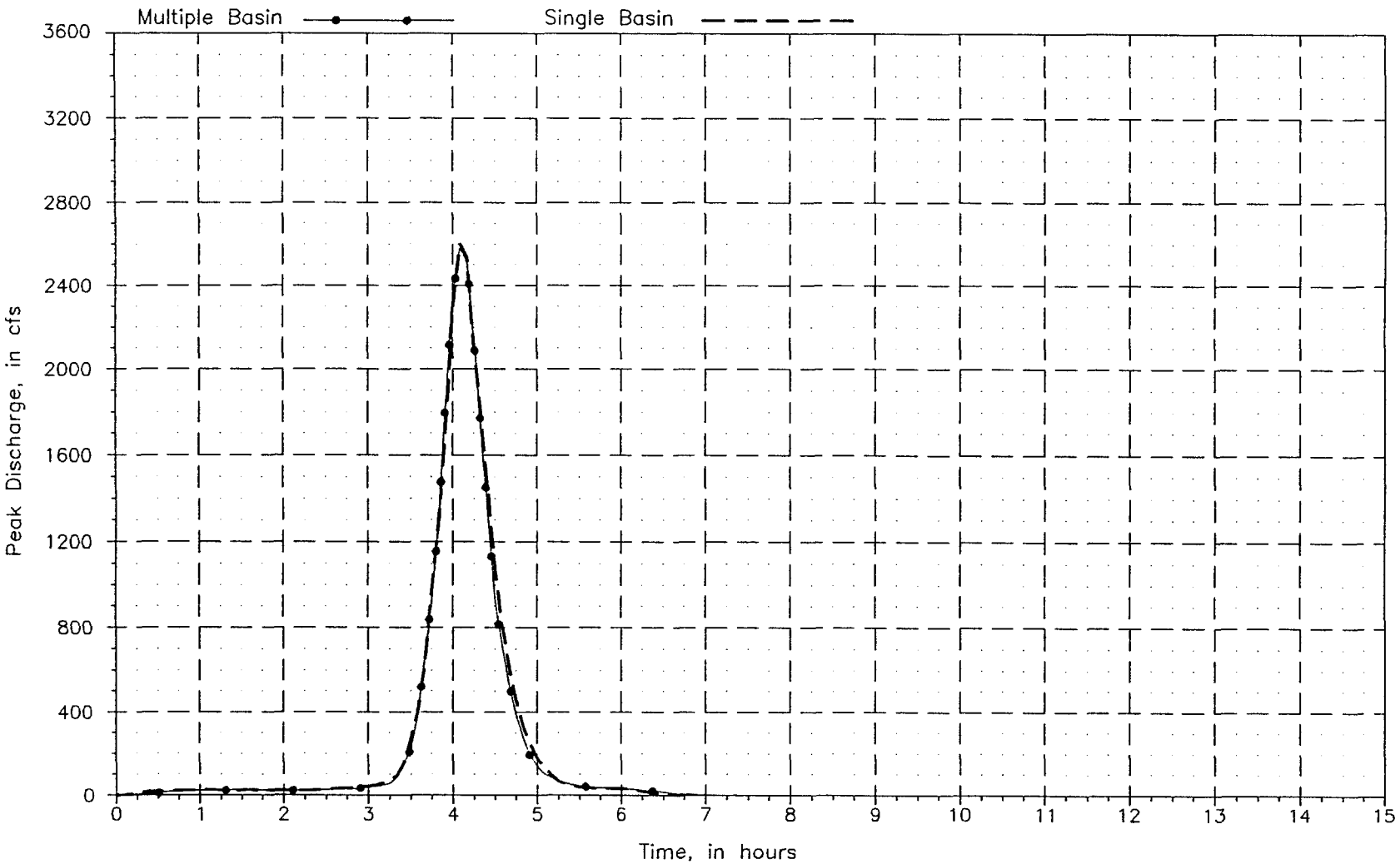

Figure D4
Major Basin 210: 100-year, 6-hour hydrographs

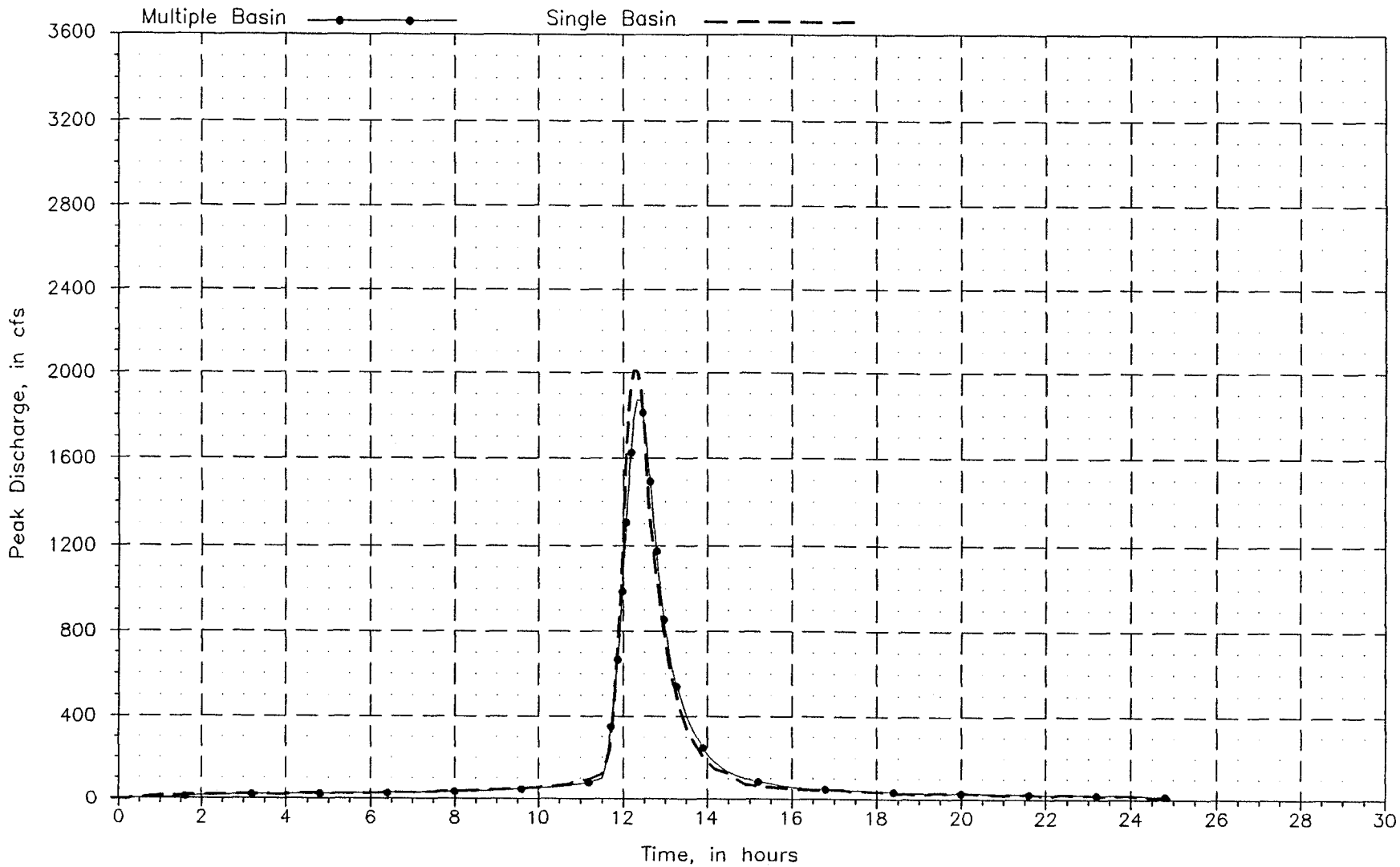

Figure D5
Major Basin 207: 100-year, 24-hour hydrographs

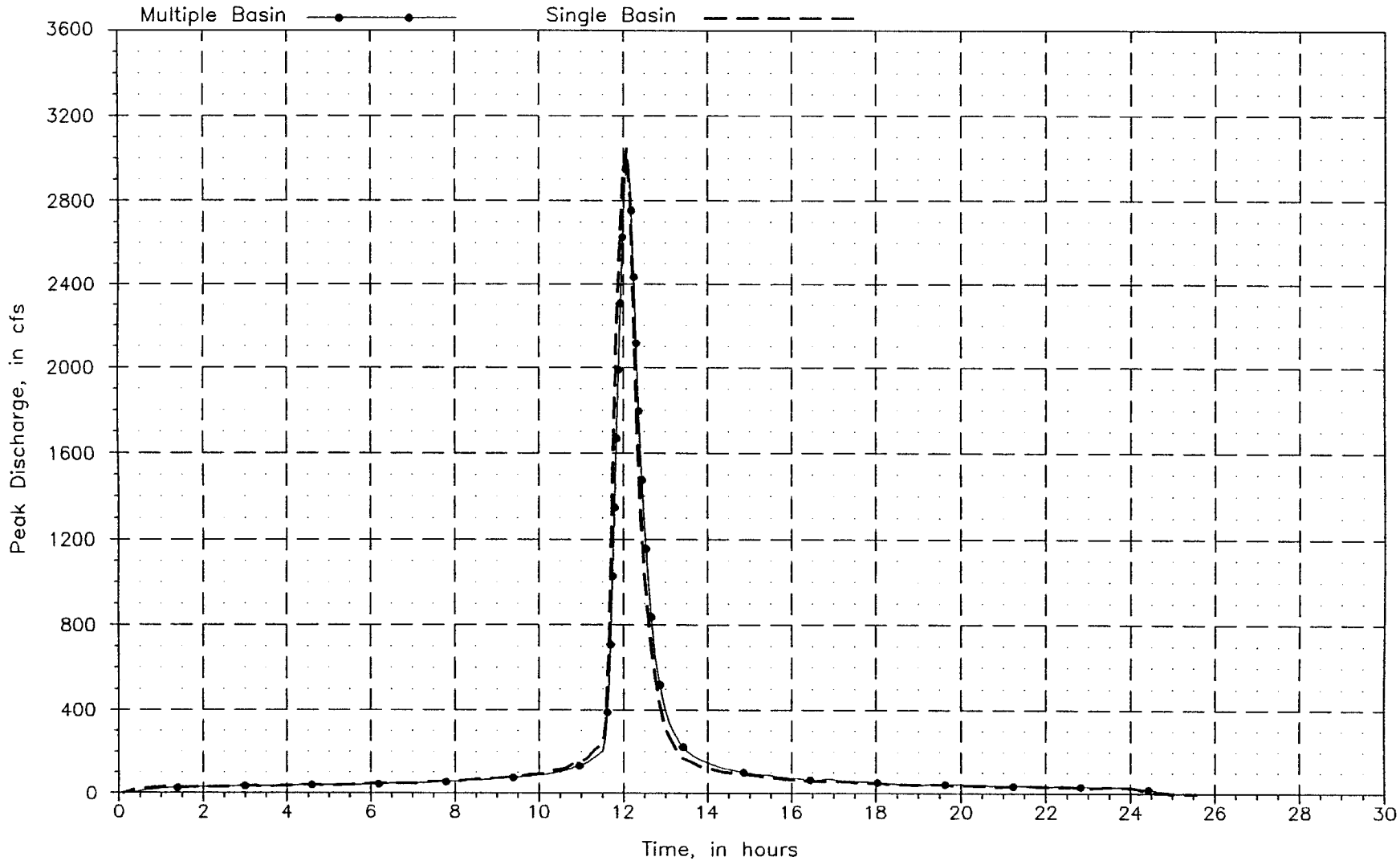

Figure D6
Major Basin 208: 100-year, 24-hour hydrographs

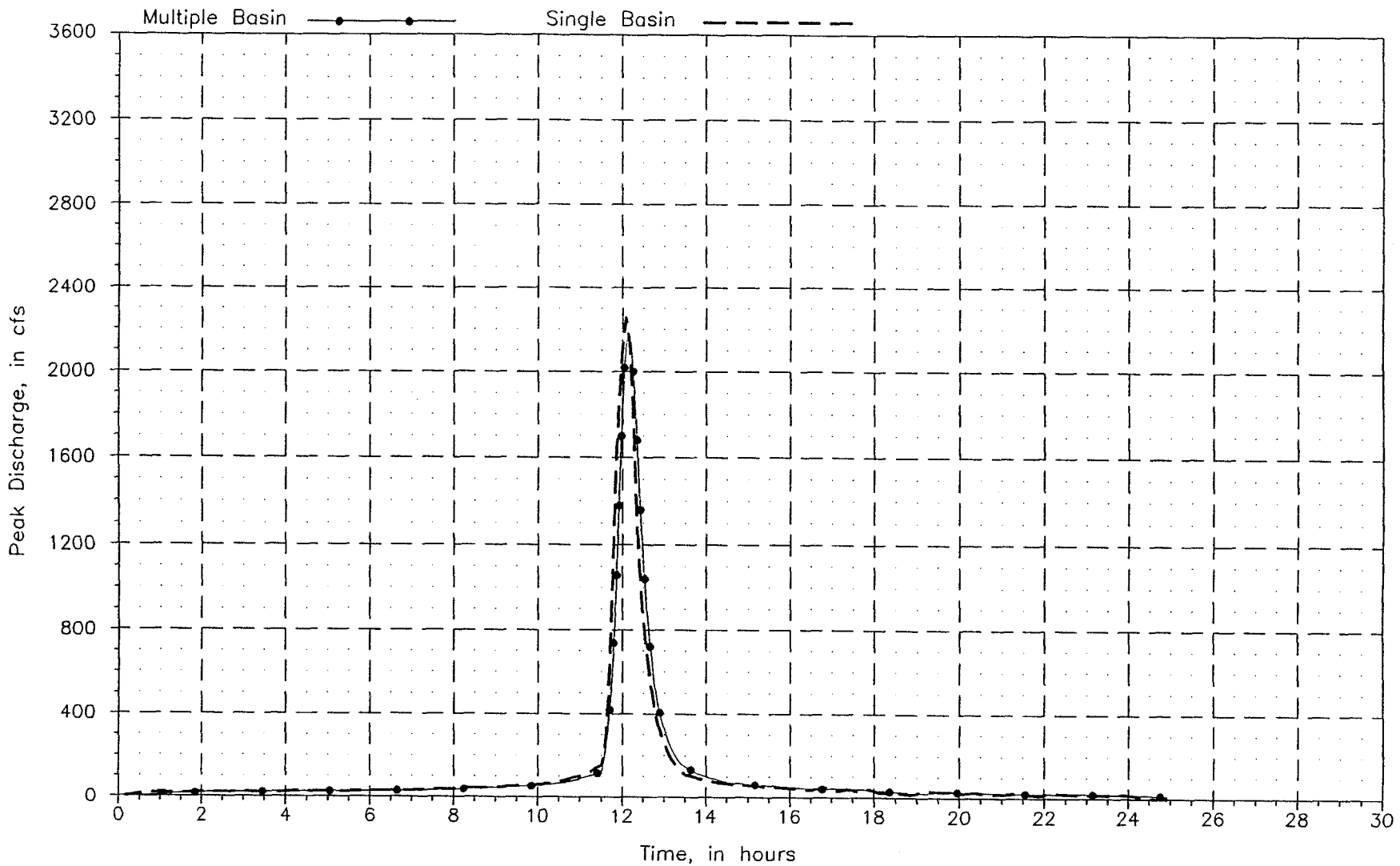

Figure D7
Major Basin 209: 100-year, 24-hour hydrographs

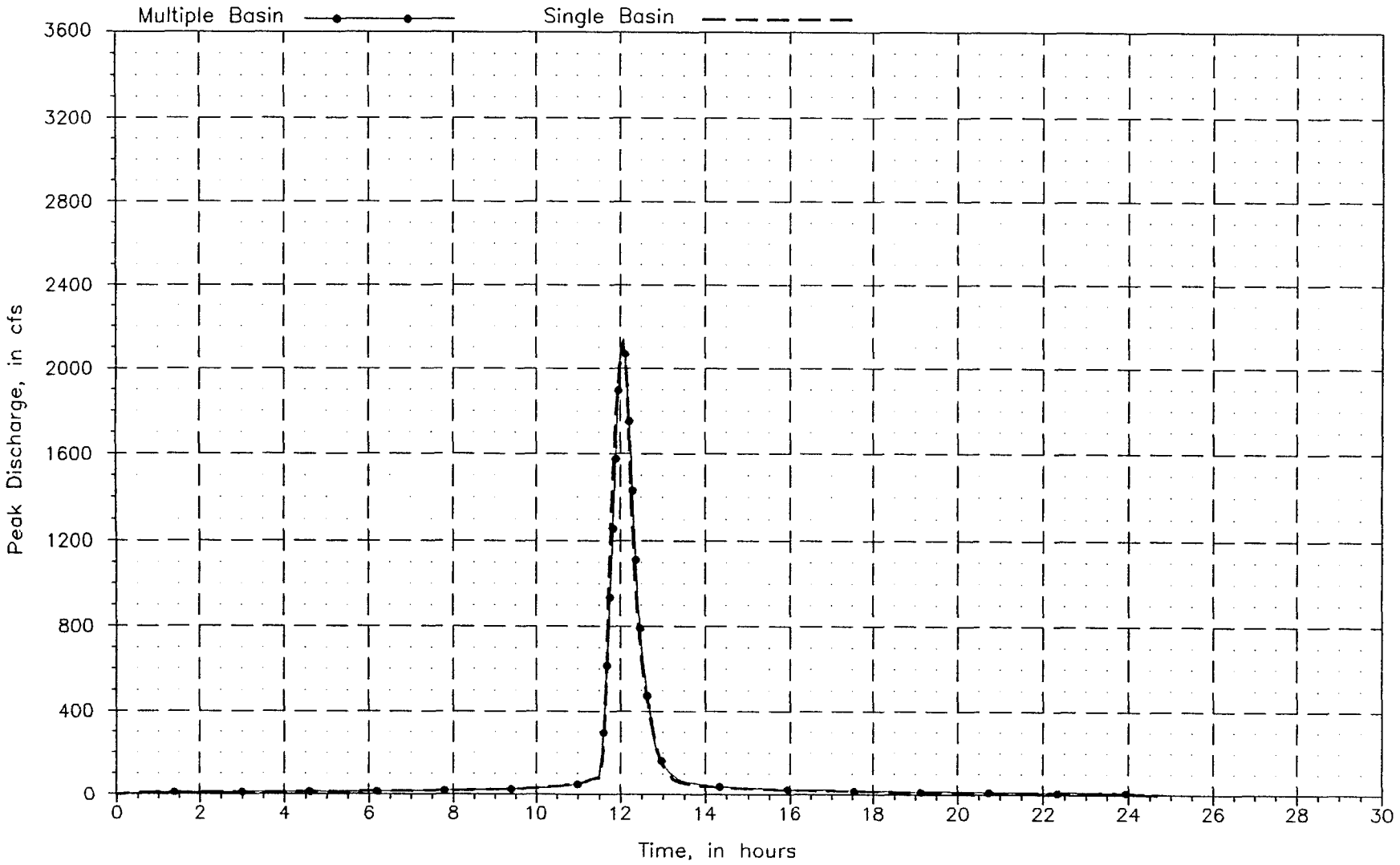

Figure D8
Major Basin 210: 100-year, 24-hour hydrographs

Table 6.3A.--Local-storm PMP computation, Colorado River, Great Basin and California drainages. For drainage average depth PMP. Go to table 6.3B if areal variation is required.

Drainage DRAINAGE AREA ABOVE DAM #4 Area 1.38 mi^2 (km^2)
Latitude 33°35' Longitude 111°45 Minimum Elevation 1706 ft (m)

Steps correspond to those in sec. 6.3A.

1. Average 1-hr 1-mi^2 (2.6-km^2) PMP for drainage [fig. 4.5]. 11.5 in. (mm)

2. a. Reduction for elevation. [No adjustment for elevations up to 5,000 feet (1,524 m): 5% decrease per 1,000 feet (305 m) above 5,000 feet (1,524 m)]. 100 %

   b. Multiply step 1 by step 2a. 11.5 in. (mm)

3. Average 6/1-hr ratio for drainage [fig. 4.7]. 1.8

	Duration (hr)									
	1/4	1/2	3/4	1	2	3	4	5	6	
4. Durational variation for 6/1-hr ratio of step 3 [table 4.4].	74	89	95	100	114	121	125	128	130	%
5. 1-mi^2 (2.6-km^2) PMP for indicated durations [step 2b X step 4].	8.5	10.2	10.9	11.5	13.1	13.9	14.4	14.7	15.0	in. (mm)
6. Areal reduction [fig. 4.9].	98	99	99	99	99.5	99.5	99.5	99.5	100	%
7. Areal reduced PMP [steps 5 X 6].	8.3	10.1	10.8	11.4	13.0	13.8	14.3	14.6	15.0	in. (mm)
8. Incremental PMP [successive subtraction in step 7].				11.4	1.6	0.8	0.5	0.3	0.4	in. (mm)
	8.3	1.8	0.7	0.6	} 15-min. increments					

9. Time sequence of incremental PMP according to:

Hourly increments [table 4.7].	0.4	0.8	11.4	1.6	0.5	0.3	in. (mm)
Four largest 15-min. increments [table 4.8].	8.3	1.8	0.7	0.6			in. (mm)

579

Table 6.3A.--Local-storm PMP computation, Colorado River, Great Basin and California drainages. For drainage average depth PMP. Go to table 6.3B if areal variation is required.

Drainage GOLDEN EAGLE PARK (# 4) Area 7.13 mi^2 (km^2)
Latitude 33° 35' Longitude 111° 45' Minimum Elevation 1706 ft (m)

Steps correspond to those in sec. 6.3A.

1. Average 1-hr 1-mi^2 (2.6-km^2) PMP for drainage [fig. 4.5]. 11.5 in. (mm)

2. a. Reduction for elevation. [No adjustment for elevations up to 5,000 feet (1,524 m): 5% decrease per 1,000 feet (305 m) above 5,000 feet (1,524 m)]. 100 %

   b. Multiply step 1 by step 2a. 11.5 in. (mm)

3. Average 6/1-hr ratio for drainage [fig. 4.7]. 1.3

	Duration (hr)									
	1/4	1/2	3/4	1	2	3	4	5	6	
4. Durational variation for 6/1-hr ratio of step 3 [table 4.4].	74	89	95	100	114	121	125	128	130	%
5. 1-mi^2 (2.6-km^2) PMP for indicated durations [step 2b X step 4].	8.5	10.2	10.9	11.5	13.1	13.9	14.4	14.7	15.0	in. (mm)
6. Areal reduction [fig. 4.9].	78	83	85	86	88	89	90	90	91	%
7. Areal reduced PMP [steps 5 X 6].	6.6	8.5	9.3	9.9	11.5	12.4	13.0	13.2	13.7	in. (mm)
8. Incremental PMP [successive subtraction in step 7].				9.9	1.6	0.9	0.6	0.2	0.5	in. (mm)
	6.6	1.9	0.8	0.6	} 15-min. increments					

9. Time sequence of incremental PMP according to:

Hourly increments [table 4.7].	0.5	0.9	9.9	1.6	0.6	0.2	in. (mm)
Four largest 15-min. increments [table 4.8].	6.6	1.9	0.8	0.6			in. (mm)

Table 6.3A.--Local-storm PMP computation, Colorado River, Great Basin and California drainages. For drainage average depth PMP. Go to table 6.3B if areal variation is required.

Drainage NORTH HEIGHTS (DAM # 11) Area 2.0 mi^2 (km^2)
Latitude 33°35' Longitude 111°45' Minimum Elevation ____ ft (m)

Steps correspond to those in sec. 6.3A.

1. Average 1-hr 1-mi^2 (2.6-km^2) PMP for drainage [fig. 4.5]. 11.5 in. (mm)

2. a. Reduction for elevation. [No adjustment for elevations up to 5,000 feet (1,524 m): 5% decrease per 1,000 feet (305 m) above 5,000 feet (1,524 m)]. 100 %

   b. Multiply step 1 by step 2a. 11.5 in. (mm)

3. Average 6/1-hr ratio for drainage [fig. 4.7]. 1.3

	Duration (hr)									
	1/4	1/2	3/4	1	2	3	4	5	6	
4. Durational variation for 6/1-hr ratio of step 3 [table 4.4].	74	89	95	100	114	121	125	128	130	%
5. 1-mi^2 (2.6-km^2) PMP for indicated durations [step 2b X step 4].	8.5	10.2	10.9	11.5	13.1	13.9	14.4	14.7	15.0	in. (mm)
6. Areal reduction [fig. 4.9].	94	96	96	97	97	97	98	98	98	%
7. Areal reduced PMP [steps 5 X 6].	8.0	9.8	10.5	11.2	12.7	13.5	14.1	14.4	14.7	in. (mm)
8. Incremental PMP [successive subtraction in step 7].				11.2	1.5	0.8	0.6	0.3	0.3	in. (mm)
	8.0	1.8	0.7	0.7	} 15-min. increments					

9. Time sequence of incremental PMP according to:

Hourly increments [table 4.7].	0.3	0.8	11.2	1.5	0.6	0.3	in. (mm)
Four largest 15-min. increments [table 4.8].	8.0	1.8	0.7	0.7			in. (mm)

DAM 7 - SUNRIDGE CANYON DAM

Table 6.3A.--Local-storm PMP computation, Colorado River, Great Basin and California drainages. For drainage average depth PMP. Go to table 6.3B if areal variation is required.

Drainage SUNRIDGE CANYON (DAM #7) Area 1.6 mi^2 (km^2)
Latitude 38°25' Longitude 111°45' Minimum Elevation ____ ft (m)

Steps correspond to those in sec. 6.3A.

1. Average 1-hr 1-mi^2 (2.6-km^2) PMP for drainage [fig. 4.5]. 11.5 in. (mm)

2. a. Reduction for elevation. [No adjustment for elevations up to 5,000 feet (1,524 m): 5% decrease per 1,000 feet (305 m) above 5,000 feet (1,524 m)]. 100 %

   b. Multiply step 1 by step 2a. 11.5 in. (mm)

3. Average 6/1-hr ratio for drainage [fig. 4.7]. 1.3

	Duration (hr)									
	1/4	1/2	3/4	1	2	3	4	5	6	
4. Durational variation for 6/1-hr ratio of step 3 [table 4.4].	74	89	95	100	114	121	125	128	130	%
5. 1-mi^2 (2.6-km^2) PMP for indicated durations [step 2b X step 4].	8.5	10.2	10.9	11.5	13.1	13.9	14.4	14.7	15.0	in. (mm)
6. Areal reduction [fig. 4.9].	97	98	98	99	99	99	[illegible]	100	100	%
7. Areal reduced PMP [steps 5 X 6].	8.2	10.0	10.7	11.4	13.0	13.8	[illegible]	14.7	15	in. (mm)
8. Incremental PMP [successive subtraction in step 7].				11.4	1.6	0.8	0.6	0.2	0.3	in. (mm)
	8.2	1.8	0.7	0.7	} 15-min. increments					

9. Time sequence of incremental PMP according to:

Hourly increments [table 4.7].	0.3	0.8	11.4	1.6	0.6	0.3	in. (mm)
Four largest 15-min. increments [table 4.8].	8.2	1.8	0.7	0.7			in. (mm)

DAM 6 - ASPEN DAM

Table 6.3A.--Local-storm PMP computation, Colorado River, Great Basin and California drainages. For drainage average depth PMP. Go to table 6.3B if areal variation is required.

Drainage ASPEN DAM - DAM # 6 Area 2.15 mi^2 (km^2)
Latitude 38°32' Longitude 111°45' Minimum Elevation 1810 ft (m)

Steps correspond to those in sec. 6.3A.

1. Average 1-hr 1-mi^2 (2.6-km^2) PMP for drainage [fig. 4.5]. 11.5 in. (mm)

2. a. Reduction for elevation. [No adjustment for elevations up to 5,000 feet (1,524 m): 5% decrease per 1,000 feet (305 m) above 5,000 feet (1,524 m)]. 100 %

   b. Multiply step 1 by step 2a. 11.5 in. (mm)

3. Average 6/1-hr ratio for drainage [fig. 4.7]. 1.3

	Duration (hr)									
	1/4	1/2	3/4	1	2	3	4	5	6	
4. Durational variation for 6/1-hr ratio of step 3 [table 4.4].	74	89	95	100	114	121	125	128	130	%
5. 1-mi^2 (2.6-km^2) PMP for indicated durations [step 2b X step 4].	8.5	10.2	10.9	11.5	13.1	13.9	14.4	14.7	15.0	in. (mm)
6. Areal reduction [fig. 4.9].	94	96	96	96	97	97	97	98	98	%
7. Areal reduced PMP [steps 5 X 6].	8.0	9.8	10.5	11.0	12.7	13.5	14.0	14.4	14.7	in. (mm)
8. Incremental PMP [successive subtraction in step 7].				11.0	1.7	0.8	0.5	0.4	0.3	in. (mm)
	8	1.8	0.7	0.5	} 15-min. increments					

9. Time sequence of incremental PMP according to:

Hourly increments [table 4.7].	0.4	0.8	11.0	1.7	0.5	0.3	in. (mm)
Four largest 15-min. increments [table 4.8].	8	1.8	0.7	0.5			in. (mm)

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1*************************************
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*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*              MAY   1991           *
*            VERSION 4.0.1E         *
*                                   *
*  RUN DATE  10/14/96  TIME  15:35:20*
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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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             2          ID        Single Basin Model Developed for Basin 207 (Dam 6- Aspen Dam)
             3          ID        March 25, 1996                                        FN: 207-PMF.IH1
             4          ID        Generation of PMF
             5          IT       5                    110
             6          IO       5
             7          IN      15

             8          KK    S207
             9          KM        BASIN S207
            10          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
            11          KM        L=      3.9  Lca=      2.2   S=  464.7  Kn= .300  LAG=  30.6
            12          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
            13          BA    2.15
            14          KM        The Rainfall Distribution of the PMP OF 14.7 INCHES
            15          PI     0.1     0.1     0.1     0.1     0.2     0.2     0.2     0.2     8.0     1.8
            16          PI     0.7     0.5   0.425   0.425   0.425   0.425   0.125   0.125   0.125   0.125
            17          PI   0.075   0.075   0.075   0.075
            18          LG    0.17     .31    4.90     .29   31.55
            19          UI    237.    523.   1170.   1651.   2163.   2377.   1509.   1274.   1082.    897.
            20          UI    699.    573.    507.    374.    299.    259.    198.    181.    119.    116.
            21          UI    111.     45.     45.     45.     45.     45.     45.     45.      0.      0.
            22          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            23          ZZ
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*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*              MAY   1991           *
*            VERSION 4.0.1E         *
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*  RUN DATE  10/14/96  TIME  15:35:20*
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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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                          Fountain Hills ADMP
                          Single Basin Model Developed for Basin 207 (Dam 6- Aspen Dam)
                          March 25, 1996                                        FN: 207-PMF.IH1
                          Generation of PMF

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

     IT          HYDROGRAPH TIME DATA
                        NMIN          5  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1   0  STARTING DATE
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                ITIME        0000  STARTING TIME
                   NQ         110  NUMBER OF HYDROGRAPH ORDINATES
              NDDATE      1    0  ENDING DATE
              NDTIME        0905  ENDING TIME
              ICENT           19  CENTURY MARK

          COMPUTATION INTERVAL    0.08 HOURS
               TOTAL TIME BASE    9.08 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
1
                                                  RUNOFF SUMMARY
                                            FLOW IN CUBIC FEET PER SECOND
                                          TIME IN HOURS,  AREA IN SQUARE MILES

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

     HYDROGRAPH AT
+                       S207     17974.    2.58        2897.       1918.       1918.       2.15


 *** NORMAL END OF HEC-1 ***
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*              MAY   1991              *
*            VERSION 4.0.1E            *
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*  RUN DATE  10/14/96  TIME  15:38:52  *
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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
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X     X  X        X                X
XXXXXXX  XXXX     X        XXXXX   X
X     X  X        X                X
X     X  X        X     X          X
X     X  XXXXXXX   XXXXX          XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

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

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1                                    HEC-1 INPUT                                                    PAGE  1

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

            1           ID        Fountain Hills ADMP
            2           ID        Single Basin Model Developed for Basin 208 (Dam 11-N.Heights Dam)
            3           ID        March 25, 1996                                        FN: 208-PMF.IH1
            4           ID        Generation of PMF
            5           IT       5                    110
            6           IO       5
            7           IN      15

            8           KK    S208
            9           KM        BASIN S208
           10           KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
           11           KM        L=      3.0  Lca=      1.6   S=  488.9  Kn= .018  LAG=  14.2
           12           KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
           13           BA    2.00
           14           KM        The Rainfall Distribution of the PMP OF 14.7 INCHES
           15           PI     0.1     0.1     0.1     0.1     0.2     0.2     0.2     0.2     8.0     1.8
           16           PI     0.7     0.5   0.425   0.425   0.425   0.425   0.125   0.125   0.125   0.125
           17           PI   0.075   0.075   0.075   0.075
           18           LG     .10     .25    4.80     .28   50.48
           19           UI    837.   3038.   4371.   2543.   1714.   1106.    677.    446.    282.    192.
           20           UI     91.     91.     91.      0.      0.      0.      0.      0.      0.      0.
           21           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
           22           ZZ
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1****************************************
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*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              MAY   1991              *
*            VERSION 4.0.1E            *
*                                      *
*  RUN DATE  10/14/96  TIME  15:38:52  *
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*                                      *
*   U.S. ARMY CORPS OF ENGINEERS       *
*   HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET            *
*      DAVIS, CALIFORNIA 95616         *
*          (916) 551-1748              *
*                                      *
****************************************
```

```
                    Fountain Hills ADMP
                    Single Basin Model Developed for Basin 208 (Dam 11-N.Heights Dam)
                    March 25, 1996                                        FN: 208-PMF.IH1
                    Generation of PMF

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

    IT        HYDROGRAPH TIME DATA
                 NMIN          5  MINUTES IN COMPUTATION INTERVAL
                IDATE      1   0  STARTING DATE
                ITIME       0000  STARTING TIME
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                NQ        110  NUMBER OF HYDROGRAPH ORDINATES
            NDDATE      1   0  ENDING DATE
            NDTIME       0905  ENDING TIME
            ICENT          19  CENTURY MARK

        COMPUTATION INTERVAL    0.08 HOURS
            TOTAL TIME BASE     9.08 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
1
                                        RUNOFF SUMMARY
                                   FLOW IN CUBIC FEET PER SECOND
                                 TIME IN HOURS,  AREA IN SQUARE MILES

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

    HYDROGRAPH AT
+                     S208     26969.    2.33        2850.       1886.       1886.      2.00


*** NORMAL END OF HEC-1 ***
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1*************************************
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*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*              MAY   1991           *
*           VERSION 4.0.1E          *
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*  RUN DATE  10/14/96  TIME  15:39:07*
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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
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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

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1                                          HEC-1 INPUT                                                    PAGE  1

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

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             2          ID        Single Basin Model Developed for Basin 209 (Dam 7 - SunRidge Dam)
             3          ID        March 25, 1996                                        FN: 209-PMF.IH1
             4          ID        Generation of PMF
             5          IT       5                    110
             6          IO       5
             7          IN      15

             8          KK    S209
             9          KM        BASIN S209
            10          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
            11          KM        L=      3.2  Lca=      1.7   S=  582.3  Kn= .019  LAG=  15.9
            12          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
            13          BA    1.60
            14          KM        RAINFALL DEPTH OF 15.00 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
            15          PI   0.075   0.075   0.075   0.075     0.2     0.2     0.2     0.2     8.2     1.8
            16          PI     0.7     0.7     0.4     0.4     0.4     0.4    0.15    0.15    0.15    0.15
            17          PI   0.075   0.075   0.075   0.075
            18          LG     .13     .28    4.62     .32   41.50
            19          UI    515.   1951.   3289.   2104.   1510.    997.    702.    442.    308.    202.
            20          UI    154.     65.     65.     65.      0.      0.      0.      0.      0.      0.
            21          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            22          ZZ
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1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*              MAY   1991           *
*           VERSION 4.0.1E          *
*                                   *
*  RUN DATE  10/14/96  TIME  15:39:07*
*                                   *
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*                                   *
*   U.S. ARMY CORPS OF ENGINEERS    *
*   HYDROLOGIC ENGINEERING CENTER   *
*         609 SECOND STREET         *
*      DAVIS, CALIFORNIA 95616      *
*          (916) 551-1748           *
*                                   *
*************************************
```

```
                         Fountain Hills ADMP
                         Single Basin Model Developed for Basin 209 (Dam 7 - SunRidge Dam)
                         March 25, 1996                                        FN: 209-PMF.IH1
                         Generation of PMF

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

     IT          HYDROGRAPH TIME DATA
                        NMIN          5  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1   0  STARTING DATE
                       ITIME       0000  STARTING TIME
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                NQ        110  NUMBER OF HYDROGRAPH ORDINATES
            NDDATE      1   0  ENDING DATE
            NDTIME       0905  ENDING TIME
            ICENT          19  CENTURY MARK

        COMPUTATION INTERVAL    0.08 HOURS
            TOTAL TIME BASE     9.08 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
1
                                        RUNOFF SUMMARY
                                  FLOW IN CUBIC FEET PER SECOND
                                TIME IN HOURS,  AREA IN SQUARE MILES

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

    HYDROGRAPH AT
+                     S209     20238.    2.33         2265.        1498.        1498.       1.60


 *** NORMAL END OF HEC-1 ***
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 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
 *             MAY   1991            *
 *           VERSION 4.0.1E          *
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 *  RUN DATE  10/14/96  TIME  15:39:22*
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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
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        Fountain Hills ADMP
             2          ID        Single Basin Model Developed for Basin 210
             3          ID        March 25, 1996                                        FN: 210-PMF.IH1
             4          ID        Generation of PMF
             5          IT       5                    110
             6          IO       5
             7          IN      15

             8          KK    S210
             9          KM        BASIN S210
            10          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
            11          KM        L=      1.9  Lca=       .9   S=  360.7  Kn= .024  LAG=  13.6
            12          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
            13          BA    1.38
            14          KM        Rainfall Distribution of PMP = 15.00 inches
            15          PI   0.075   0.075   0.075   0.075     0.2     0.2     0.2     0.2     8.2     1.8
            16          PI     0.7     0.7     0.4     0.4     0.4     0.4    0.15    0.15    0.15    0.15
            17          PI   0.075   0.075   0.075   0.075
            18          LG     .09     .24    5.61     .19   24.82
            19          UI    634.   2291.   3040.   1739.   1122.    723.    433.    286.    170.     96.
            20          UI     66.     66.      0.      0.      0.      0.      0.      0.      0.      0.
            21          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            22          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         *
 *                                   *                                                  *      DAVIS, CALIFORNIA 95616      *
 *  RUN DATE  10/14/96  TIME  15:39:22*                                                  *          (916) 551-1748           *
 *                                   *                                                  *                                   *
 *************************************                                                  *************************************
```

```
                                Fountain Hills ADMP
                                Single Basin Model Developed for Basin 210
                                March 25, 1996                                        FN: 210-PMF.IH1
                                Generation of PMF

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

     IT          HYDROGRAPH TIME DATA
                        NMIN          5  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1   0  STARTING DATE
                       ITIME       0000  STARTING TIME
```

```
                NQ        110  NUMBER OF HYDROGRAPH ORDINATES
            NDDATE      1   0  ENDING DATE
            NDTIME       0905  ENDING TIME
            ICENT          19  CENTURY MARK

         COMPUTATION INTERVAL    0.08 HOURS
             TOTAL TIME BASE    9.08 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
1
                                        RUNOFF SUMMARY
                                   FLOW IN CUBIC FEET PER SECOND
                                TIME IN HOURS,  AREA IN SQUARE MILES

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

    HYDROGRAPH AT
+                     S210     19580.    2.33        1956.       1293.        1293.       1.38

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

APPENDIX F

Pre-alternative stage versus storage and stage versus discharge relations for Aspen, North Heights, SunRidge Canyon and Golden Eagle Park Dams

TABLE F1
Storage and Discharge vs Stage for Aspen Dam

Stage NGVD 29 Datum	Surface Area (acres)	Storage Volume (acre-feet)	Discharge, in cfs		
			Principal Spillway	Emergency Spillway	Total
1808.79	0	0	0	---	0
1810.00	0.11	0.00	20	---	20
1812.00	1.99	1.71	57	---	57
1814.00	3.46	7.09	102	---	102
1816.00	4.27	14.81	136	---	136
1818.00	4.97	24.04	163	---	163
1820.00	5.65	34.65	184	---	184
1822.00	6.40	46.70	206	---	206
1824.00	7.34	60.43	224	---	224
1826.00	8.22	75.98	242	---	242
1828.00	9.28	93.47	257	---	257
1830.00	10.45	113.19	272	---	272
1832.00	12.02	135.64	285	---	285
1834.00	13.84	161.48	296	---	296
1835.00	---	176	303	0	303
1835.50	---	184	305	2	307
1836.00	16.15	191.44	307	122	429
1836.50	---	200	310	442	752
1837.00	17.60	208.31	313	926	1239
1837.50	---	217	316	1531	1846
1838.00	18.85	226.53	318	2241	2559
1838.50	---	236	320	3047	3367
1839.00	---	246	323	3942	4265
1839.50		256	325	4922	5247
1840.00	20.92	266.28	328	5983	6311
1840.50	---	277	330	7124	7454
1841.00	---	289	332	8342	8674
1841.50	---	300	334	9636	9970
1842.00	23.64	310.81	336	11004	11339
1842.50	---	323	338	12443	12781
1843.00	---	336	340	13952	14292
1843.50	---	348	342	15612	15954
1844.00	26.45	360.88	343	18097	18440
1844.50	---	375	345	21240	21585
1845.00	---	389	347	24860	25207
1845.50	---	402	349	28891	29239
1846.00	28.99	416.30	350	33293	33643
1846.50	---	431	352	38041	38393
1847.00	---	446	353	43118	43471
1847.50	---	461	355	48509	48864
1848.00	31.12	476.39	357	54205	54561
1848.50	---	492	358	60196	60554
1849.00	---	509	360	66475	66835
1849.50	---	525	361	73037	73399
1850.00	33.28	540.78	363	79878	80241

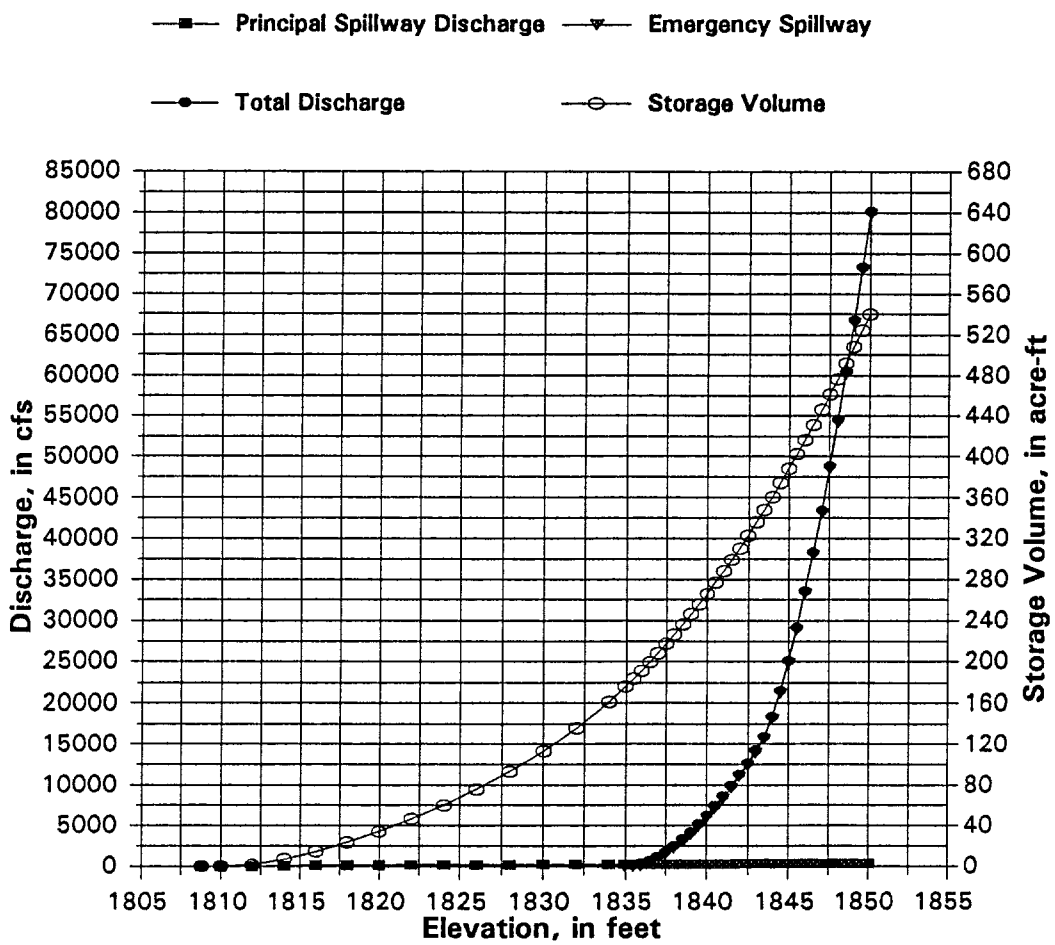

Figure F1
Rating Curves for Aspen Dam

TABLE F2
Storage and Discharge vs Stage for North Heights Dam

Stage NGVD 29 Datum	Surface Area (acres)	Storage Volume (acre-feet)	Discharge, in cfs		
			Principal Spillway	Emergency Spillway	Total
1779.15	0.00	0.00	0	---	0
1784.00	0.09	0.15	95	---	95
1786.00	0.63	0.78	131	---	131
1788.00	1.41	2.77	160	---	160
1790.00	1.98	6.15	181	---	181
1792.00	2.62	10.73	203	---	203
1794.00	3.03	16.38	221	---	221
1796.00	3.65	23.05	239	---	239
1798.00	4.62	31.30	254	---	254
1800.00	5.59	41.49	269	---	269
1802.00	6.58	53.65	283	---	283
1804.00	7.68	67.89	294	---	294
1806.00	8.83	84.39	305	---	305
1808.00	10.23	103.43	316	---	316
1810.00	12.55	126.17	325	---	325
1810.50	---	133	327	0	327
1811.00	---	140	329	6	335
1811.50	---	147	331	130	461
1812.00	15.81	154.47	333	466	799
1812.50	---	163	335	951	1286
1813.00	---	171	337	1551	1888
1813.50	---	179	339	2251	2590
1814.00	17.16	187.43	341	3042	3383
1814.50	---	196	343	3919	4262
1815.00	---	205	345	4877	5222
1815.50	---	214	347	5914	6261
1816.00	18.44	223.03	349	7027	7376
1816.50	---	233	351	8214	8564
1817.00	---	242	352	9474	9826
1817.50	---	252	354	10805	11159
1818.00	19.92	261.38	355	12207	12563
1818.50	---	272	357	13681	14038
1819.00	---	282	359	15311	15670
1819.50	---	292	360	17650	18010
1820.00	20.71	302.00	361	20684	21045
1820.50	---	313	363	24196	24559
1821.00	---	324	364	28115	28479
1821.50	---	335	366	32400	32765
1822.00	23.18	345.87	367	37025	37392
1822.50	---	358	368	41972	42340
1823.00	---	370	370	47226	47596
1823.50	---	382	371	52778	53149
1824.00	25.19	394.23	372	58617	58989
1824.50	---	407	374	64738	65111
1825.00	25.95	419.79	375	71134	71509

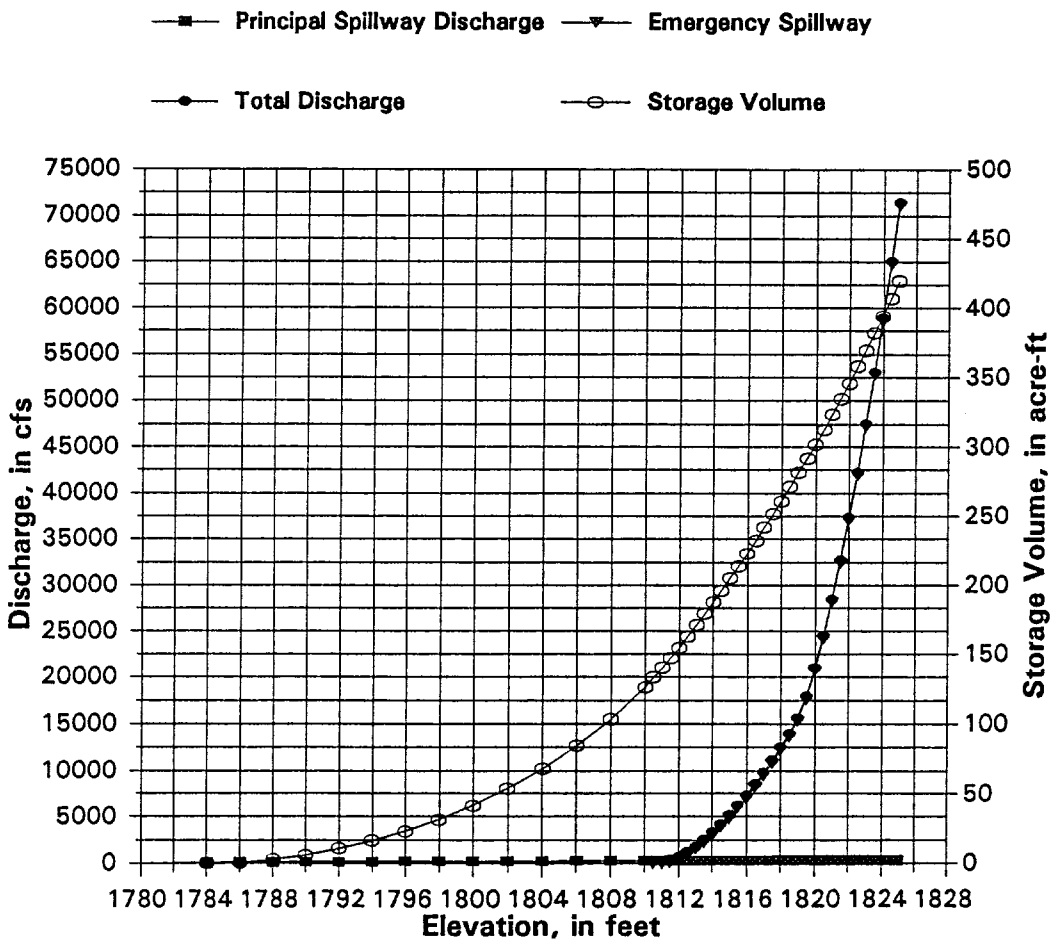

Figure F2
Rating Curves for North Heights Dam

TABLE F3
Storage and Discharge vs Stage for SunRidge Canyon Dam

Stage NGVD 29 Datum	Surface Area (acres)	Storage Volume (acre-feet)	Discharge, in cfs		
			Principal Spillway	Emergency Spillway	Total
1884.84	0.00	0.00	0	---	0
1886.00	0.00	0.00	18	---	18
1888.00	0.00	0.00	55	---	55
1890.00	0.00	0.00	100	---	100
1892.00	0.14	0.09	135	---	135
1894.00	0.39	0.60	163	---	163
1896.00	0.48	1.47	185	---	185
1898.00	0.72	2.66	205	---	205
1900.00	0.92	4.30	223	---	223
1902.00	1.02	6.24	241	---	241
1904.00	1.28	8.53	257	---	257
1906.00	1.46	11.27	272	---	272
1908.00	1.83	14.55	285	---	285
1910.00	2.28	18.66	296	---	296
1912.00	2.81	23.74	307	---	307
1914.00	3.30	29.84	318	---	318
1916.00	4.04	37.17	326	---	326
1918.00	5.10	46.29	333	---	333
1920.00	6.15	57.52	341	---	341
1922.00	7.32	70.97	348	---	348
1924.00	8.37	86.65	355	---	355
1924.50	---	91	358	0	358
1925.00	---	96	359	4	363
1925.50	---	100	361	88	449
1926.00	9.90	104.90	362	328	690
1926.50	---	110	364	712	1075
1927.00	---	116	365	1224	1589
1927.50	---	121	366	1841	2207
1928.00	11.47	126.25	368	2553	2921
1928.50	---	132	369	3356	3725
1929.00	---	139	370	4246	4616
1929.50	---	145	372	5220	5592
1930.00	13.37	151.07	373	6277	6650
1930.50	---	158	374	7417	7791
1931.00	---	165	375	8638	9013
1931.50	---	172	377	9941	10317
1932.00	15.08	179.50	378	11325	11702
1932.50	---	187	379	12790	13169
1933.00	---	195	380	14517	14897
1933.50	---	203	381	16749	17131
1934.00	16.66	211.23	382	19390	19772
1934.50	---	220	383	22357	22740
1935.00	---	229	385	25613	25998
1935.50	---	238	386	29141	29527
1936.00	18.75	246.62	387	32928	33315
1936.50	---	256	388	36960	37348
1937.00	---	266	389	41229	41618
1937.50	---	276	390	45729	46119
1938.00	20.23	285.59	391	50456	50847
1938.50	---	296	392	55405	55797
1939.00	20.89	306.14	393	60573	60966

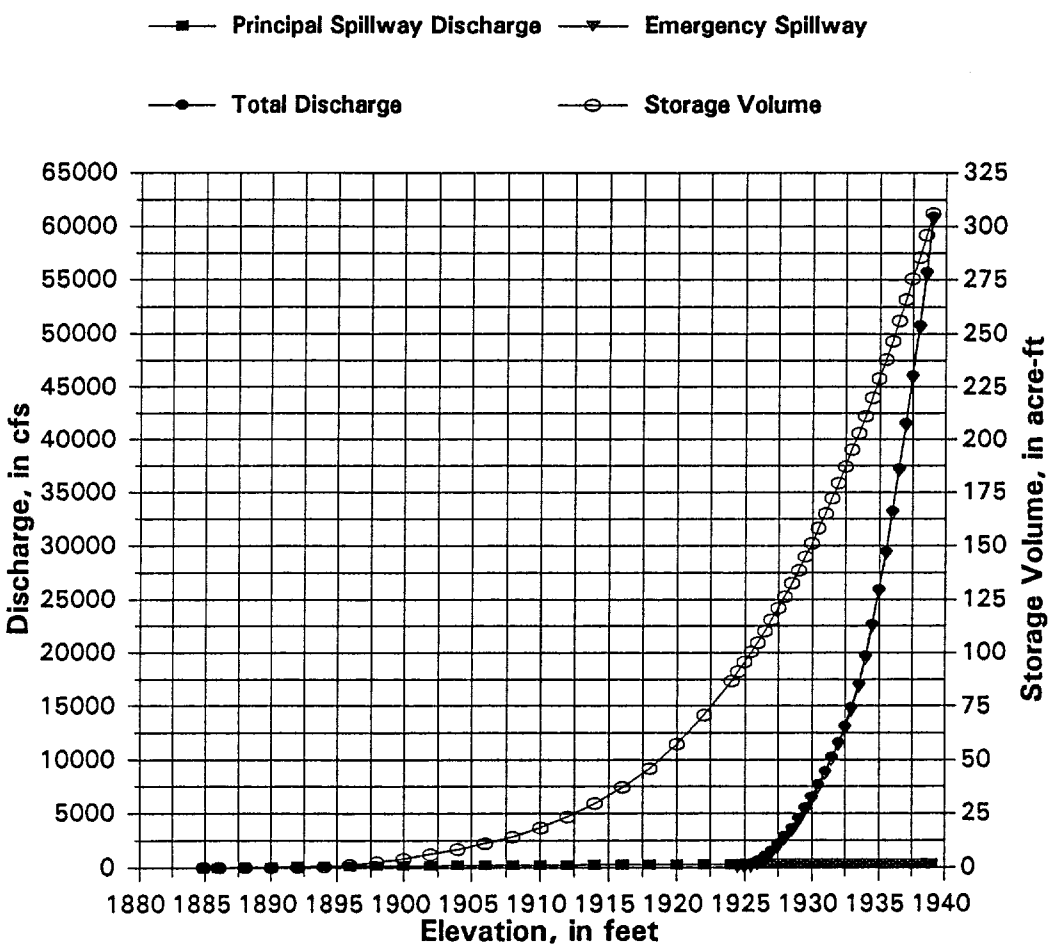

Figure F3
Rating Curves for SunRidge Canyon Dam

TABLE F4
Storage and Discharge vs Stage for Golden Eagle Park Dam

Stage NGVD 29 Datum	Surface Area (acres)	Storage Volume (acre-feet)	Discharge, in cfs		
			Principal Spillway	Emergency Spillway	Total
1694.69	0.00	0.00	0	---	0
1696.00	0.00	0.00	38	---	38
1698.00	0.00	0.00	95	---	95
1700.00	0.05	0.03	214	---	214
1702.00	0.45	0.47	312	---	312
1704.00	1.54	2.35	384	---	384
1706.00	3.61	7.35	443	---	443
1708.00	5.99	16.85	497	---	497
1710.00	8.91	31.66	543	---	543
1712.00	12.23	52.71	587	---	587
1714.00	15.99	80.85	628	---	628
1714.50	---	90	637	0	637
1715.00	---	98	646	4	651
1715.50	---	107	656	140	795
1716.00	19.36	116.14	665	431	1097
1716.50	---	126	675	882	1557
1717.00	---	136	684	1499	2182
1717.50	---	146	693	2293	2986
1718.00	20.73	156.22	701	3242	3943
1718.50	---	167	710	4336	5046
1719.00	---	179	719	5537	6256
1719.50	---	190	727	6817	7543
1720.00	23.97	200.89	735	8182	8917
1720.50	---	214	743	9633	10376
1721.00	---	226	751	11151	11902
1721.50	---	239	759	12752	13511
1722.00	27.28	252.10	767	14762	15529
1722.50	---	267	775	17547	18321
1723.00	---	281	782	20877	21659
1723.50	---	296	790	24687	25477
1724.00	31.13	310.47	797	28946	29743
1724.50	---	327	804	33637	34442
1725.00	---	344	811	38754	39565
1725.50	---	360	818	44238	45056
1726.00	35.04	376.60	825	49808	50633
1726.50	---	395	832	55636	56467
1727.00	36.73	413	838	61727	62566
1727.50	---	432	845	68076	68921
1728.00	38.42	450.02	852	74675	75527

Note: NE Corner of High School Cafeteria EL = 1716.49

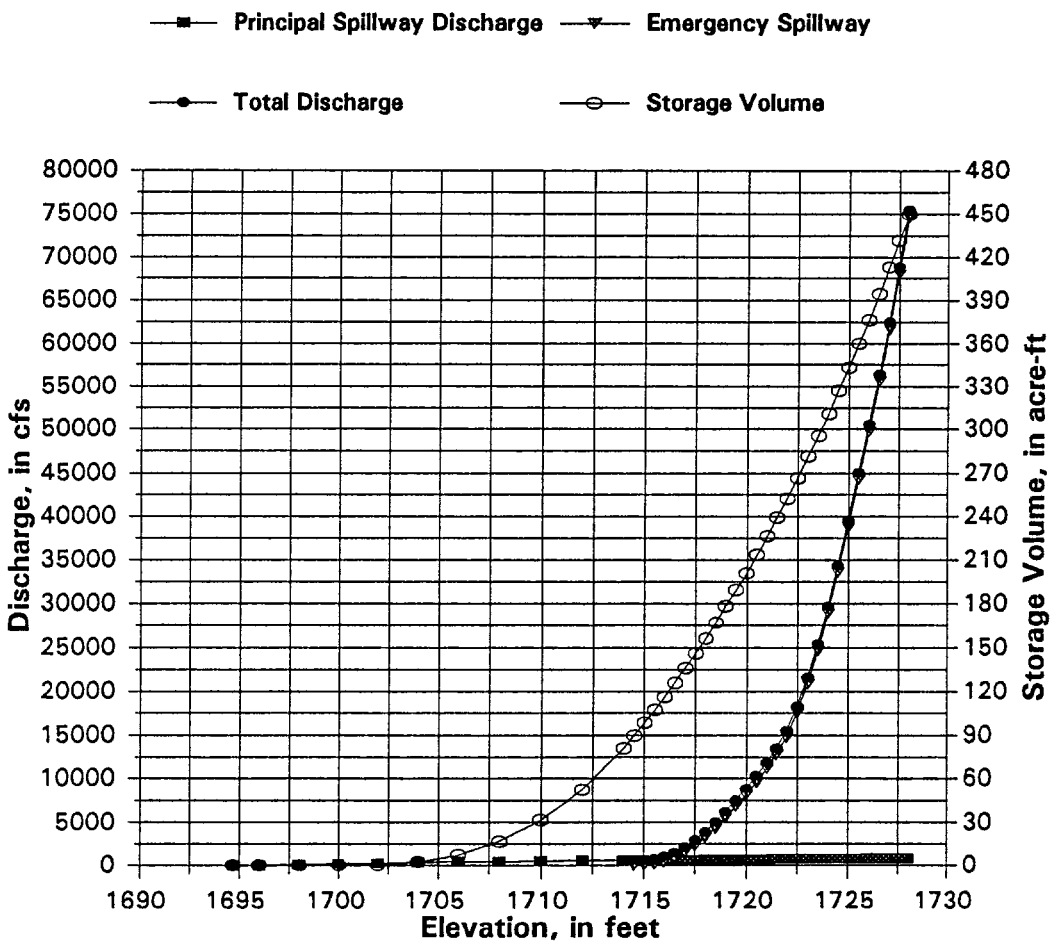

Figure F4
Rating Curves for Golden Eagle Park Dam

CURRENT DATE: 09-06-1995 FILE DATE: 09-06-1995
CURRENT TIME: 16:35:08 FILE NAME: DAM6

****
********** FHWA CULVERT ANALYSIS **********
********** HY-8, VERSION 4.0 **********
****

CULV #	SITE DATA: INLET ELEV. (FT)	OUTLET ELEV. (FT)	CULVERT LENGTH (FT)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (FT)	RISE (FT)	MANNING n	INLET TYPE
1	1808.61	1805.53	163.27	1 RCP	4.00	4.00	.012	CONVENTIONAL
2								
3								
4								
5								
6								

****

SUMMARY OF CULVERT FLOWS (CFS) FILE: DAM6 DATE: 09-06-1995

ELEV (FT)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1808.61	0	0	0	0	0	0	0	0	1
1811.33	40	40	0	0	0	0	0	0	1
1812.89	80	80	0	0	0	0	0	0	1
1814.85	120	120	0	0	0	0	0	0	1
1817.67	160	160	0	0	0	0	0	0	1
1821.32	200	200	0	0	0	0	0	0	1
1825.73	240	240	0	0	0	0	0	0	1
1831.10	280	280	0	0	0	0	0	0	1
1838.25	320	320	0	0	0	0	0	0	1
1846.09	360	351	0	0	0	0	0	9	10
1849.41	400	361	0	0	0	0	0	39	5
1844.00	343	343	0	0	0	0	0	OVERTOPPING	

****

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: DAM6 DATE: 09-06-1995

HEAD ELEV(FT)	HEAD ERROR(FT)	TOTAL FLOW(CFS)	FLOW ERROR(CFS)	% FLOW ERROR
1808.61	0.00	0	0	0.00
1811.33	0.00	40	0	0.00
1812.89	0.00	80	0	0.00
1814.85	0.00	120	0	0.00
1817.67	0.00	160	0	0.00
1821.32	0.00	200	0	0.00
1825.73	0.00	240	0	0.00
1831.10	0.00	280	0	0.00
1838.25	0.00	320	0	0.00
1846.09	-0.00	360	0	0.00
1849.41	-0.01	400	0	0.03

****

<1> TOLERANCE (FT) = 0.010 <2> TOLERANCE (%) = 1.000

2

CURRENT DATE: 09-06-1995 FILE DATE: 09-06-1995
CURRENT TIME: 16:35:08 FILE NAME: DAM6

PERFORMANCE CURVE FOR CULVERT # 1 - 1 (4 BY 4) RCP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRITICAL DEPTH (ft)	OUTLET VEL. (fps)	OUTLET DEPTH (ft)	TAILWATER VEL. (fps)	TAILWATER DEPTH (ft)
0	1808.61	0.00	0.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
40	1811.33	2.72	2.72	1-S2n	1.17	1.88	12.53	1.21	3.66	0.65
80	1812.89	4.28	4.28	5-S2n	1.69	2.70	14.65	1.79	4.80	0.82
120	1814.85	6.24	6.24	5-S2n	2.14	3.28	16.01	2.30	5.64	0.97
160	1817.67	9.06	9.06	5-S2n	2.58	3.70	17.19	2.78	6.31	1.09
200	1821.32	12.71	12.71	5-S2n	3.08	4.00	18.26	3.26	6.90	1.20
240	1825.73	17.12	13.28	6-FFn	4.00	4.00	19.10	4.00	7.42	1.31
280	1831.10	22.49	17.74	6-FFn	4.00	4.00	22.28	4.00	7.89	1.40
320	1838.25	29.64	22.89	6-FFn	4.00	4.00	25.46	4.00	8.30	1.49
351	1846.08	37.47	27.30	6-FFn	4.00	4.00	27.91	4.00	8.69	1.58
361	1849.41	40.80	28.87	6-FFn	4.00	4.00	28.72	4.00	9.06	1.66

El. inlet face invert 1808.61 ft El. outlet invert 1805.53 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION (FT)	0.00
INLET ELEVATION (FT)	1808.61
OUTLET STATION (FT)	163.24
OUTLET ELEVATION (FT)	1805.53
NUMBER OF BARRELS	1
SLOPE (V-FT/H-FT)	0.0189
CULVERT LENGTH ALONG SLOPE (FT)	163.27

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	4.00 FT
BARREL MATERIAL	CONCRETE
BARREL MANNING'S N	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE WITH HEADWALL
INLET DEPRESSION	NONE

CURRENT DATE: 09-06-1995 FILE DATE: 09-06-1995
CURRENT TIME: 16:35:08 FILE NAME: DAM6

****
********** TAILWATER **********
****

***** USER DEFINED CHANNEL CROSS-SECTION FILE NAME: DAM6
MAIN CHANNEL AND LT & RT OVER BANKS FILE DATE: 09-06-1995

LEFT CHANNEL BOUNDARY	2
RIGHT CHANNEL BOUNDARY	3
MANNING N LEFT OVER BANK	0.055
MANNING N MAIN CHANNEL	0.045
MANNING N RIGHT OVER BAN	0.060
SLOPE OF CHANNEL (FT/FT)	0.0500

CROSS-SECTION COORD. NO.	X (FT)	Y (FT)
1	1000.00	1812.53
2	1014.00	1806.13
3	1046.00	1805.53
4	1060.00	1830.53

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (CFS)	W.S.E. (FT)	FROUDE NUMBER	DEPTH (FT)	VEL. (FPS)	SHEAR (PSF)
0.00	1805.53	0.000	0.00	0.00	0.00
40.00	1806.18	1.092	0.65	3.66	1.09
80.00	1806.35	1.168	0.82	4.80	1.64
120.00	1806.50	1.216	0.97	5.64	2.08
160.00	1806.62	1.251	1.09	6.31	2.47
200.00	1806.73	1.279	1.20	6.90	2.82
240.00	1806.84	1.303	1.31	7.42	3.14
280.00	1806.93	1.323	1.40	7.89	3.44
320.00	1807.02	1.340	1.49	8.30	3.72
360.00	1807.11	1.355	1.58	8.69	3.99
400.00	1807.19	1.369	1.66	9.06	4.24

****
********** ROADWAY OVERTOPPING DATA **********
****

ROADWAY SURFACE	GRAVEL
EMBANKMENT TOP WIDTH (FT)	1.00
CREST LENGTH (FT)	1.00
OVERTOPPING CREST ELEVATION (FT)	1844.00

****

CURRENT DATE: 09-06-1995 FILE DATE: 09-06-1995
CURRENT TIME: 16:36:38 FILE NAME: DAM7

****
********** FHWA CULVERT ANALYSIS **********
********** HY-8, VERSION 4.0 **********
****

CULV #	SITE DATA: INLET ELEV. (FT)	OUTLET ELEV. (FT)	CULVERT LENGTH (FT)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (FT)	RISE (FT)	MANNING n	INLET TYPE
1	1884.66	1882.47	210.04	1 RCP	4.00	4.00	.012	CONVENTIONAL
2								
3								
4								
5								
6								

****

SUMMARY OF CULVERT FLOWS (CFS) FILE: DAM7 DATE: 09-06-1995

ELEV (FT)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1884.66	0	0	0	0	0	0	0	0	1
1887.40	40	40	0	0	0	0	0	0	1
1888.96	80	80	0	0	0	0	0	0	1
1890.92	120	120	0	0	0	0	0	0	1
1893.73	160	160	0	0	0	0	0	0	1
1897.39	200	200	0	0	0	0	0	0	1
1901.80	240	240	0	0	0	0	0	0	1
1907.16	280	280	0	0	0	0	0	0	1
1914.32	320	320	0	0	0	0	0	0	1
1925.15	360	360	0	0	0	0	0	0	1
1935.71	400	386	0	0	0	0	0	14	13
1933.00	380	380	0	0	0	0	0	OVERTOPPING	

****

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: DAM7 DATE: 09-06-1995

HEAD ELEV(FT)	HEAD ERROR(FT)	TOTAL FLOW(CFS)	FLOW ERROR(CFS)	% FLOW ERROR
1884.66	0.00	0	0	0.00
1887.40	0.00	40	0	0.00
1888.96	0.00	80	0	0.00
1890.92	0.00	120	0	0.00
1893.73	0.00	160	0	0.00
1897.39	0.00	200	0	0.00
1901.80	0.00	240	0	0.00
1907.16	0.00	280	0	0.00
1914.32	0.00	320	0	0.00
1925.15	0.00	360	0	0.00
1935.71	-0.00	400	0	0.00

****

<1> TOLERANCE (FT) = 0.010 <2> TOLERANCE (%) = 1.000

2

CURRENT DATE: 09-06-1995 FILE DATE: 09-06-1995
CURRENT TIME: 16:36:38 FILE NAME: DAM7

PERFORMANCE CURVE FOR CULVERT # 1 - 1 (4 BY 4) RCP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRITICAL DEPTH (ft)	OUTLET VEL. (fps)	OUTLET DEPTH (ft)	TAILWATER VEL. (fps)	TAILWATER DEPTH (ft)
0	1884.66	0.00	0.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
40	1887.40	2.74	2.74	1-S2n	1.36	1.88	10.61	1.36	4.68	0.65
80	1888.96	4.30	4.30	5-S2n	2.01	2.70	12.30	2.05	6.01	0.93
120	1890.92	6.26	6.26	5-S2n	2.60	3.28	13.52	2.66	6.96	1.15
160	1893.73	9.07	9.07	5-S2n	3.32	3.70	14.24	3.36	7.71	1.34
200	1897.39	12.73	11.16	6-FFn	4.00	4.00	15.92	4.00	8.31	1.50
240	1901.80	17.14	15.27	6-FFn	4.00	4.00	19.10	4.00	8.85	1.66
280	1907.16	22.50	20.14	6-FFn	4.00	4.00	22.28	4.00	9.32	1.80
320	1914.32	29.66	25.75	6-FFn	4.00	4.00	25.46	4.00	9.76	1.94
360	1925.15	40.49	32.10	6-FFn	4.00	4.00	28.65	4.00	10.14	2.06
386	1935.70	51.04	36.67	6-FFn	4.00	4.00	30.73	4.00	10.49	2.18

El. inlet face invert 1884.66 ft El. outlet invert 1882.47 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION (FT)	0.00
INLET ELEVATION (FT)	1884.66
OUTLET STATION (FT)	210.03
OUTLET ELEVATION (FT)	1882.47
NUMBER OF BARRELS	1
SLOPE (V-FT/H-FT)	0.0104
CULVERT LENGTH ALONG SLOPE (FT)	210.04

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	4.00 FT
BARREL MATERIAL	CONCRETE
BARREL MANNING'S N	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE WITH HEADWALL
INLET DEPRESSION	NONE

CURRENT DATE: 09-06-1995
CURRENT TIME: 16:36:38

FILE DATE: 09-06-1995
FILE NAME: DAM7

****
********** TAILWATER **********
****

***** USER DEFINED CHANNEL CROSS-SECTION

FILE NAME: DAM7
FILE DATE: 09-06-1995

MAIN CHANNEL AND LT & RT OVER BANKS	
LEFT CHANNEL BOUNDARY	2
RIGHT CHANNEL BOUNDARY	4
MANNING N LEFT OVER BANK	0.065
MANNING N MAIN CHANNEL	0.050
MANNING N RIGHT OVER BAN	0.065
SLOPE OF CHANNEL (FT/FT)	0.0580

CROSS-SECTION COORD. NO.	X (FT)	Y (FT)
1	1000.00	1890.87
2	1015.00	1882.47
3	1030.00	1882.67
4	1035.00	1884.67
5	1067.00	1897.27

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (CFS)	W.S.E. (FT)	FROUDE NUMBER	DEPTH (FT)	VEL. (FPS)	SHEAR (PSF)
0.00	1882.47	0.000	0.00	0.00	0.00
40.00	1883.12	1.131	0.65	4.68	1.91
80.00	1883.40	1.203	0.93	6.01	2.79
120.00	1883.62	1.246	1.15	6.96	3.47
160.00	1883.81	1.277	1.34	7.71	4.04
200.00	1883.97	1.301	1.50	8.31	4.53
240.00	1884.13	1.320	1.66	8.85	4.97
280.00	1884.27	1.337	1.80	9.32	5.38
320.00	1884.41	1.351	1.94	9.76	5.76
360.00	1884.53	1.364	2.06	10.14	6.10
400.00	1884.65	1.375	2.18	10.49	6.42

****
********** ROADWAY OVERTOPPING DATA **********
****

ROADWAY SURFACE	GRAVEL
EMBANKMENT TOP WIDTH (FT)	1.00
CREST LENGTH (FT)	1.00
OVERTOPPING CREST ELEVATION (FT)	1933.00

****

CURRENT DATE: 10-15-1996
CURRENT TIME: 08:02:59

FILE DATE: 09-06-1995
FILE NAME: DAM11

****
********** FHWA CULVERT ANALYSIS **********
********** HY-8, VERSION 4.1 **********
****

CULV #	SITE DATA: INLET ELEV. (FT)	OUTLET ELEV. (FT)	CULVERT LENGTH (FT)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (FT)	RISE (FT)	MANNING n	INLET TYPE
1	1778.97	1776.10	195.54	1 RCP	3.00	3.00	.012	CONVENTIONAL
2								
3								
4								
5								
6								

****

SUMMARY OF CULVERT FLOWS (CFS) FILE: DAM11 DATE: 09-06-1995

ELEV (FT)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1778.97	0	0	0	0	0	0	0	0	1
1782.25	40	40	0	0	0	0	0	0	1
1786.03	80	80	0	0	0	0	0	0	1
1792.40	120	120	0	0	0	0	0	0	1
1802.63	160	160	0	0	0	0	0	0	1
1825.68	200	198	0	0	0	0	0	2	25
1830.26	240	203	0	0	0	0	0	37	7
1833.34	280	205	0	0	0	0	0	75	5
1835.96	320	208	0	0	0	0	0	112	4
1838.32	360	210	0	0	0	0	0	150	4
1840.49	400	211	0	0	0	0	0	189	4
1825.00	197	197	0	0	0	0	0	OVERTOPPING	

****

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: DAM11 DATE: 09-06-1995

HEAD ELEV(FT)	HEAD ERROR(FT)	TOTAL FLOW(CFS)	FLOW ERROR(CFS)	% FLOW ERROR
1778.97	0.00	0	0	0.00
1782.25	0.00	40	0	0.00
1786.03	0.00	80	0	0.00
1792.40	0.00	120	0	0.00
1802.63	0.00	160	0	0.00
1825.68	-0.01	200	0	0.03
1830.26	-0.00	240	0	0.00
1833.34	-0.00	280	0	0.01
1835.96	-0.00	320	0	0.03
1838.32	-0.00	360	0	0.02
1840.49	-0.00	400	0	0.01

****

<1> TOLERANCE (FT) = 0.010 <2> TOLERANCE (%) = 1.000

2

CURRENT DATE: 10-15-1996 FILE DATE: 09-06-1995
CURRENT TIME: 08:02:59 FILE NAME: DAM11

PERFORMANCE CURVE FOR CULVERT # 1 - 1 (3 BY 3) RCP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRITICAL DEPTH (ft)	OUTLET VEL. (fps)	OUTLET DEPTH (ft)	TAILWATER VEL. (fps)	TAILWATER DEPTH (ft)
0	1778.97	0.00	0.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
40	1782.25	3.28	3.28	5-S2n	1.42	2.06	12.15	1.42	4.68	0.67
80	1786.03	7.06	7.06	5-S2n	2.26	2.81	14.04	2.26	6.13	0.89
120	1792.40	13.43	12.21	6-FFn	3.00	3.00	16.98	3.00	7.18	1.07
160	1802.63	23.66	21.60	6-FFn	3.00	3.00	22.64	3.00	8.02	1.23
198	1825.68	46.71	33.07	6-FFn	3.00	3.00	28.04	3.00	8.75	1.37
203	1830.25	51.28	34.58	6-FFn	3.00	3.00	28.68	3.00	9.38	1.50
205	1833.33	54.36	35.53	6-FFn	3.00	3.00	29.07	3.00	9.96	1.62
208	1835.95	56.98	36.29	6-FFn	3.00	3.00	29.38	3.00	10.48	1.73
210	1838.31	59.34	36.95	6-FFn	3.00	3.00	29.64	3.00	10.96	1.83
211	1840.49	61.52	37.53	6-FFn	3.00	3.00	29.88	3.00	11.41	1.94

El. inlet face invert 1778.97 ft El. outlet invert 1776.10 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION (FT)	0.00
INLET ELEVATION (FT)	1778.97
OUTLET STATION (FT)	195.52
OUTLET ELEVATION (FT)	1776.10
NUMBER OF BARRELS	1
SLOPE (V-FT/H-FT)	0.0147
CULVERT LENGTH ALONG SLOPE (FT)	195.54

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	3.00 FT
BARREL MATERIAL	CONCRETE
BARREL MANNING'S N	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE WITH HEADWALL
INLET DEPRESSION	NONE

3

CURRENT DATE: 10-15-1996 FILE DATE: 09-06-1995
CURRENT TIME: 08:02:59 FILE NAME: DAM11

********** TAILWATER **********

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

***** USER DEFINED CHANNEL CROSS-SECTION                    FILE NAME: DAM11
      MAIN CHANNEL AND LT & RT OVER BANKS                   FILE DATE: 09-07-1995
      LEFT CHANNEL BOUNDARY            2
      RIGHT CHANNEL BOUNDARY           3
      MANNING N LEFT OVER BANK         0.055
      MANNING N MAIN CHANNEL           0.045
      MANNING N RIGHT OVER BAN         0.055
      SLOPE OF CHANNEL (FT/FT)         0.0580

      CROSS-SECTION    X          Y
        COORD. NO.    (FT)       (FT)
            1        1000.00    1781.47
            2        1013.59    1776.10
            3        1032.15    1776.53
            4        1059.28    1794.40

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

        FLOW     W.S.E.  FROUDE   DEPTH    VEL.   SHEAR
        (CFS)     (FT)   NUMBER    (FT)   (FPS)   (PSF)
         0.00   1776.10   0.000    0.00    0.00    0.00
        40.00   1776.77   1.228    0.67    4.68    1.63
        80.00   1776.99   1.313    0.89    6.13    2.45
       120.00   1777.17   1.366    1.07    7.18    3.11
       160.00   1777.33   1.404    1.23    8.02    3.67
       200.00   1777.47   1.435    1.37    8.75    4.18
       240.00   1777.60   1.460    1.50    9.38    4.64
       280.00   1777.72   1.482    1.62    9.96    5.07
       320.00   1777.83   1.501    1.73   10.48    5.47
       360.00   1777.93   1.518    1.83   10.96    5.86
       400.00   1778.04   1.534    1.94   11.41    6.22

*******************************************************************************
*************************  ROADWAY OVERTOPPING DATA  *************************
*******************************************************************************

      ROADWAY SURFACE                              PAVED
      EMBANKMENT TOP WIDTH (FT)                     1.00
      CREST LENGTH (FT)                             1.00
      OVERTOPPING CREST ELEVATION (FT)           1825.00

*******************************************************************************
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CURRENT DATE: 03-07-1996
CURRENT TIME: 09:09:27

FILE DATE: 09-06-1995
FILE NAME: DAM4

****
********** FHWA CULVERT ANALYSIS **********
********** HY-8, VERSION 4.1 **********
****

CULV #	SITE DATA: INLET ELEV. (FT)	OUTLET ELEV. (FT)	CULVERT LENGTH (FT)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (FT)	RISE (FT)	MANNING n	INLET TYPE
1	1694.51	1693.24	105.54	1 RCP	6.00	6.00	.012	CONVENTIONAL
2	1696.56	1695.10	105.54	1 CMPA	4.75	3.17	.012	CONVENTIONAL
3								
4								
5								
6								

****

SUMMARY OF CULVERT FLOWS (CFS) FILE: DAM4 DATE: 09-06-1995

ELEV (FT)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1694.51	0	0	0	0	0	0	0	0	0
1697.57	80	69	10	0	0	0	0	0	5
1698.84	160	121	39	0	0	0	0	0	4
1699.92	240	172	69	0	0	0	0	0	3
1701.07	320	226	94	0	0	0	0	0	4
1702.46	400	282	118	0	0	0	0	0	4
1704.17	480	339	141	0	0	0	0	0	3
1706.20	560	395	165	0	0	0	0	0	4
1708.62	640	452	188	0	0	0	0	0	4
1711.36	720	509	211	0	0	0	0	0	4
1714.41	800	566	234	0	0	0	0	0	5
1728.00	1086	768	318	0	0	0	0	OVERTOPPING	

****

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: DAM4 DATE: 09-06-1995

HEAD ELEV(FT)	HEAD ERROR(FT)	TOTAL FLOW(CFS)	FLOW ERROR(CFS)	% FLOW ERROR
1694.51	0.00	0	0	0.00
1697.57	-0.01	80	1	0.65
1698.84	-0.00	160	0	0.02
1699.92	0.01	240	-1	-0.25
1701.07	0.00	320	-0	-0.00
1702.46	0.00	400	-0	-0.00
1704.17	0.01	480	-0	-0.09
1706.20	0.00	560	-0	-0.01
1708.62	0.01	640	-0	-0.03
1711.36	0.00	720	-0	-0.01
1714.41	0.00	800	-0	-0.00

****

<1> TOLERANCE (FT) = 0.010 <2> TOLERANCE (%) = 1.000

2

CURRENT DATE: 03-07-1996 FILE DATE: 09-06-1995
CURRENT TIME: 09:09:27 FILE NAME: DAM4

PERFORMANCE CURVE FOR CULVERT # 1 - 1 (6 BY 6) RCP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRITICAL DEPTH (ft)	OUTLET VEL. (fps)	OUTLET DEPTH (ft)	TAILWATER VEL. (fps)	TAILWATER DEPTH (ft)
0	1694.51	0.00	0.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
69	1697.57	3.06	3.06	1-S2n	1.48	2.21	11.33	1.60	3.96	1.19
121	1698.85	4.34	4.34	1-S2n	1.98	2.96	12.75	2.21	4.90	1.57
172	1699.92	5.41	5.41	1-S2n	2.42	3.57	13.81	2.72	5.53	1.87
226	1701.07	6.56	6.56	5-S2n	2.81	4.11	14.75	3.20	6.01	2.12
282	1702.46	7.95	7.95	5-S2n	3.21	4.58	15.65	3.66	6.40	2.33
339	1704.17	9.66	9.66	5-S2n	3.60	4.97	16.53	4.09	6.74	2.52
395	1706.20	11.69	11.69	5-S2n	4.00	5.29	17.39	4.51	7.03	2.69
452	1708.62	14.11	14.11	5-S2n	4.45	5.61	18.42	4.87	7.29	2.85
509	1711.36	16.85	16.85	5-S2n	5.01	5.93	19.69	5.17	7.54	3.01
566	1714.40	19.89	15.65	6-FFn	6.00	6.00	20.00	6.00	7.75	3.15

El. inlet face invert 1694.51 ft El. outlet invert 1693.24 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION (FT)	0.00
INLET ELEVATION (FT)	1694.51
OUTLET STATION (FT)	105.53
OUTLET ELEVATION (FT)	1693.24
NUMBER OF BARRELS	1
SLOPE (V-FT/H-FT)	0.0120
CULVERT LENGTH ALONG SLOPE (FT)	105.54

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	6.00 FT
BARREL MATERIAL	CONCRETE
BARREL MANNING'S N	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE WITH HEADWALL
INLET DEPRESSION	NONE

3

CURRENT DATE: 03-07-1996 FILE DATE: 09-06-1995
CURRENT TIME: 09:09:27 FILE NAME: DAM4

PERFORMANCE CURVE FOR CULVERT # 2 - 1 (4.75 BY 3.166667) CMPA

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRITICAL DEPTH (ft)	OUTLET VEL. (fps)	OUTLET DEPTH (ft)	TAILWATER VEL. (fps)	TAILWATER DEPTH (ft)
0	1696.56	0.00	0.00	0-NF	0.00	0.00	0.00	0.00	0.00	-1.86
10	1697.58	1.02	1.02	1-S2n	0.43	0.67	7.33	0.43	3.96	-0.67
39	1698.85	2.29	2.29	1-S2n	0.92	1.44	10.36	0.97	4.90	-0.29
69	1699.93	3.37	3.37	5-S2n	1.28	1.99	11.95	1.38	5.53	0.01
94	1701.07	4.51	4.51	5-S2n	1.57	2.37	12.95	1.72	6.01	0.26
118	1702.46	5.90	5.90	5-S2n	1.85	2.64	13.78	2.03	6.40	0.47
141	1704.17	7.61	7.61	5-S2n	2.15	2.86	14.52	2.34	6.74	0.66
165	1706.19	9.63	9.63	5-S2n	2.51	3.08	15.34	2.65	7.03	0.83
188	1708.61	12.05	9.80	6-FFn	3.17	3.17	15.88	3.17	7.29	0.99
211	1711.36	14.80	11.93	6-FFn	3.17	3.17	17.84	3.17	7.54	1.15
234	1714.40	17.84	14.28	6-FFn	3.17	3.17	19.80	3.17	7.75	1.29

El. inlet face invert 1696.56 ft El. outlet invert 1695.10 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION (FT)	0.00
INLET ELEVATION (FT)	1696.56
OUTLET STATION (FT)	105.53
OUTLET ELEVATION (FT)	1695.10
NUMBER OF BARRELS	1
SLOPE (V-FT/H-FT)	0.0138
CULVERT LENGTH ALONG SLOPE (FT)	105.54

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	PIPE ARCH
BARREL SPAN	4.75 FT
BARREL RISE	3.17 FT
BARREL MATERIAL	STEEL OR ALUMINUM
BARREL MANNING'S N	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	HEADWALL
INLET DEPRESSION	NONE

****

4

CURRENT DATE: 03-07-1996 FILE DATE: 09-06-1995
CURRENT TIME: 09:09:27 FILE NAME: DAM4

****
********** TAILWATER **********
****

***** USER DEFINED CHANNEL CROSS-SECTION FILE NAME: DAM4
MAIN CHANNEL AND LT & RT OVER BANKS FILE DATE: 09-06-1995

LEFT CHANNEL BOUNDARY	6
RIGHT CHANNEL BOUNDARY	11
MANNING N LEFT OVER BANK	0.055
MANNING N MAIN CHANNEL	0.045
MANNING N RIGHT OVER BAN	0.025

SLOPE OF CHANNEL (FT/FT) 0.0240

CROSS-SECTION COORD. NO.	X (FT)	Y (FT)
1	1000.00	1701.84
2	1004.00	1698.64
3	1011.00	1696.24
4	1022.00	1695.24
5	1033.00	1695.64
6	1038.00	1696.54
7	1049.00	1694.04
8	1070.00	1693.24
9	1073.00	1693.94
10	1100.00	1697.14
11	1100.10	1697.54
12	1127.00	1704.82

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (CFS)	W.S.E. (FT)	FROUDE NUMBER	DEPTH (FT)	VEL. (FPS)	SHEAR (PSF)
0.00	1693.24	0.000	0.00	0.00	0.00
80.00	1694.43	0.843	1.19	3.96	1.02
160.00	1694.81	0.889	1.57	4.90	1.40
240.00	1695.11	0.916	1.87	5.53	1.68
320.00	1695.36	0.935	2.12	6.01	1.91
400.00	1695.57	0.950	2.33	6.40	2.10
480.00	1695.76	0.962	2.52	6.74	2.26
560.00	1695.93	0.972	2.69	7.03	2.41
640.00	1696.09	0.981	2.85	7.29	2.55
720.00	1696.25	0.989	3.01	7.54	2.68
800.00	1696.39	0.996	3.15	7.75	2.79

****
********** ROADWAY OVERTOPPING DATA **********
****

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH (FT)	1.00
CREST LENGTH (FT)	1.00
OVERTOPPING CREST ELEVATION (FT)	1728.00

****

```
*********************************************
    UNEVEN WEIR FLOW PROGRAM
    FORTRAN VERSION 1.0
*********************************************


    PROJECT:  Ftn Hills ADMP
    ENGINEER:  wso
    DATE:  10/15/1996
    TIME:   8:45.47



-----------------------------------------------
    INPUT PARAMETERS
-----------------------------------------------


    STARTING WSEL:       1835.00
    MAXIMUM WSEL:        1850.00
    STEP SIZE:              0.50
    BREADTH OF WEIR:      133.00



*********************************************
    INPUT ELEVATION/STATION TABLE.
    PROJECT:  Ftn Hills ADMP
    DATE:  10/15/1996
    TIME:   8:45.47
*********************************************
```

POINT	ELEVATION	STATION
1	1840.90	1000.00
2	1836.30	1010.30
3	1835.60	1151.00
4	1835.40	1264.50
5	1843.90	1283.90
6	1843.70	1323.40
7	1843.40	1424.50
8	1843.60	1524.50
9	1843.40	1626.30
10	1843.30	1723.90
11	1843.40	1730.80
12	1843.40	1820.30
13	1843.40	1917.80
14	1843.20	1981.80
15	1843.20	2017.80
16	1843.50	2117.90
17	1860.40	2187.90

```
*******************************************
    WEIR COEFFICIENT TABLE
    PROJECT:  Ftn Hills ADMP
    DATE:  10/15/1996
    TIME:   8:45.47
*******************************************
```

REFERENCE: COE CHART - UPPER CURVE

POINT	HEAD	COEFFICIENT
1	0.00	2.5000
2	0.50	2.5125
3	1.00	2.5251
4	1.50	2.5376
5	2.00	2.5501
6	2.50	2.5627
7	3.00	2.5752
8	3.50	2.5877
9	4.00	2.6003
10	4.50	2.6128
11	5.00	2.6253
12	5.50	2.6378
13	6.00	2.6504
14	6.50	2.6629
15	7.00	2.6754
16	7.50	2.6880
17	8.00	2.7005
18	8.50	2.7130
19	9.00	2.7256
20	9.50	2.7381
21	10.00	2.7506
22	10.50	2.7632
23	11.00	2.7757
24	11.50	2.7882
25	12.00	2.8008
26	12.50	2.8133
27	13.00	2.8258
28	13.50	2.8383
29	14.00	2.8509
30	14.50	2.8634
31	15.00	2.8759

```
*********************************************
    UNEVEN WEIR FLOW PROGRAM
    FORTRAN VERSION 1.0
    PROJECT:  Ftn Hills ADMP
    DATE:  10/15/1996
    TIME:   8:45.47
*********************************************
```

ELEVATION	DISCHARGE (CFS)
1835.00	0.00
1835.50	1.80
1836.00	122.35
1836.50	441.59
1837.00	925.56
1837.50	1530.93
1838.00	2241.16
1838.50	3046.83
1839.00	3941.76
1839.50	4921.60
1840.00	5983.15
1840.50	7124.00
1841.00	8342.30
1841.50	9636.25
1842.00	11003.52
1842.50	12442.62
1843.00	13952.37
1843.50	15612.38
1844.00	18097.01
1844.50	21239.84
1845.00	24860.33
1845.50	28890.80
1846.00	33292.93
1846.50	38041.40
1847.00	43118.09
1847.50	48509.42
1848.00	54204.75
1848.50	60195.58
1849.00	66475.05
1849.50	73037.47
1850.00	79878.09

```
*********************************************
    UNEVEN WEIR FLOW PROGRAM
    FORTRAN VERSION 1.0
*********************************************


    PROJECT:  Ftn Hills ADMP
    ENGINEER:  wso
    DATE:  10/15/1996
    TIME:   8:59.50



---------------------------------------------
    INPUT PARAMETERS
---------------------------------------------


    STARTING WSEL:       1925.00
    MAXIMUM WSEL:        1939.00
    STEP SIZE:              0.50
    BREADTH OF WEIR:      100.00



*********************************************
    INPUT ELEVATION/STATION TABLE.
    PROJECT:  Ftn Hills ADMP
    DATE:  10/15/1996
    TIME:   8:59.50
*********************************************
```

POINT	ELEVATION	STATION
1	1935.40	1000.00
2	1926.40	1050.50
3	1924.80	1165.00
4	1925.60	1279.50
5	1933.40	1302.20
6	1933.40	1355.90
7	1932.60	1407.00
8	1932.60	1431.60
9	1932.70	1504.00
10	1932.70	1606.10
11	1932.60	1706.50
12	1933.00	1806.24
13	1961.00	1902.00

```
*********************************************
    WEIR COEFFICIENT TABLE
    PROJECT:  Ftn Hills ADMP
    DATE:  10/15/1996
    TIME:   8:59.50
*********************************************
```

REFERENCE: COE CHART - UPPER CURVE

POINT	HEAD	COEFFICIENT
1	0.00	2.5000
2	0.50	2.5167
3	1.00	2.5333
4	1.50	2.5500
5	2.00	2.5667
6	2.50	2.5833
7	3.00	2.6000
8	3.50	2.6167
9	4.00	2.6333
10	4.50	2.6500
11	5.00	2.6667
12	5.50	2.6833
13	6.00	2.7000
14	6.50	2.7167
15	7.00	2.7333
16	7.50	2.7500
17	8.00	2.7667
18	8.50	2.7833
19	9.00	2.8000
20	9.50	2.8167
21	10.00	2.8333
22	10.50	2.8500
23	11.00	2.8667
24	11.50	2.8833
25	12.00	2.9000
26	12.50	2.9167
27	13.00	2.9333
28	13.50	2.9500
29	14.00	2.9667

```
*********************************************
    UNEVEN WEIR FLOW PROGRAM
    FORTRAN VERSION 1.0
    PROJECT:  Ftn Hills ADMP
    DATE:  10/15/1996
    TIME:   8:59.50
*********************************************
```

ELEVATION	DISCHARGE (CFS)
1925.00	3.84
1925.50	88.42
1926.00	327.61
1926.50	711.68
1927.00	1223.60
1927.50	1840.62
1928.00	2553.17
1928.50	3355.92
1929.00	4245.50
1929.50	5219.72
1930.00	6277.13
1930.50	7416.77
1931.00	8638.08
1931.50	9940.76
1932.00	11324.73
1932.50	12790.06
1933.00	14516.62
1933.50	16749.36
1934.00	19389.61
1934.50	22356.60
1935.00	25613.38
1935.50	29140.84
1936.00	32928.05
1936.50	36960.24
1937.00	41229.38
1937.50	45729.43
1938.00	50455.70
1938.50	55404.50
1939.00	60572.87

```
*********************************************
    UNEVEN WEIR FLOW PROGRAM
    FORTRAN VERSION 1.0
*********************************************


    PROJECT:  Ftn Hills ADMP
    ENGINEER:  wso
    DATE:  10/14/1996
    TIME:  15:50. 5




---------------------------------------------
    INPUT PARAMETERS
---------------------------------------------


    STARTING WSEL:       1810.50
    MAXIMUM WSEL:        1825.00
    STEP SIZE:              0.50
    BREADTH OF WEIR:      147.00


*********************************************
    INPUT ELEVATION/STATION TABLE.
    PROJECT:  Ftn Hills ADMP
    DATE:  10/14/1996
    TIME:  15:50. 5
*********************************************
```

POINT	ELEVATION	STATION
1	1830.60	1000.00
2	1811.60	1022.00
3	1811.20	1143.00
4	1810.80	1268.00
5	1818.40	1294.00
6	1818.70	1345.00
7	1818.90	1442.00
8	1819.20	1541.00
9	1819.20	1635.00
10	1819.20	1732.00
11	1819.00	1826.00
12	1818.90	1923.00
13	1818.80	2019.00
14	1819.00	2116.00
15	1847.50	2229.40

```
*********************************************
    WEIR COEFFICIENT TABLE
    PROJECT:  Ftn Hills ADMP
    DATE:  10/14/1996
    TIME:  15:50. 5
*********************************************
```

REFERENCE: COE CHART - UPPER CURVE

POINT	HEAD	COEFFICIENT
1	0.00	2.5000
2	0.50	2.5113
3	1.00	2.5227
4	1.50	2.5340
5	2.00	2.5454
6	2.50	2.5567
7	3.00	2.5680
8	3.50	2.5794
9	4.00	2.5907
10	4.50	2.6020
11	5.00	2.6134
12	5.50	2.6247
13	6.00	2.6361
14	6.50	2.6474
15	7.00	2.6587
16	7.50	2.6701
17	8.00	2.6814
18	8.50	2.6927
19	9.00	2.7041
20	9.50	2.7154
21	10.00	2.7268
22	10.50	2.7381
23	11.00	2.7494
24	11.50	2.7608
25	12.00	2.7721
26	12.50	2.7834
27	13.00	2.7948
28	13.50	2.8061
29	14.00	2.8175
30	14.50	2.8288

```
*********************************************
    UNEVEN WEIR FLOW PROGRAM
    FORTRAN VERSION 1.0
    PROJECT:  Ftn Hills ADMP
    DATE:  10/14/1996
    TIME:  15:50. 5
*********************************************
```

ELEVATION	DISCHARGE (CFS)
1810.50	0.00
1811.00	5.65
1811.50	129.56
1812.00	465.79
1812.50	951.04
1813.00	1550.89
1813.50	2250.77
1814.00	3042.02
1814.50	3918.86
1815.00	4877.16
1815.50	5913.87
1816.00	7026.64
1816.50	8213.67
1817.00	9473.51
1817.50	10805.04
1818.00	12207.37
1818.50	13680.54
1819.00	15311.01
1819.50	17650.08
1820.00	20683.59
1820.50	24195.89
1821.00	28114.53
1821.50	32399.53
1822.00	37024.78
1822.50	41971.66
1823.00	47226.24
1823.50	52777.62
1824.00	58617.16
1824.50	64737.77
1825.00	71133.61

```
*********************************************
    UNEVEN WEIR FLOW PROGRAM
    FORTRAN VERSION 1.0
*********************************************


    PROJECT:  Ftn Hills ADMP
    ENGINEER:  wso
    DATE:  10/15/1996
    TIME:   9:13.59




---------------------------------------------
    INPUT PARAMETERS
---------------------------------------------


    STARTING WSEL:       1714.50
    MAXIMUM WSEL:        1730.00
    STEP SIZE:              0.50
    BREADTH OF WEIR:       25.00




*********************************************
    INPUT ELEVATION/STATION TABLE.
    PROJECT:  Ftn Hills ADMP
    DATE:  10/15/1996
    TIME:   9:13.59
*********************************************


    POINT    ELEVATION    STATION
    -----    ---------    -------
        1      1737.99    1000.00
        2      1722.85    1059.00
        3      1721.78    1084.00
        4      1721.87    1192.00
        5      1721.47    1283.00
        6      1721.78    1382.50
        7      1721.81    1482.20
        8      1721.49    1581.00
        9      1721.57    1680.00
       10      1721.84    1784.00
       11      1714.86    1805.60
       12      1715.09    1944.90
       13      1715.33    1945.00
       14      1715.69    1994.10
       15      1715.92    1994.20
       16      1715.96    2024.80
       17      1716.63    2024.90
       18      1716.64    2084.30
```

```
*********************************************
    WEIR COEFFICIENT TABLE
    PROJECT:  Ftn Hills ADMP
    DATE:  10/15/1996
    TIME:   9:13.59
*********************************************
```

REFERENCE: COE CHART - UPPER CURVE

POINT	HEAD	COEFFICIENT
1	0.00	2.5000
2	0.50	2.5667
3	1.00	2.6333
4	1.50	2.7000
5	2.00	2.7667
6	2.50	2.8333
7	3.00	2.9000
8	3.50	2.9667
9	4.00	3.0022
10	4.50	3.0067
11	5.00	3.0111
12	5.50	3.0156
13	6.00	3.0200
14	6.50	3.0244
15	7.00	3.0289
16	7.50	3.0333
17	8.00	3.0378
18	8.50	3.0422
19	9.00	3.0467
20	9.50	3.0511
21	10.00	3.0556
22	10.50	3.0600
23	11.00	3.0644
24	11.50	3.0689
25	12.00	3.0733
26	12.50	3.0778
27	13.00	3.0822
28	13.50	3.0867
29	14.00	3.0911
30	14.50	3.0956
31	15.00	3.1000
32	15.50	3.1075

```
*********************************************
    UNEVEN WEIR FLOW PROGRAM
    FORTRAN VERSION 1.0
    PROJECT:  Ftn Hills ADMP
    DATE:  10/15/1996
    TIME:   9:13.59
*********************************************
```

ELEVATION	DISCHARGE (CFS)
1714.50	0.00
1715.00	4.48
1715.50	139.72
1716.00	431.48
1716.50	882.26
1717.00	1498.50
1717.50	2293.33
1718.00	3241.52
1718.50	4336.40
1719.00	5536.87
1719.50	6816.61
1720.00	8181.76
1720.50	9633.07
1721.00	11151.38
1721.50	12751.86
1722.00	14762.16
1722.50	17546.88
1723.00	20876.97
1723.50	24687.29
1724.00	28945.91
1724.50	33637.45
1725.00	38753.94
1725.50	44237.90
1726.00	49807.97
1726.50	55635.52
1727.00	61727.28
1727.50	68076.22
1728.00	74675.08
1728.50	81517.57
1729.00	88598.26
1729.50	95912.34
1730.00	103456.84

APPENDIX G

Channel routing reach data and cross section plots

Table G1
Reach route physical data, existing condition

Reach Route Concentration Points			Length		Elevation (feet)		Slope
Top (1)	Bottom (2)	Cross Section Source (3)	Feet (4)	Miles (5)	Top (6)	Bottom (7)	(ft/ft) (8)
560	599	Fountain Hills FPD North Study	3127	0.5922	1807.2	1722.0	0.0272
578	599	Fountain Hills FPD North Study	3762	0.7125	1777.1	1716.0	0.0162
584	599	Fountain Hills FPD North Study	6526	1.2360	1883.5	1716.0	0.0257

Table G2

Summary of the normal depth reach route hydraulic data for the 100-year, 6-hour storm

Routing Reach	Reach				Manning's Equation						Computed Using HEC-1 Summary Data					NSTEPS from HEC-1 Input File
	Slope in ft/ft	Length in feet	Average n value	Average Q in cfs	Channel Base Width in feet	Flow Area in sf	Flow Top Width in feet	Flow Depth in feet	Froude Number	Average Velocity in fps	Wave Celerity in fps	Velocity Range in fps Min.	Velocity Range in fps Max.	Travel Time in hours	Travel NSTEPS Computed	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
560599	0.027	3127	0.026	295	35.5	44.9	67.0	0.9	1.56	7.3	10.4	3.1	15.7	0.0833	1	1
578599	0.016	3762	0.047	1113	21.6	172.6	86.6	3.7	0.83	6.6	12.5	3.8	18.9	0.0833	1	1
584599	0.026	6526	0.050	864	50.7	140.8	86.8	2.4	0.89	6.4	10.9	4.3	16.4	0.1667	2	2

Table G3

Summary of the normal depth reach route hydraulic data for the 100-year, 24-hour storm

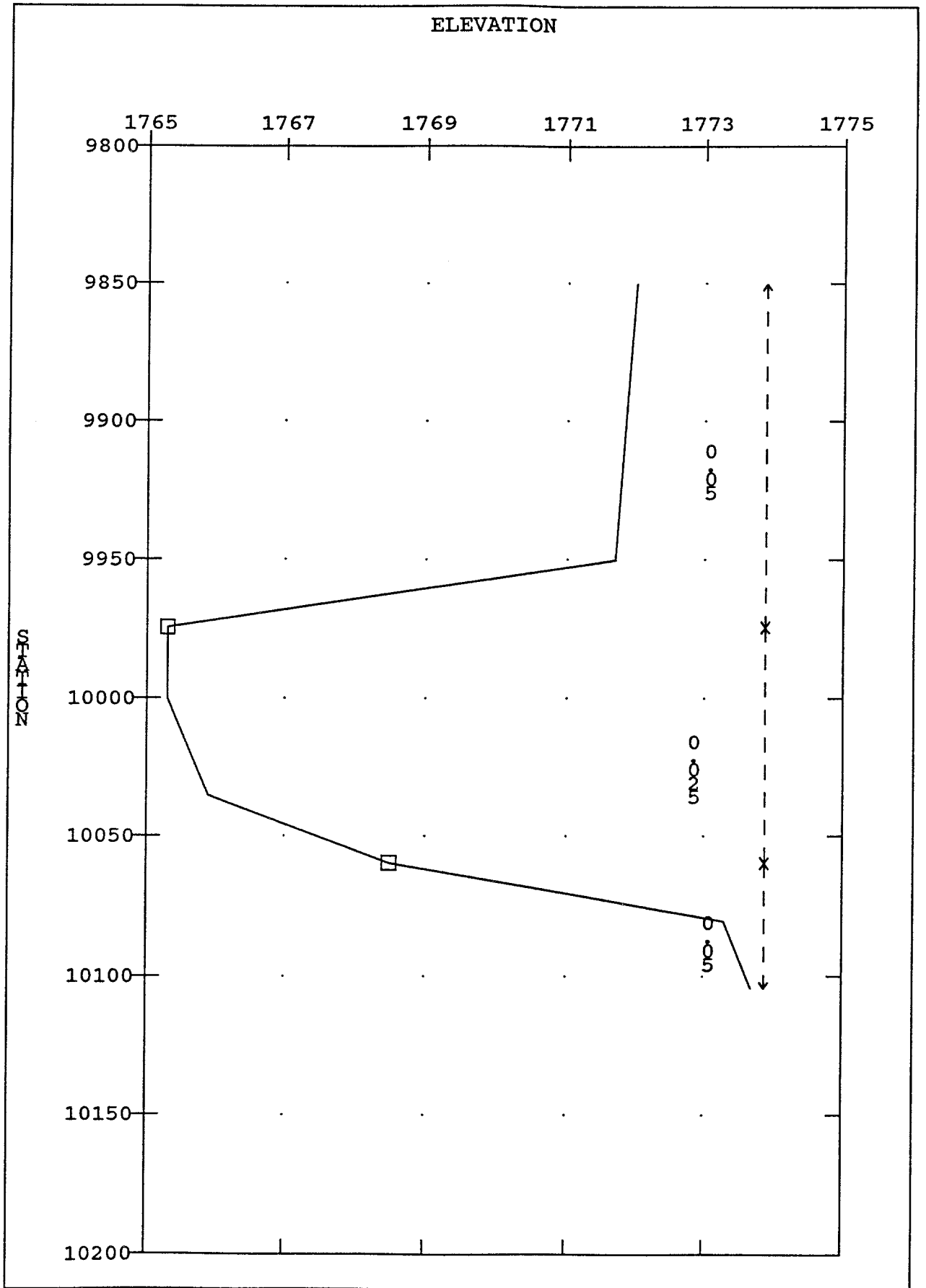
Routing Reach	Reach				Manning's Equation						Computed Using HEC-1 Summary Data					NSTEPS from HEC-1 Input File
	Slope in ft/ft	Length in feet	Average n value	Average Q in cfs	Channel Base Width in feet	Flow Area in sf	Flow Top Width in feet	Flow Depth in feet	Froude Number	Average Velocity in fps	Wave Celerity in fps	Velocity Range in fps Min.	Velocity Range in fps Max.	Travel Time in hours	Travel NSTEPS Computed	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
560599	0.027	3127	0.026	284	35.5	44.3	66.9	0.9	1.56	7.2	10.4	3.1	15.7	0.0833	1	1
578599	0.016	3762	0.047	499	21.6	101.0	79.0	2.9	0.81	5.2	4.2	1.9	4.7	0.2500	3	3
584599	0.026	6526	0.050	396	50.7	84.5	74.1	1.7	0.82	5.0	7.3	3.3	8.2	0.2500	3	3

Table G4

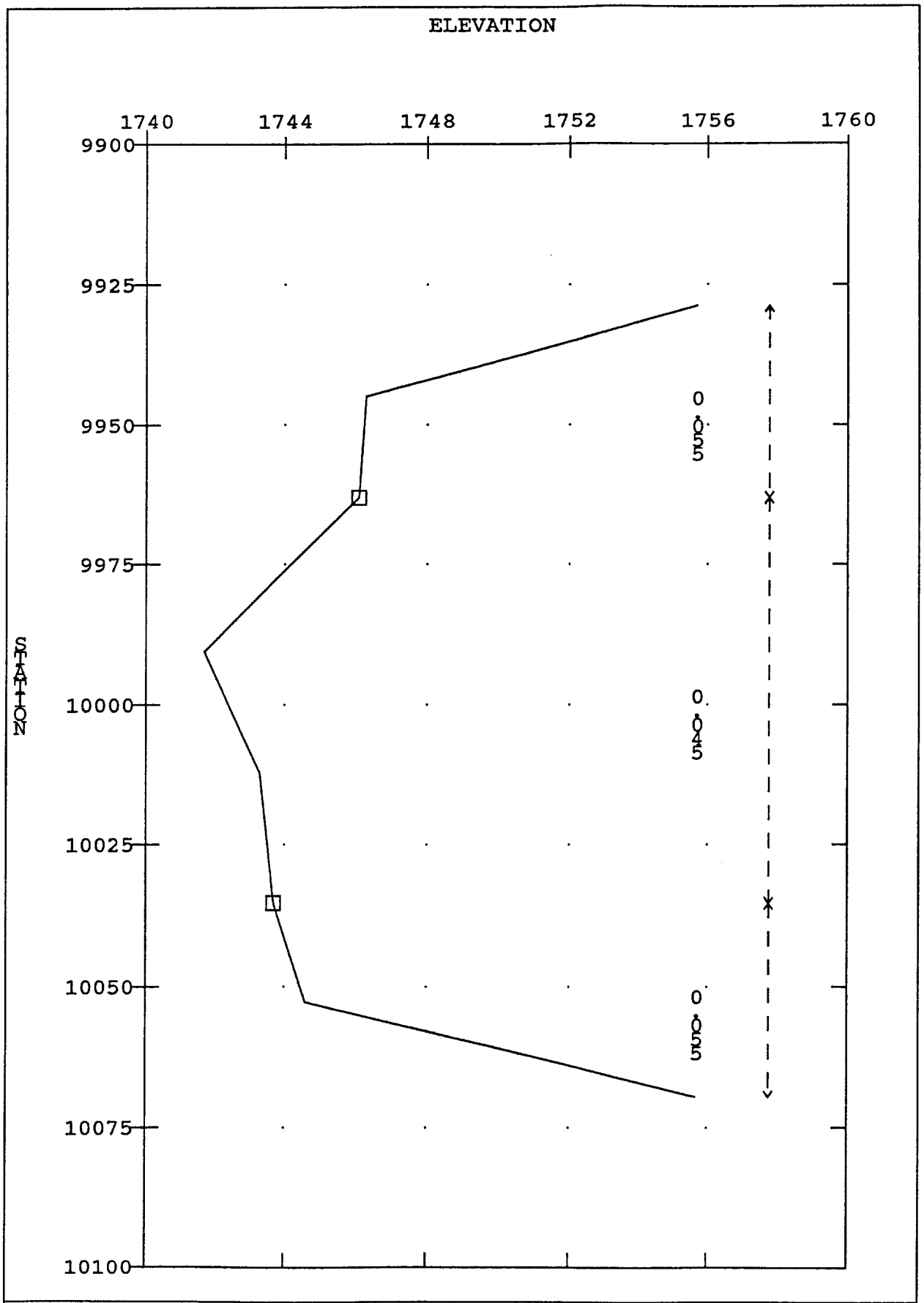
Summary of the normal depth reach route hydraulic data for the PMF

Routing Reach (1)	Reach: Slope in ft/ft (2)	Reach: Length in feet (3)	Reach: Average n value (4)	Reach: Average Q in cfs (5)	Manning's Equation: Channel Base Width in feet (6)	Manning's Equation: Flow Area in sf (7)	Manning's Equation: Flow Top Width in feet (8)	Manning's Equation: Flow Depth in feet (9)	Manning's Equation: Froude Number (10)	Manning's Equation: Average Velocity in fps (11)	Computed Using HEC-1 Summary Data: Wave Celerity in fps (12)	Computed Using HEC-1 Summary Data: Velocity Range in fps: Min. (13)	Computed Using HEC-1 Summary Data: Velocity Range in fps: Max. (14)	Computed Using HEC-1 Summary Data: Travel Time in hours (15)	Computed Using HEC-1 Summary Data: Travel NSTEPS Computed (16)	NSTEPS from HEC-1 Input File (17)
* 560599	0.027	3127	0.040	16641	35.5	640.6	224.4	6.7	2.90	27.8	0.0	0.0	0.0	0.0000	1	1
* 578599	0.016	3762	0.049	25286	21.6	1341.3	123.9	14.0	1.19	22.2	0.0	0.0	0.0	0.0000	1	1
584599	0.026	6526	0.057	18646	50.7	1200.8	218.1	9.1	1.18	15.7	21.8	6.5	32.7	0.0833	1	1

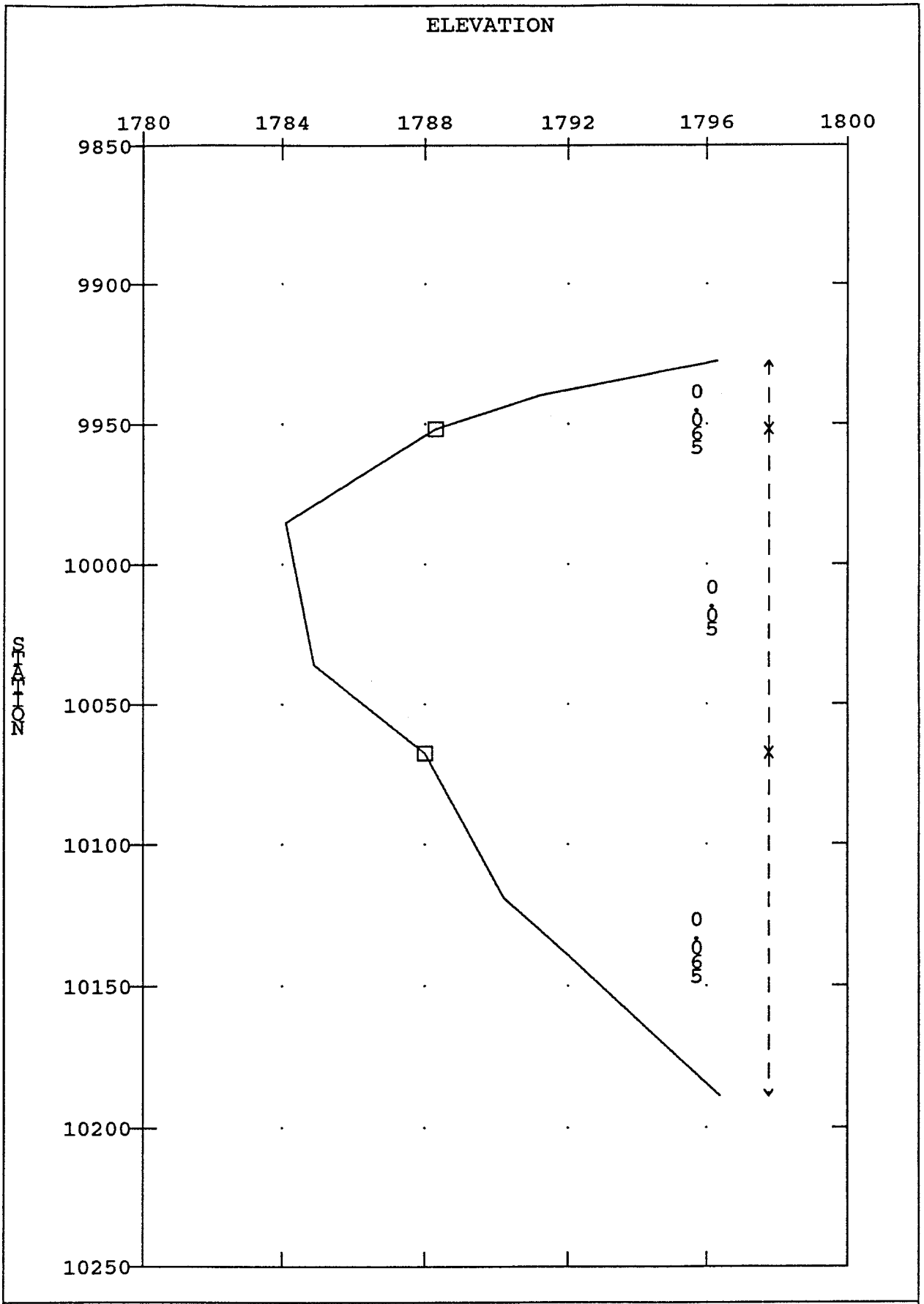
* NOTE: Zero values reported in columns (12)-(15) indicate that the routing operation has not lagged the hydrograph. This is due to the extremely large magnitude of flows associated with the PMF storm.



SECTION : 560599



SECTION : 578599



SECTION : 584599

APPENDIX H

GEPD Inflow Hydrograph HEC-1 models, comparison plots, and output printouts

```
1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*              MAY   1991           *
*            VERSION 4.0.1E         *
*                                   *
*  RUN DATE  10/14/96  TIME  10:23:03*
*                                   *
*************************************
```

```
*************************************
*                                   *
*    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        FOUNTAIN HILLS ADMP - Project No. 63
  2           ID        Future Condition Model                          File:    GEPD-6.IH1
  3           ID        100-Year, 6-Hour Storm, S-Hydrograph            Date:  03/26/96 CCC
  4           ID        This is with areal reduction
  5           ID        Multiple Basin Model for Inflow to Golden Eagle Park Dam and Major Basin
  6           ID           207, 208 and 209 Hydrographs
              *
  7           IT       5                    200
  8           IO       5
  9           IN      15
              *DIAGRAM
              *
 10           JD    3.30    0.01
 11           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
 12           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
 13           PC   0.962   0.972   0.983   0.991   1.000
 14           JD    3.28    0.50
 15           JD    3.23    2.80
 16           PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.067   0.076
 17           PC   0.087   0.100   0.120   0.163   0.252   0.451   0.694   0.837   0.900   0.938
 18           PC   0.950   0.963   0.975   0.988   1.000
 19           JD    3.04    16.0
 20           PC   0.000   0.015   0.020   0.030   0.048   0.063   0.076   0.090   0.105   0.119
 21           PC   0.135   0.152   0.175   0.222   0.304   0.472   0.670   0.796   0.868   0.912
 22           PC   0.946   0.960   0.973   0.987   1.000
              *

 23           KK   C560I
 24           KM        BASIN S207 (Inflow to Dam 6 - Aspen Dam)
 25           KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 26           KM        L=      3.9  Lca=      2.2   S=  464.7  Kn= .038  LAG=  38.3
 27           KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 28           BA    2.15
 29           LG     .17     .31    4.90     .29   31.55
 30           UI    189.    273.    681.   1079.   1350.   1645.   2155.   1382.   1135.   1002.
 31           UI    881.    763.    641.    518.    452.    411.    331.    263.    231.    207.
 32           UI    163.    145.    124.     92.     92.     92.     47.     36.     36.     36.
 33           UI     36.     36.     36.     36.     36.      0.      0.      0.      0.      0.
 34           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

 35           KK   C560O
 36           KM      Reservoir route at C560 (Dam 6).
 37           RS       1    ELEV  1808.8
 38           SV    0.00    1.71   14.81   34.65   60.43   93.47  135.64  183.00  186.00  191.44
 39           SV  197.00  205.00  212.00  219.00  226.40  234.00  242.00  246.00  250.00  254.00
 40           SE  1808.8  1812.0  1816.0  1820.0  1824.0  1828.0  1832.0  1835.4  1835.6  1836.0
 41           SE  1836.4  1836.8  1837.2  1837.6  1838.0  1838.4  1838.8  1839.0  1839.2  1839.4
 42           SQ       0      57     136     184     224     257     285     303     319     440
 43           SQ     691    1055    1500    2018    2600    3243    3944    4315    4699    5097
 44           RL                    0.40
```

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

  45            KK  560599
  46            KM      Normal depth channel route
  47            RS       1    FLOW      -1
  48            RC   0.050   0.025   0.050  3127.0  0.0272
  49            RX  9850.4  9950.4  9974.4 10000.0 10035.5 10059.8 10080.4 10104.4
  50            RY  1772.0  1771.7  1765.3  1765.3  1765.9  1768.5  1773.3  1773.7
                *

  51            KK   C578I
  52            KM        BASIN S208 (Inflow to Dam 11 - N. Heights Dam)
  53            KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  54            KM        L=      3.0  Lca=      1.6   S=  488.9  Kn= .022  LAG=  17.7
  55            KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
  56            LG     .10     .25    4.80     .28   50.48
  57            UI    513.   1937.   3377.   3020.   1966.   1434.    971.    720.    461.    339.
  58            UI    233.    186.     85.     73.     73.     73.      0.      0.      0.      0.
  59            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *

  60            KK   C578O
  61            KM      Reservoir route at C578 (Dam 11).
  62            RS       1    ELEV  1779.2
  63            SV    0.00   16.38   31.30   53.65   84.39  126.17  138.00  143.00  147.00  154.47
  64            SV  161.00  167.00  174.00  181.00  187.43  194.00  202.00  205.00
  65            SE  1779.2  1794.0  1798.0  1802.0  1806.0  1810.0  1810.8  1811.2  1811.6  1812.0
  66            SE  1812.4  1812.8  1813.2  1813.6  1814.0  1814.4  1814.8  1815.0
  67            SQ       0     131     181     221     254     283     305     325     328     366
  68            SQ     522     812    1194    1651    2176    2763    3406    4104    4855    5250
  69            SE  1779.2  1786.0  1790.0  1794.0  1798.0  1802.0  1806.0  1810.0  1810.8  1811.2
  70            SE  1811.6  1812.0  1812.4  1812.8  1813.2  1813.6  1814.0  1814.4  1814.8  1815.0
  71            RL                   0.97
                *

  72            KK  578599
  73            KM      Normal depth channel route
  74            RS       1    FLOW      -1
  75            RC   0.055   0.045   0.055  3762.0 0.01624
  76            RX  9928.9  9945.0  9963.1  9990.6 10012.2 10035.4 10052.8 10069.6
  77            RY  1755.7  1746.3  1746.1  1741.7  1743.3  1743.7  1744.6  1755.7
                *

  78            KK   C584I
  79            KM        BASIN S209 (Inflow to Dam 7 - SunRidge Canyon)
  80            KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  81            KM        L=      3.2  Lca=      1.7   S=  582.3  Kn= .024  LAG=  19.9
  82            KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
  83            BA    1.60
  84            LG     .13     .28    4.62     .32   41.50
  85            UI    316.   1213.   2067.   2665.   1606.   1245.    915.    659.    495.    332.
  86            UI    255.    187.    133.     99.     52.     52.     52.     52.      0.      0.
  87            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *
```



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

  88            KK   C584O
  89            KM      Reservoir route at C584 (Dam 7).
  90            RS       1    ELEV  1884.8
  91            SV    0.00   14.55   37.17   57.52   86.65   94.00   97.00  101.00  104.90  109.00
  92            SV  113.00  118.00  122.00  126.25  131.00  133.00  136.00  139.00
  93            SE  1884.8  1908.0  1916.0  1920.0  1924.0  1924.8  1925.2  1925.6  1926.0  1926.4
  94            SE  1926.8  1927.2  1927.6  1928.0  1928.4  1928.6  1928.8  1929.0
  95            SQ       0     135     223     285     326     341     355     358     385     493
  96            SQ     704    1007    1394    1852    2374    2956    3596    3937    4292    4661
  97            SE  1884.8  1892.0  1900.0  1908.0  1916.0  1920.0  1924.0  1924.8  1925.2  1925.6
  98            SE  1926.0  1926.4  1926.8  1927.2  1927.6  1928.0  1928.4  1928.6  1928.8  1929.0
  99            RL                   0.15
                *

 100            KK  584599
 101            KM      Normal depth channel route
 102            RS       2    FLOW      -1
 103            RC   0.065   0.050   0.065  6526.0 0.02571
 104            RX  9927.6  9939.8  9951.9  9985.3 10036.0 10067.5 10119.2 10188.7
 105            RY  1796.3  1791.2  1788.3  1784.1  1784.9  1788.0  1790.2  1796.4
                *

 106            KK    S210
 107            KM        BASIN S210 (Inflows from the watershed above Dam 4)
 108            KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 109            KM        L=      1.9  Lca=       .9   S=  360.7  Kn= .030  LAG=  17.0
```

```
110          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
111          BA    1.38
112          LG     .09     .24    5.61     .19   24.82
113          UI    386.   1462.   2587.   1930.   1339.    946.    649.    444.    315.    211.
114          UI    136.    104.     52.     52.     52.      0.      0.      0.      0.      0.
115          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

116          KK   C599I
117          KM      Inflow Hydrograph for Dam 4 (Golden Eagle Park)
118          KM      Hydrograph combine R560 + R578 + R584 + C210 at C599I
119          HC       4
120          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    23       C560I
                 V
                 V
    35       C560O
                 V
                 V
    45      560599
                 .
                 .
    51           .       C578I
                 .           V
                 .           V
    60           .       C578O
                 .           V
                 .           V
    72           .      578599
                 .           .
                 .           .
    78           .           .       C584I
                 .           .           V
                 .           .           V
    88           .           .       C584O
                 .           .           V
                 .           .           V
   100           .           .      584599
                 .           .           .
                 .           .           .
   106           .           .           .        S210
                 .           .           .           .
                 .           .           .           .
   116       C599I.................................
 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              MAY   1991              *
 *           VERSION 4.0.1E             *
 *                                      *
 *  RUN DATE  10/14/96  TIME  10:23:03  *
 *                                      *
 ****************************************

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

                          FOUNTAIN HILLS ADMP - Project No. 63
                          Future Condition Model                          File:    GEPD-6.IH1
                          100-Year, 6-Hour Storm, S-Hydrograph            Date:  03/26/96 CCC
                          This is with areal reduction
                          Multiple Basin Model for Inflow to Golden Eagle Park Dam and Major Basin
                             207, 208 and 209 Hydrographs

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

     IT          HYDROGRAPH TIME DATA
                        NMIN          5  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1    0  STARTING DATE
                       ITIME       0000  STARTING TIME
                          NQ        200  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      1    0  ENDING DATE
                      NDTIME       1635  ENDING TIME
                       ICENT         19  CENTURY MARK

                  COMPUTATION INTERVAL    0.08 HOURS
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                    TOTAL TIME BASE   16.58 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

   10 JD          INDEX STORM NO. 1
                        STRM        3.30  PRECIPITATION DEPTH
                        TRDA        0.01  TRANSPOSITION DRAINAGE AREA

   11 PI            PRECIPITATION PATTERN
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.03
                       0.03      0.03      0.05      0.05      0.05      0.15      0.15      0.15      0.03      0.03
                       0.03      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00

   14 JD          INDEX STORM NO. 2
                        STRM        3.28  PRECIPITATION DEPTH
                        TRDA        0.50  TRANSPOSITION DRAINAGE AREA

    0 PI            PRECIPITATION PATTERN
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.03
                       0.03      0.03      0.05      0.05      0.05      0.15      0.15      0.15      0.03      0.03
                       0.03      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00

   15 JD          INDEX STORM NO. 3
                        STRM        3.23  PRECIPITATION DEPTH
                        TRDA        2.80  TRANSPOSITION DRAINAGE AREA

   16 PI            PRECIPITATION PATTERN
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.03
                       0.03      0.03      0.07      0.07      0.07      0.08      0.08      0.08      0.05      0.05
                       0.05      0.02      0.02      0.02      0.01      0.01      0.01      0.00      0.00      0.00
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00

   19 JD          INDEX STORM NO. 4
                        STRM        3.04  PRECIPITATION DEPTH
                        TRDA       16.00  TRANSPOSITION DRAINAGE AREA

   20 PI            PRECIPITATION PATTERN
                       0.01      0.01      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.01
                       0.01      0.01      0.00      0.01      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00      0.01      0.00      0.00      0.00      0.00      0.01      0.01      0.01
                       0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.02      0.03
                       0.03      0.03      0.06      0.06      0.06      0.07      0.07      0.07      0.04      0.04
                       0.04      0.02      0.02      0.02      0.01      0.01      0.01      0.01      0.01      0.01
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00
1
                                          RUNOFF SUMMARY
                                   FLOW IN CUBIC FEET PER SECOND
                                 TIME IN HOURS,  AREA IN SQUARE MILES

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

          HYDROGRAPH AT
+                          C560I         2219.   4.42        455.        166.        166.       2.15

          ROUTED TO
+                          C560O          295.   5.75        274.        166.        166.       2.15

          ROUTED TO
+                         560599          295.   5.83        274.        166.        166.       2.15

          HYDROGRAPH AT
+                          C578I         3200.   4.08        515.        187.        187.       2.15

          ROUTED TO
+                          C578O         1165.   4.67        393.        187.        187.       2.15
```

	ROUTED TO							
+		578599	1061.	4.75	392.	187.	187.	2.15
	HYDROGRAPH AT							
+		C584I	2567.	4.17	379.	138.	138.	1.60
	ROUTED TO							
+		C584O	916.	4.67	354.	138.	138.	1.60
	ROUTED TO							
+		584599	812.	4.83	352.	138.	138.	1.60
	HYDROGRAPH AT							
+		S210	2520.	4.08	322.	117.	117.	1.38
	4 COMBINED AT							
+		C599I	2438.	4.17	1161.	552.	552.	7.28

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

```
1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              MAY   1991           *
*           VERSION 4.0.1E          *
*                                   *
*  RUN DATE  10/14/96  TIME  10:22:47  *
*                                   *
*************************************
```

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

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

  1           ID        FOUNTAIN HILLS ADMP - Project No. 63
  2           ID        Future Condition Model                          File:   GEPD-24.IH1
  3           ID        100-Year,24-Hour Storm, S-Hydrograph            Date:  03/26/96 CCC
  4           ID        Time Increment is 30 minutes
  5           ID        Multiple Basin Model for Inflow to Golden Eagle Park Dam and Major Basin
  6           ID           207, 208 and 209 Hydrographs
              *
  7           IT      5                    600
  8           IO      5
  9           IN     30
              *DIAGRAM
 10           JD   4.20    0.01
 11           PC   .000    .005    .011    .016    .022    .028    .035    .041    .048    .056
 12           PC   .063    .071    .080    .089    .098    .109    .120    .133    .147    .163
 13           PC   .181    .204    .235    .283    .663    .735    .772    .799    .820    .838
 14           PC   .854    .868    .880    .891    .902    .912    .921    .929    .937    .945
 15           PC   .952    .959    .965    .972    .978    .984    .989    .995   1.000
 16           JD   4.12    1.38
 17           JD   4.12    1.60
 18           JD   4.10    2.00
 19           JD   4.10    2.15
 20           JD   3.99   10.00
              *

 21           KK   C560I
 22           KM        BASIN S207 (Inflow to Dam 6 - Aspen Dam)
 23           KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 24           KM        L=      3.9  Lca=      2.2   S=  464.7  Kn= .038 LAG= 38.3
 25           KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 26           BA    2.15
 27           LG     .17     .31    4.90     .29   31.55
 28           UI    189.    273.    681.   1079.   1350.   1645.   2155.   1382.   1135.   1002.
 29           UI    881.    763.    641.    518.    452.    411.    331.    263.    231.    207.
 30           UI    163.    145.    124.     92.     92.     92.     47.     36.     36.     36.
 31           UI     36.     36.     36.     36.     36.      0.      0.      0.      0.      0.
 32           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

 33           KK   C560O
 34           RS      1    ELEV  1808.8
 35           KM      Reservoir route at C560 (Dam 6).
 36           SV    0.00    1.71   14.81   34.65   60.43   93.47  135.64  183.00  186.00  191.44
 37           SV  197.00  205.00  212.00  219.00  226.40  234.00  242.00  246.00  250.00  254.00
 38           SE  1808.8  1812.0  1816.0  1820.0  1824.0  1828.0  1832.0  1835.4  1835.6  1836.0
 39           SE  1836.4  1836.8  1837.2  1837.6  1838.0  1838.4  1838.8  1839.0  1839.2  1839.4
 40           SQ       0      57     136     184     224     257     285     303     319     440
 41           SQ     691    1055    1500    2018    2600    3243    3944    4315    4699    5097
 42           RL                    0.40
              *
```

1 HEC-1 INPUT PAGE 2

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

  43          KK  560599
  44          KM      Normal depth channel route
  45          RS       1    FLOW      -1
  46          RC   0.050   0.025   0.050  3127.0  0.0272
  47          RX  9850.4  9950.4  9974.4 10000.0 10035.5 10059.8 10080.4 10104.4
  48          RY  1772.0  1771.7  1765.3  1765.3  1765.9  1768.5  1773.3  1773.7
              *

  49          KK   C578I
  50          KM        BASIN S208 (Inflow to Dam 11 - N. Heights Dam)
  51          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  52          KM        L=      3.0  Lca=      1.6   S=  488.9  Kn= .021  LAG=  16.9
  53          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
  54          BA    2.00
  55          LG     .10     .25    4.80     .28   50.48
  56          UI    513.   1937.   3377.   3020.   1966.   1434.    971.    720.    461.    339.
  57          UI    233.    186.     85.     73.     73.     73.      0.      0.      0.      0.
  58          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

  59          KK   C5780
  60          KM      Reservoir route at C578 (Dam 11).
  61          RS       1    ELEV  1779.2
  62          SV    0.00   16.38   31.30   53.65   84.39  126.17  138.00  143.00  147.00  154.47
  63          SV  161.00  167.00  174.00  181.00  187.43  194.00  202.00  205.00
  64          SE  1779.2  1794.0  1798.0  1802.0  1806.0  1810.0  1810.8  1811.2  1811.6  1812.0
  65          SE  1812.4  1812.8  1813.2  1813.6  1814.0  1814.4  1814.8  1815.0
  66          SQ       0     131     181     221     254     283     305     325     328     366
  67          SQ     522     812    1194    1651    2176    2763    3406    4104    4855    5250
  68          SE  1779.2  1786.0  1790.0  1794.0  1798.0  1802.0  1806.0  1810.0  1810.8  1811.2
  69          SE  1811.6  1812.0  1812.4  1812.8  1813.2  1813.6  1814.0  1814.4  1814.8  1815.0
  70          RL                   0.97
              *

  71          KK  578599
  72          KM      Normal depth channel route
  73          RS       3    FLOW      -1
  74          RC   0.055   0.045   0.055  3762.0 0.01624
  75          RX  9928.9  9945.0  9963.1  9990.6 10012.2 10035.4 10052.8 10069.6
  76          RY  1755.7  1746.3  1746.1  1741.7  1743.3  1743.7  1744.6  1755.7
              *

  77          KK   C584I
  78          KM        BASIN S209 (Inflow to Dam 7 - SunRidge Canyon)
  79          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  80          KM        L=      3.2  Lca=      1.7   S=  582.3  Kn= .024  LAG=  19.9
  81          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
  82          BA    1.60
  83          LG     .13     .28    4.62     .32   41.50
  84          UI    314.   1207.   2056.   2667.   1607.   1247.    919.    660.    498.    332.
  85          UI    257.    188.    133.    101.     52.     52.     52.     52.      0.      0.
  86          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
1                                          HEC-1 INPUT                                          PAGE  3

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

  87          KK   C584O
  88          KM      Reservoir route at C584 (Dam 7).
  89          RS       1    ELEV  1884.8
  90          SV    0.00   14.55   37.17   57.52   86.65   94.00   97.00  101.00  104.90  109.00
  91          SV  113.00  118.00  122.00  126.25  131.00  133.00  136.00  139.00
  92          SE  1884.8  1908.0  1916.0  1920.0  1924.0  1924.8  1925.2  1925.6  1926.0  1926.4
  93          SE  1926.8  1927.2  1927.6  1928.0  1928.4  1928.6  1928.8  1929.0
  94          SQ       0     135     223     285     326     341     355     358     385     493
  95          SQ     704    1007    1394    1852    2374    2956    3596    3937    4292    4661
  96          SE  1884.8  1892.0  1900.0  1908.0  1916.0  1920.0  1924.0  1924.8  1925.2  1925.6
  97          SE  1926.0  1926.4  1926.8  1927.2  1927.6  1928.0  1928.4  1928.6  1928.8  1929.0
  98          RL                   0.15
              *

  99          KK  584599
 100          KM      Normal depth channel route
 101          RS       3    FLOW      -1
 102          RC   0.065   0.050   0.065  6526.0 0.02571
 103          RX  9927.6  9939.8  9951.9  9985.3 10036.0 10067.5 10119.2 10188.7
 104          RY  1796.3  1791.2  1788.3  1784.1  1784.9  1788.0  1790.2  1796.4
              *

 105          KK    S210
 106          KM        BASIN S210 (Inflows from the watershed above Dam 4)
 107          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 108          KM        L=      1.9  Lca=       .9   S=  360.7  Kn= .029  LAG=  16.5
 109          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 110          BA    1.38
```

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111          LG     .09     .24    5.61     .19   24.82
112          UI    386.   1462.   2587.   1930.   1339.    946.    649.    444.    315.    211.
113          UI    136.    104.     52.     52.     52.      0.      0.      0.      0.      0.
114          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

115          KK   C599I
116          KM      Inflow Hydrograph for Dam 4 (Golden Eagle Park)
117          KM      Hydrograph combine R560 + R578 + R584 + C210 at C599I
118          HC       4
             *
119          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    21       C560I
                 V
                 V
    33       C560O
                 V
                 V
    43      560599
                 .
                 .
    49           .       C578I
                 .           V
                 .           V
    59           .       C578O
                 .           V
                 .           V
    71           .      578599
                 .           .
                 .           .
    77           .           .      C584I
                 .           .          V
                 .           .          V
    87           .           .      C584O
                 .           .          V
                 .           .          V
    99           .           .     584599
                 .           .          .
                 .           .          .
   105           .           .          .       S210
                 .           .          .          .
                 .           .          .          .
   115       C599I.................................
 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*************************************                                    *************************************
*                                    *                                    *                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*                                    *   U.S. ARMY CORPS OF ENGINEERS    *
*              MAY   1991            *                                    *   HYDROLOGIC ENGINEERING CENTER   *
*           VERSION 4.0.1E           *                                    *         609 SECOND STREET         *
*                                    *                                    *      DAVIS, CALIFORNIA 95616      *
*  RUN DATE  10/14/96  TIME  10:22:47*                                    *          (916) 551-1748           *
*                                    *                                    *                                   *
*************************************                                    *************************************
```

FOUNTAIN HILLS ADMP - Project No. 63
Future Condition Model — File: GEPD-24.IH1
100-Year,24-Hour Storm, S-Hydrograph — Date: 03/26/96 CCC
Time Increment is 30 minutes
Multiple Basin Model for Inflow to Golden Eagle Park Dam and Major Basin
207, 208 and 209 Hydrographs

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

    IT          HYDROGRAPH TIME DATA
                       NMIN          5  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME       0000  STARTING TIME
                         NQ        600  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      3    0  ENDING DATE
                     NDTIME       0155  ENDING TIME
                      ICENT         19  CENTURY MARK

                 COMPUTATION INTERVAL    0.08 HOURS
                      TOTAL TIME BASE   49.92 HOURS
```

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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

10 JD        INDEX STORM NO. 1
                STRM        4.20  PRECIPITATION DEPTH
                TRDA        0.01  TRANSPOSITION DRAINAGE AREA

11 PI          PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.06      0.06
                0.06      0.06      0.06      0.06      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00

16 JD        INDEX STORM NO. 2
                STRM        4.12  PRECIPITATION DEPTH
                TRDA        1.38  TRANSPOSITION DRAINAGE AREA

 0 PI          PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.06      0.06
                0.06      0.06      0.06      0.06      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00

17 JD        INDEX STORM NO. 3
                STRM        4.12  PRECIPITATION DEPTH
                TRDA        1.60  TRANSPOSITION DRAINAGE AREA

 0 PI          PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
```

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.06
0.06	0.06	0.06	0.06	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

18 JD INDEX STORM NO. 4

STRM 4.10 PRECIPITATION DEPTH

TRDA 2.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.06
0.06	0.06	0.06	0.06	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

19 JD INDEX STORM NO. 5

STRM 4.10 PRECIPITATION DEPTH

TRDA 2.15 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.06
0.06	0.06	0.06	0.06	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00

20 JD        INDEX STORM NO. 6
                STRM        3.99  PRECIPITATION DEPTH
                TRDA       10.00  TRANSPOSITION DRAINAGE AREA

 0 PI          PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.06      0.06
                0.06      0.06      0.06      0.06      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
1
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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	C560I	2012.	12.25	404.	123.	59.	2.15		
+	ROUTED TO	C560O	284.	13.67	263.	123.	59.	2.15		
+	ROUTED TO	560599	284.	13.75	263.	123.	59.	2.15		
+	HYDROGRAPH AT	C578I	3058.	12.08	454.	146.	70.	2.00		
+	ROUTED TO	C578O	506.	12.75	328.	146.	70.	2.00		
+	ROUTED TO	578599	491.	13.00	328.	145.	70.	2.00		
+	HYDROGRAPH AT	C584I	2257.	12.08	332.	105.	50.	1.60		
+	ROUTED TO	C584O	402.	12.75	316.	104.	50.	1.60		
+	ROUTED TO	584599	390.	13.00	315.	104.	50.	1.60		
+	HYDROGRAPH AT	S210	2121.	12.08	271.	79.	38.	1.38		
+	4 COMBINED AT	C599I	2697.	12.08	1116.	439.	212.	7.13		

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

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1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*             MAY  1991             *
*          VERSION 4.0.1E           *
*                                   *
*  RUN DATE  10/16/96  TIME  10:14:41 *
*                                   *
*************************************
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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        FOUNTAIN HILLS ADMP
  2           ID        Model for the Computation of PMF for Dam 4      FILE NAME: GEPD-PMF.IH1
  3           ID        ****************************************************************
  4           ID        Analytical Considerations:
  5           ID            Single Basin Models
  6           ID            This model considers areal reduction method.
  7           ID        ****************************************************************
              *DIAGRAM
  8           IT       5       0       0     200
  9           IO       5
 10           IN      15
              *
 11           JD   15.00    0.01
 12           PI   0.075   0.075   0.075   0.075     0.2     0.2     0.2     0.2     8.2     1.8
 13           PI     0.7     0.7     0.4     0.4     0.4     0.4    0.15    0.15    0.15    0.15
 14           PI   0.075   0.075   0.075   0.075
 15           JD   15.00   1.603
 16           PI   0.075   0.075   0.075   0.075     0.2     0.2     0.2     0.2     8.2     1.8
 17           PI     0.7     0.7     0.4     0.4     0.4     0.4    0.15    0.15    0.15    0.15
 18           PI   0.075   0.075   0.075   0.075
 19           JD   14.70   2.000
 20           PI     0.1     0.1     0.1     0.1     0.2     0.2     0.2     0.2     8.0     1.8
 21           PI     0.7     0.5   0.425   0.425   0.425   0.425   0.125   0.125   0.125   0.125
 22           PI   0.075   0.075   0.075   0.075
 23           JD   14.70   2.150
 24           PI     0.1     0.1     0.1     0.1     0.2     0.2     0.2     0.2     8.0     1.8
 25           PI     0.7     0.5   0.425   0.425   0.425   0.425   0.125   0.125   0.125   0.125
 26           PI   0.075   0.075   0.075   0.075
 27           JD   13.70   7.150
 28           PI   0.075   0.075   0.075   0.075     0.2     0.2     0.2     0.2     8.0     1.8
 29           PI     0.7     0.7   0.375   0.375   0.375   0.375    0.15    0.15    0.15    0.15
 30           PI   0.075   0.075   0.075   0.075

 31           KK   C560I
 32           KM        BASIN S207
 33           KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 34           KM        L=      3.9  Lca=      2.2   S=  464.7  Kn= .030  LAG=  30.6
 35           KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 36           BA    2.15
 37           LG     .17     .31    4.90    0.29   31.55
 38           UI    237.    523.   1170.   1651.   2163.   2377.   1509.   1274.   1082.    897.
 39           UI    699.    573.    507.    374.    299.    259.    198.    181.    119.    116.
 40           UI    111.     45.     45.     45.     45.     45.     45.     45.      0.      0.
 41           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 42           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

 43           KK   C560O
 44           KM      Reservoir route at C560 (Dam 6).
 45           RS       1    ELEV 1835.36
 46           SV    0.00    7.09   34.65   75.98  135.64  191.44  208.31  226.53  246.00  266.28
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 47          SV  289.00  310.81  336.00  360.88  389.00  416.30  446.00  476.39  509.00  540.78
 48          SE  1808.8 1814.00 1820.00 1826.00 1832.00 1836.00 1837.00 1838.00 1839.00 1840.00
 49          SE  1841.0 1842.00 1843.00 1844.00 1845.00 1846.00 1847.00 1848.00 1849.00 1850.00
 50          SQ       0     102     184     242     285     429    1239    2559    4265    6311
1                                          HEC-1 INPUT                                          PAGE  2

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

 51          SQ    8674   11339   14292   18440   25207   33643   43471   54561   66835   80241
             +

 52          KK  560599
 53          KM      Normal depth channel route
 54          RS       1    FLOW      -1
 55          RC   0.050   0.025   0.050  3127.0  0.0272
 56          RX  9850.4  9950.4  9974.4 10000.0 10035.5 10059.8 10080.4 10104.4
 57          RY  1772.0  1771.7  1765.3  1765.3  1765.9  1768.5  1773.3  1773.7
             +

 58          KK   C578I
 59          KM        BASIN S208
 60          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 61          KM        L=      3.0  Lca=      1.6   S=  488.9  Kn= .018  LAG=  14.2
 62          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 63          BA    2.00
 64          LG     .10     .25    4.80     .28   50.48
 65          UI    837.   3038.   4371.   2543.   1714.   1106.    677.    446.    282.    192.
 66          UI     91.     91.     91.      0.      0.      0.      0.      0.      0.      0.
 67          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             +

 68          KK   C578O
 69          KM      Reservoir route at C578 (Dam 11).
 70          RS       1    ELEV 1812.29
 71          SV    0.00    2.77   16.38   41.49   84.39  133.00  154.47  171.00  187.43  205.00
 72          SV  223.03  242.00  261.38  282.00  302.00  324.00  345.87  370.00  394.23  419.79
 73          SE  1779.2 1788.00 1794.00 1800.00 1806.00  1810.5 1812.00 1813.00 1814.00 1815.00
 74          SE  1816.0 1817.00 1818.00 1819.00 1820.00 1821.00 1822.00 1823.00 1824.00 1825.00
 75          SQ       0     160     221     269     305     327     799    1888    3383    5222
 76          SQ    7376    9826   12563   15670   21045   28479   37392   47596   58989   71509
 77          SE  1779.2 1788.00 1794.00 1800.00 1806.00  1810.5 1812.00 1813.00 1814.00 1815.00
 78          SE  1816.0 1817.00 1818.00 1819.00 1820.00 1821.00 1822.00 1823.00 1824.00 1825.00
             +

 79          KK  578599
 80          KM      Normal depth channel route
 81          RS       1    FLOW      -1
 82          RC   0.055   0.045   0.055  3762.0 0.01624
 83          RX  9928.9  9945.0  9963.1  9990.6 10012.2 10035.4 10052.8 10069.6
 84          RY  1755.7  1746.3  1746.1  1741.7  1743.3  1743.7  1744.6  1755.7
             +

 85          KK   C584I
 86          KM        BASIN S209
 87          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 88          KM        L=      3.2  Lca=      1.7   S=  582.3  Kn= .019  LAG=  15.9
 89          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 90          BA    1.60
 91          LG     .13     .28    4.62     .32   41.50
 92          UI    515.   1951.   3289.   2104.   1510.    997.    702.    442.    308.    202.
 93          UI    154.     65.     65.     65.      0.      0.      0.      0.      0.      0.
 94          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             +
1                                          HEC-1 INPUT                                          PAGE  3

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

 95          KK   C584O
 96          KM      Reservoir route at C584 (Dam 7).
 97          RS       1    ELEV 1926.31
 98          SV    0.00    0.60    4.30   11.27   23.74   46.29   86.65   96.00  104.90  126.25
 99          SV  151.07  165.00  179.50  195.00  211.23  229.00  246.62  266.00  285.59  306.14
100          SE  1884.8 1894.00 1900.00 1906.00 1912.00 1918.00 1924.00 1925.00 1926.00 1928.00
101          SE  1930.0 1931.00 1932.00 1933.00 1934.00 1935.00 1936.00 1937.00 1938.00 1939.00
102          SQ       0     163     223     272     307     333     355     363     690    2921
103          SQ    6650    9013   11702   14897   19772   25998   33315   41618   50847   60966
104          SE  1884.8 1894.00 1900.00 1906.00 1912.00 1918.00 1924.00 1925.00 1926.00 1928.00
105          SE  1930.0 1931.00 1932.00 1933.00 1934.00 1935.00 1936.00 1937.00 1938.00 1939.00
             +

106          KK  584599
107          KM      Normal depth channel route
108          RS       1    FLOW      -1
109          RC   0.065   0.050   0.065  6526.0 0.02571
110          RX  9927.6  9939.8  9951.9  9985.3 10036.0 10067.5 10119.2 10188.7
111          RY  1796.3  1791.2  1788.3  1784.1  1784.9  1788.0  1790.2  1796.4
             +
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112          KK    C210
113          KM        BASIN S210
114          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
115          KM        L=      1.9  Lca=       .9   S=  360.7  Kn= .024  LAG=  13.6
116          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
117          BA    1.38
118          LG     .09     .24    5.61     .19   24.82
119          UI    634.   2291.   3040.   1739.   1122.    723.    433.    286.    170.     96.
120          UI     66.     66.      0.      0.      0.      0.      0.      0.      0.      0.
121          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

122          KK   C599I
123          KM      Hydrograph combine C5840 + C5600 + C5780 + C599
124          HC       4
125          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   31       C560I
                V
                V
   43       C560O
                V
                V
   52      560599
                .
                .
   58           .       C578I
                .           V
                .           V
   68           .       C578O
                .           V
                .           V
   79           .      578599
                .           .
                .           .
   85           .           .       C584I
                .           .           V
                .           .           V
   95           .           .       C584O
                .           .           V
                .           .           V
  106           .           .      584599
                .           .           .
                .           .           .
  112           .           .           .        C210
                .           .           .           .
                .           .           .           .
  122       C599I.................................
 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              MAY   1991              *                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *           VERSION 4.0.1E             *                                    *          609 SECOND STREET           *
 *                                      *                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE  10/16/96  TIME  10:14:41  *                                    *           (916) 551-1748             *
 *                                      *                                    *                                      *
 ****************************************                                    ****************************************


                                FOUNTAIN HILLS ADMP
                                Model for the Computation of PMF for Dam 4      FILE NAME: GEPD-PMF.IH1
                                ******************************************************************
                                Analytical Considerations:
                                    Single Basin Models
                                    This model considers areal reduction method.
                                ******************************************************************

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

     IT          HYDROGRAPH TIME DATA
                        NMIN          5  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1    0  STARTING DATE
                       ITIME       0000  STARTING TIME
                          NQ        200  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      1    0  ENDING DATE
```

```
                NDTIME        1635  ENDING TIME
                ICENT           19  CENTURY MARK

            COMPUTATION INTERVAL    0.08 HOURS
                 TOTAL TIME BASE   16.58 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

 11 JD        INDEX STORM NO. 1
                 STRM       15.00  PRECIPITATION DEPTH
                 TRDA        0.01  TRANSPOSITION DRAINAGE AREA

 12 PI          PRECIPITATION PATTERN
                 0.03       0.03       0.02       0.03       0.03       0.02       0.03       0.03       0.02       0.02
                 0.03       0.03       0.07       0.07       0.07       0.07       0.07       0.07       0.07       0.07
                 0.07       0.07       0.07       0.07       2.73       2.73       2.73       0.60       0.60       0.60
                 0.23       0.23       0.23       0.23       0.23       0.23       0.13       0.13       0.13       0.13
                 0.13       0.13       0.13       0.13       0.13       0.13       0.13       0.13       0.05       0.05
                 0.05       0.05       0.05       0.05       0.05       0.05       0.05       0.05       0.05       0.05
                 0.02       0.03       0.02       0.02       0.03       0.02       0.02       0.03       0.02       0.02
                 0.03       0.02

 15 JD        INDEX STORM NO. 2
                 STRM       15.00  PRECIPITATION DEPTH
                 TRDA        1.60  TRANSPOSITION DRAINAGE AREA

 16 PI          PRECIPITATION PATTERN
                 0.03       0.03       0.02       0.03       0.03       0.02       0.03       0.03       0.02       0.02
                 0.03       0.03       0.07       0.07       0.07       0.07       0.07       0.07       0.07       0.07
                 0.07       0.07       0.07       0.07       2.73       2.73       2.73       0.60       0.60       0.60
                 0.23       0.23       0.23       0.23       0.23       0.23       0.13       0.13       0.13       0.13
                 0.13       0.13       0.13       0.13       0.13       0.13       0.13       0.13       0.05       0.05
                 0.05       0.05       0.05       0.05       0.05       0.05       0.05       0.05       0.05       0.05
                 0.02       0.03       0.02       0.02       0.03       0.02       0.02       0.03       0.02       0.02
                 0.03       0.02

 19 JD        INDEX STORM NO. 3
                 STRM       14.70  PRECIPITATION DEPTH
                 TRDA        2.00  TRANSPOSITION DRAINAGE AREA

 20 PI          PRECIPITATION PATTERN
                 0.03       0.03       0.03       0.03       0.03       0.03       0.03       0.03       0.03       0.03
                 0.03       0.03       0.07       0.07       0.07       0.07       0.07       0.07       0.07       0.07
                 0.07       0.07       0.07       0.07       2.67       2.67       2.67       0.60       0.60       0.60
                 0.23       0.23       0.23       0.17       0.17       0.17       0.14       0.14       0.14       0.14
                 0.14       0.14       0.14       0.14       0.14       0.14       0.14       0.14       0.04       0.04
                 0.04       0.04       0.04       0.04       0.04       0.04       0.04       0.04       0.04       0.04
                 0.02       0.03       0.02       0.02       0.03       0.02       0.02       0.03       0.02       0.02
                 0.03       0.02

 23 JD        INDEX STORM NO. 4
                 STRM       14.70  PRECIPITATION DEPTH
                 TRDA        2.15  TRANSPOSITION DRAINAGE AREA

 24 PI          PRECIPITATION PATTERN
                 0.03       0.03       0.03       0.03       0.03       0.03       0.03       0.03       0.03       0.03
                 0.03       0.03       0.07       0.07       0.07       0.07       0.07       0.07       0.07       0.07
                 0.07       0.07       0.07       0.07       2.67       2.67       2.67       0.60       0.60       0.60
                 0.23       0.23       0.23       0.17       0.17       0.17       0.14       0.14       0.14       0.14
                 0.14       0.14       0.14       0.14       0.14       0.14       0.14       0.14       0.04       0.04
                 0.04       0.04       0.04       0.04       0.04       0.04       0.04       0.04       0.04       0.04
                 0.02       0.03       0.02       0.02       0.03       0.02       0.02       0.03       0.02       0.02
                 0.03       0.02

 27 JD        INDEX STORM NO. 5
                 STRM       13.70  PRECIPITATION DEPTH
                 TRDA        7.15  TRANSPOSITION DRAINAGE AREA

 28 PI          PRECIPITATION PATTERN
                 0.03       0.03       0.02       0.03       0.03       0.02       0.03       0.03       0.02       0.02
                 0.03       0.03       0.07       0.07       0.07       0.07       0.07       0.07       0.07       0.07
                 0.07       0.07       0.07       0.07       2.67       2.67       2.67       0.60       0.60       0.60
                 0.23       0.23       0.23       0.23       0.23       0.23       0.13       0.13       0.13       0.13
                 0.13       0.13       0.13       0.13       0.13       0.13       0.13       0.13       0.05       0.05
                 0.05       0.05       0.05       0.05       0.05       0.05       0.05       0.05       0.05       0.05
                 0.02       0.03       0.02       0.02       0.03       0.02       0.02       0.03       0.02       0.02
                 0.03       0.02
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	C560I	17974.	2.58	2897.	1051.	1051.	2.15		
+	ROUTED TO	C560O	16821.	2.67	2891.	1183.	1183.	2.15		
+	ROUTED TO	560599	16460.	2.67	2891.	1185.	1185.	2.15		
+	HYDROGRAPH AT	C578I	26969.	2.33	2850.	1033.	1033.	2.00		
+	ROUTED TO	C578O	26375.	2.42	2903.	1149.	1149.	2.00		
+	ROUTED TO	578599	24197.	2.42	2920.	1160.	1160.	2.00		
+	HYDROGRAPH AT	C584I	20238.	2.33	2265.	821.	821.	1.60		
+	ROUTED TO	C584O	20283.	2.42	2311.	899.	899.	1.60		
+	ROUTED TO	584599	17009.	2.50	2335.	916.	916.	1.60		
+	HYDROGRAPH AT	C210	19580.	2.33	1956.	708.	708.	1.38		
+	4 COMBINED AT	C599I	58754.	2.50	9286.	3673.	3673.	7.13		

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

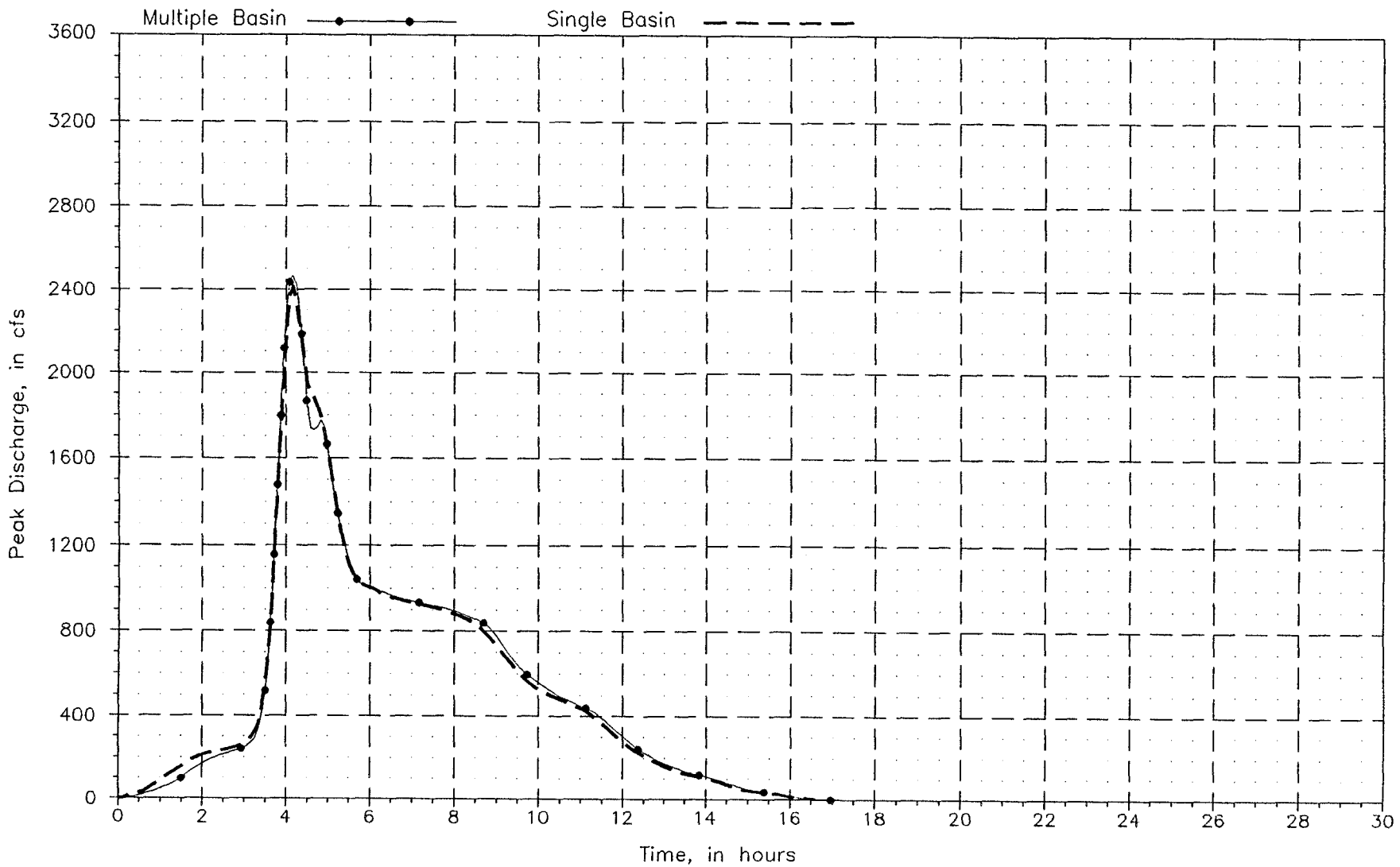

Figure H1
Golden Eagle Park Dam: 100-year, 6-hour hydrographs

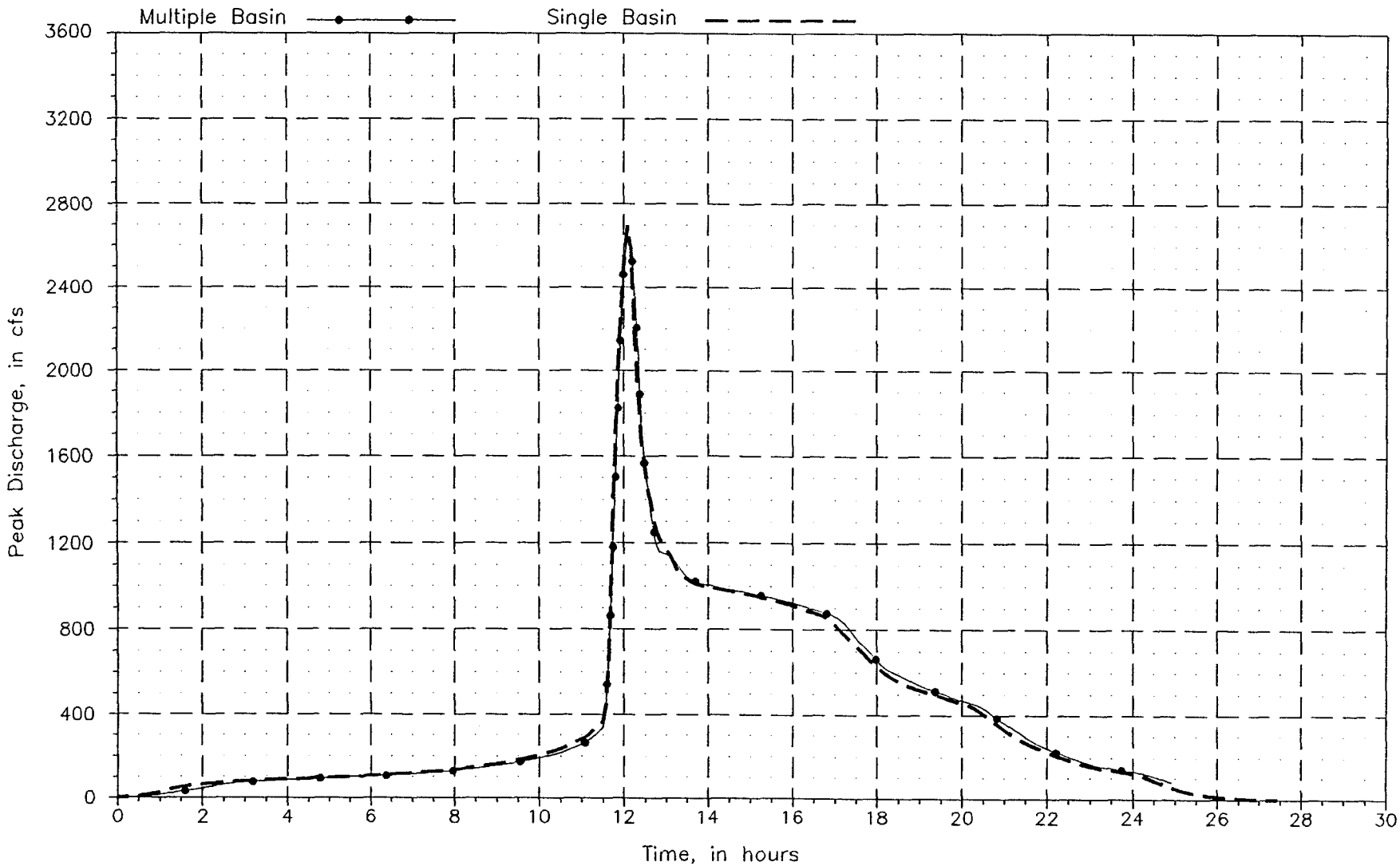

Figure H2
Golden Eagle Park Dam: 100-year, 24-hour hydrographs

APPENDIX I

Incremental damage analysis supporting calculations, BREACH, DAMBRK, HEC-1 output and parameter documentation

```
1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*              MAY   1991           *
*           VERSION 4.0.1E          *
*                                   *
* RUN DATE  10/15/96  TIME  15:11:17 *
*                                   *
*************************************
```

```
*************************************
*                                   *
*   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        FOUNTAIN HILLS ADMP  GVSCE Project #63              Date: 10/15/96
  2           ID        PMF Routing Analysis GEPD Inflow Hydrograp          File: PMF-RT.IH1
  3           ID        PMF Inflow Hydrograph from GEPD-PMF.OH1               By: wso
  4           ID
  5           ID        JR Record used to Calculate 0.5PMF and 0.26PMF Runoff
  6           ID
              *DIAGRAM
  7           IT       5       0       0     210
  8           IN       5
  9           IO       1
 10           JR    FLOW     1.0     0.5    0.26
              *

 11           KK   C599I
 12           KM        PMF Inflow Hydrograph to GEPD
 13           BA    7.13
 14           QI    2557    2391    2090    1839    1635    1501    1401    1319    1252    1196
 15           QI    1155    1127    1109    1101    1113    1134    1144    1151    1158    1172
 16           QI    1192    1214    1239    1267    1298    2898    9000   20735   37590   53569
 17           QI   58754   55837   50581   43769   36839   31131   26527   22646   19477   16714
 18           QI   14532   12596   11016    9743    8724    7991    7404    6910    6514    6160
 19           QI    5743    5250    4788    4320    3861    3424    3064    2792    2565    2375
 20           QI    2209    2062    1898    1733    1604    1491    1399    1334    1286    1246
 21           QI    1212    1185    1167    1152    1129    1103    1085    1072    1060    1050
 22           QI    1040    1032    1023    1015    1007     999     991     984     977     969
 23           QI     961     952     944     935     927     919     912     906     900     894
 24           QI     888     880     873     865     857     848     838     827     814     801
 25           QI     785     766     744     709     673     642     618     597     580     565
 26           QI     552     544     536     529     522     515     509     502     496     490
 27           QI     483     477     471     464     457     450     442     434     426     418
 28           QI     410     402     394     382     363     337     311     288     268     253
 29           QI     239     228     219     211     205     200     196     192     187     183
 30           QI     179     174     170     166     162     159     155     152     148     145
 31           QI     142     139     136     133     131     128     125     123     120     118
 32           QI     115     113     111     108     106     103      98      90      82      77
 33           QI      72      67      62      56      51      47      42      39      35      32
              *

 34           KK   C599O
 35           KM        Reservoir route at C599 (GEPD)
 36           KM        Antecedent water surface set at emergency spillway crest
 37           RS       1    ELEV  1715.0
 38           SV    0.00    0.03    0.47   16.85   80.85      98  116.14  136.00  156.22  179.00
 39           SV  200.89  214.00  226.00  252.10  281.00  310.47  344.00  376.60  413.00  450.02
 40           SE  1694.7  1700.0 1702.00 1708.00 1714.00 1715.00 1716.00 1717.00 1718.00  1719.0
 41           SE  1720.0 1720.50 1721.00 1722.00 1723.00 1724.00 1725.00 1726.00 1727.00  1728.0
 42           SQ       0      95     214     497     628     651    1097    2182    3943    6256
 43           SQ    8917   10376   11902   15529   21659   29743   39565   50633   62566   75527
 44           SE  1694.7  1698.0  1700.0 1708.00 1714.00 1715.00 1716.00 1717.00 1718.00  1719.0
 45           SE  1720.0 1720.50 1721.00 1722.00 1723.00 1724.00 1725.00 1726.00 1727.00  1728.0
 46           RL                    0.97
```

```
            47          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    11       C599I
                V
                V
    34       C5990

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                    ****************************************
 *                                      *                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *   U.S. ARMY CORPS OF ENGINEERS       *
 *              MAY   1991              *                    *   HYDROLOGIC ENGINEERING CENTER      *
 *           VERSION 4.0.1E             *                    *         609 SECOND STREET            *
 *                                      *                    *      DAVIS, CALIFORNIA 95616         *
 *  RUN DATE  10/15/96  TIME  15:11:17  *                    *          (916) 551-1748              *
 *                                      *                    *                                      *
 ****************************************                    ****************************************


                          FOUNTAIN HILLS ADMP  GVSCE Project #63          Date: 10/15/96
                          PMF Routing Analysis GEPD Inflow Hydrograp      File: PMF-RT.IH1
                          PMF Inflow Hydrograph from GEPD-PMF.OH1           By: wso

                          JR Record used to Calculate 0.5PMF and 0.26PMF Runoff


    9 IO          OUTPUT CONTROL VARIABLES
                        IPRNT          1  PRINT CONTROL
                        IPLOT          0  PLOT CONTROL
                        QSCAL         0.  HYDROGRAPH PLOT SCALE

      IT          HYDROGRAPH TIME DATA
                         NMIN          5  MINUTES IN COMPUTATION INTERVAL
                        IDATE      1   0  STARTING DATE
                        ITIME       0000  STARTING TIME
                           NQ        210  NUMBER OF HYDROGRAPH ORDINATES
                       NDDATE      1   0  ENDING DATE
                       NDTIME       1725  ENDING TIME
                        ICENT         19  CENTURY MARK

                   COMPUTATION INTERVAL    0.08 HOURS
                        TOTAL TIME BASE   17.42 HOURS

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

      JP          MULTI-PLAN OPTION
                       NPLAN          1  NUMBER OF PLANS

      JR          MULTI-RATIO OPTION
                      RATIOS OF RUNOFF
                     1.00      0.50      0.26


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


            **************
            *            *
   11 KK    *     C599I  *
            *            *
            **************
                          PMF Inflow Hydrograph to GEPD

    8 IN          TIME DATA FOR INPUT TIME SERIES
                       JXMIN          5  TIME INTERVAL IN MINUTES
                      JXDATE      1   0  STARTING DATE
                      JXTIME          0  STARTING TIME

               SUBBASIN RUNOFF DATA

   13 BA          SUBBASIN CHARACTERISTICS
                       TAREA       7.13  SUBBASIN AREA
```

***

HYDROGRAPH AT STATION C599I

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1		0000	1	2557.	1		0425	54	4320.	1		0850	107	838.	1		1315	160	183.
1		0005	2	2391.	1		0430	55	3861.	1		0855	108	827.	1		1320	161	179.
1		0010	3	2090.	1		0435	56	3424.	1		0900	109	814.	1		1325	162	174.
1		0015	4	1839.	1		0440	57	3064.	1		0905	110	801.	1		1330	163	170.
1		0020	5	1635.	1		0445	58	2792.	1		0910	111	785.	1		1335	164	166.
1		0025	6	1501.	1		0450	59	2565.	1		0915	112	766.	1		1340	165	162.
1		0030	7	1401.	1		0455	60	2375.	1		0920	113	744.	1		1345	166	159.
1		0035	8	1319.	1		0500	61	2209.	1		0925	114	709.	1		1350	167	155.
1		0040	9	1252.	1		0505	62	2062.	1		0930	115	673.	1		1355	168	152.
1		0045	10	1196.	1		0510	63	1898.	1		0935	116	642.	1		1400	169	148.
1		0050	11	1155.	1		0515	64	1733.	1		0940	117	618.	1		1405	170	145.
1		0055	12	1127.	1		0520	65	1604.	1		0945	118	597.	1		1410	171	142.
1		0100	13	1109.	1		0525	66	1491.	1		0950	119	580.	1		1415	172	139.
1		0105	14	1101.	1		0530	67	1399.	1		0955	120	565.	1		1420	173	136.
1		0110	15	1113.	1		0535	68	1334.	1		1000	121	552.	1		1425	174	133.
1		0115	16	1134.	1		0540	69	1286.	1		1005	122	544.	1		1430	175	131.
1		0120	17	1144.	1		0545	70	1246.	1		1010	123	536.	1		1435	176	128.
1		0125	18	1151.	1		0550	71	1212.	1		1015	124	529.	1		1440	177	125.
1		0130	19	1158.	1		0555	72	1185.	1		1020	125	522.	1		1445	178	123.
1		0135	20	1172.	1		0600	73	1167.	1		1025	126	515.	1		1450	179	120.
1		0140	21	1192.	1		0605	74	1152.	1		1030	127	509.	1		1455	180	118.
1		0145	22	1214.	1		0610	75	1129.	1		1035	128	502.	1		1500	181	115.
1		0150	23	1239.	1		0615	76	1103.	1		1040	129	496.	1		1505	182	113.
1		0155	24	1267.	1		0620	77	1085.	1		1045	130	490.	1		1510	183	111.
1		0200	25	1298.	1		0625	78	1072.	1		1050	131	483.	1		1515	184	108.
1		0205	26	2898.	1		0630	79	1060.	1		1055	132	477.	1		1520	185	106.
1		0210	27	9000.	1		0635	80	1050.	1		1100	133	471.	1		1525	186	103.
1		0215	28	20735.	1		0640	81	1040.	1		1105	134	464.	1		1530	187	98.
1		0220	29	37590.	1		0645	82	1032.	1		1110	135	457.	1		1535	188	90.
1		0225	30	53569.	1		0650	83	1023.	1		1115	136	450.	1		1540	189	82.
1		0230	31	58754.	1		0655	84	1015.	1		1120	137	442.	1		1545	190	77.
1		0235	32	55837.	1		0700	85	1007.	1		1125	138	434.	1		1550	191	72.
1		0240	33	50581.	1		0705	86	999.	1		1130	139	426.	1		1555	192	67.
1		0245	34	43769.	1		0710	87	991.	1		1135	140	418.	1		1600	193	62.
1		0250	35	36839.	1		0715	88	984.	1		1140	141	410.	1		1605	194	56.
1		0255	36	31131.	1		0720	89	977.	1		1145	142	402.	1		1610	195	51.
1		0300	37	26527.	1		0725	90	969.	1		1150	143	394.	1		1615	196	47.
1		0305	38	22646.	1		0730	91	961.	1		1155	144	382.	1		1620	197	42.
1		0310	39	19477.	1		0735	92	952.	1		1200	145	363.	1		1625	198	39.
1		0315	40	16714.	1		0740	93	944.	1		1205	146	337.	1		1630	199	35.
1		0320	41	14532.	1		0745	94	935.	1		1210	147	311.	1		1635	200	32.
1		0325	42	12596.	1		0750	95	927.	1		1215	148	288.	1		1640	201	32.
1		0330	43	11016.	1		0755	96	919.	1		1220	149	268.	1		1645	202	32.
1		0335	44	9743.	1		0800	97	912.	1		1225	150	253.	1		1650	203	32.
1		0340	45	8724.	1		0805	98	906.	1		1230	151	239.	1		1655	204	32.
1		0345	46	7991.	1		0810	99	900.	1		1235	152	228.	1		1700	205	32.
1		0350	47	7404.	1		0815	100	894.	1		1240	153	219.	1		1705	206	32.
1		0355	48	6910.	1		0820	101	888.	1		1245	154	211.	1		1710	207	32.
1		0400	49	6514.	1		0825	102	880.	1		1250	155	205.	1		1715	208	32.
1		0405	50	6160.	1		0830	103	873.	1		1255	156	200.	1		1720	209	32.
1		0410	51	5743.	1		0835	104	865.	1		1300	157	196.	1		1725	210	32.
1		0415	52	5250.	1		0840	105	857.	1		1305	158	192.					
1		0420	53	4788.	1		0845	106	848.	1		1310	159	187.					

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	17.42-HR
		(CFS)				
58754.	2.50		9286.	3498.	3498.	3498.
		(INCHES)	12.108	13.242	13.242	13.242
		(AC-FT)	4604.	5035.	5035.	5035.

CUMULATIVE AREA = 7.13 SQ MI

HYDROGRAPH AT STATION C599I
PLAN 1, RATIO = 1.00

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1		0000	1	2557.	1		0425	54	4320.	1		0850	107	838.	1		1315	160	183.
1		0005	2	2391.	1		0430	55	3861.	1		0855	108	827.	1		1320	161	179.
1		0010	3	2090.	1		0435	56	3424.	1		0900	109	814.	1		1325	162	174.

1	0015	4	1839.	*	1	0440	57	3064.	*	1	0905	110	801.	*	1	1330	163	170.
1	0020	5	1635.	*	1	0445	58	2792.	*	1	0910	111	785.	*	1	1335	164	166.
1	0025	6	1501.	*	1	0450	59	2565.	*	1	0915	112	766.	*	1	1340	165	162.
1	0030	7	1401.	*	1	0455	60	2375.	*	1	0920	113	744.	*	1	1345	166	159.
1	0035	8	1319.	*	1	0500	61	2209.	*	1	0925	114	709.	*	1	1350	167	155.
1	0040	9	1252.	*	1	0505	62	2062.	*	1	0930	115	673.	*	1	1355	168	152.
1	0045	10	1196.	*	1	0510	63	1898.	*	1	0935	116	642.	*	1	1400	169	148.
1	0050	11	1155.	*	1	0515	64	1733.	*	1	0940	117	618.	*	1	1405	170	145.
1	0055	12	1127.	*	1	0520	65	1604.	*	1	0945	118	597.	*	1	1410	171	142.
1	0100	13	1109.	*	1	0525	66	1491.	*	1	0950	119	580.	*	1	1415	172	139.
1	0105	14	1101.	*	1	0530	67	1399.	*	1	0955	120	565.	*	1	1420	173	136.
1	0110	15	1113.	*	1	0535	68	1334.	*	1	1000	121	552.	*	1	1425	174	133.
1	0115	16	1134.	*	1	0540	69	1286.	*	1	1005	122	544.	*	1	1430	175	131.
1	0120	17	1144.	*	1	0545	70	1246.	*	1	1010	123	536.	*	1	1435	176	128.
1	0125	18	1151.	*	1	0550	71	1212.	*	1	1015	124	529.	*	1	1440	177	125.
1	0130	19	1158.	*	1	0555	72	1185.	*	1	1020	125	522.	*	1	1445	178	123.
1	0135	20	1172.	*	1	0600	73	1167.	*	1	1025	126	515.	*	1	1450	179	120.
1	0140	21	1192.	*	1	0605	74	1152.	*	1	1030	127	509.	*	1	1455	180	118.
1	0145	22	1214.	*	1	0610	75	1129.	*	1	1035	128	502.	*	1	1500	181	115.
1	0150	23	1239.	*	1	0615	76	1103.	*	1	1040	129	496.	*	1	1505	182	113.
1	0155	24	1267.	*	1	0620	77	1085.	*	1	1045	130	490.	*	1	1510	183	111.
1	0200	25	1298.	*	1	0625	78	1072.	*	1	1050	131	483.	*	1	1515	184	108.
1	0205	26	2898.	*	1	0630	79	1060.	*	1	1055	132	477.	*	1	1520	185	106.
1	0210	27	9000.	*	1	0635	80	1050.	*	1	1100	133	471.	*	1	1525	186	103.
1	0215	28	20735.	*	1	0640	81	1040.	*	1	1105	134	464.	*	1	1530	187	98.
1	0220	29	37590.	*	1	0645	82	1032.	*	1	1110	135	457.	*	1	1535	188	90.
1	0225	30	53569.	*	1	0650	83	1023.	*	1	1115	136	450.	*	1	1540	189	82.
1	0230	31	58754.	*	1	0655	84	1015.	*	1	1120	137	442.	*	1	1545	190	77.
1	0235	32	55837.	*	1	0700	85	1007.	*	1	1125	138	434.	*	1	1550	191	72.
1	0240	33	50581.	*	1	0705	86	999.	*	1	1130	139	426.	*	1	1555	192	67.
1	0245	34	43769.	*	1	0710	87	991.	*	1	1135	140	418.	*	1	1600	193	62.
1	0250	35	36839.	*	1	0715	88	984.	*	1	1140	141	410.	*	1	1605	194	56.
1	0255	36	31131.	*	1	0720	89	977.	*	1	1145	142	402.	*	1	1610	195	51.
1	0300	37	26527.	*	1	0725	90	969.	*	1	1150	143	394.	*	1	1615	196	47.
1	0305	38	22646.	*	1	0730	91	961.	*	1	1155	144	382.	*	1	1620	197	42.
1	0310	39	19477.	*	1	0735	92	952.	*	1	1200	145	363.	*	1	1625	198	39.
1	0315	40	16714.	*	1	0740	93	944.	*	1	1205	146	337.	*	1	1630	199	35.
1	0320	41	14532.	*	1	0745	94	935.	*	1	1210	147	311.	*	1	1635	200	32.
1	0325	42	12596.	*	1	0750	95	927.	*	1	1215	148	288.	*	1	1640	201	32.
1	0330	43	11016.	*	1	0755	96	919.	*	1	1220	149	268.	*	1	1645	202	32.
1	0335	44	9743.	*	1	0800	97	912.	*	1	1225	150	253.	*	1	1650	203	32.
1	0340	45	8724.	*	1	0805	98	906.	*	1	1230	151	239.	*	1	1655	204	32.
1	0345	46	7991.	*	1	0810	99	900.	*	1	1235	152	228.	*	1	1700	205	32.
1	0350	47	7404.	*	1	0815	100	894.	*	1	1240	153	219.	*	1	1705	206	32.
1	0355	48	6910.	*	1	0820	101	888.	*	1	1245	154	211.	*	1	1710	207	32.
1	0400	49	6514.	*	1	0825	102	880.	*	1	1250	155	205.	*	1	1715	208	32.
1	0405	50	6160.	*	1	0830	103	873.	*	1	1255	156	200.	*	1	1720	209	32.
1	0410	51	5743.	*	1	0835	104	865.	*	1	1300	157	196.	*	1	1725	210	32.
1	0415	52	5250.	*	1	0840	105	857.	*	1	1305	158	192.	*				
1	0420	53	4788.	*	1	0845	106	848.	*	1	1310	159	187.	*				

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	17.42-HR
+ (CFS)	(HR)					
		(CFS)				
+ 58754.	2.50		9286.	3498.	3498.	3498.
		(INCHES)	12.108	13.242	13.242	13.242
		(AC-FT)	4604.	5035.	5035.	5035.

CUMULATIVE AREA = 7.13 SQ MI

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HYDROGRAPH AT STATION C599I
PLAN 1, RATIO = 0.50

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DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW
1		0000	1	1279.	*	1		0425	54	2160.	*	1		0850	107	419.	*	1		1315	160	92.
1		0005	2	1196.	*	1		0430	55	1931.	*	1		0855	108	414.	*	1		1320	161	90.
1		0010	3	1045.	*	1		0435	56	1712.	*	1		0900	109	407.	*	1		1325	162	87.
1		0015	4	920.	*	1		0440	57	1532.	*	1		0905	110	401.	*	1		1330	163	85.
1		0020	5	818.	*	1		0445	58	1396.	*	1		0910	111	393.	*	1		1335	164	83.
1		0025	6	751.	*	1		0450	59	1283.	*	1		0915	112	383.	*	1		1340	165	81.
1		0030	7	701.	*	1		0455	60	1188.	*	1		0920	113	372.	*	1		1345	166	80.
1		0035	8	660.	*	1		0500	61	1105.	*	1		0925	114	355.	*	1		1350	167	78.
1		0040	9	626.	*	1		0505	62	1031.	*	1		0930	115	337.	*	1		1355	168	76.
1		0045	10	598.	*	1		0510	63	949.	*	1		0935	116	321.	*	1		1400	169	74.
1		0050	11	578.	*	1		0515	64	867.	*	1		0940	117	309.	*	1		1405	170	73.
1		0055	12	564.	*	1		0520	65	802.	*	1		0945	118	299.	*	1		1410	171	71.
1		0100	13	555.	*	1		0525	66	746.	*	1		0950	119	290.	*	1		1415	172	70.
1		0105	14	551.	*	1		0530	67	700.	*	1		0955	120	283.	*	1		1420	173	68.
1		0110	15	557.	*	1		0535	68	667.	*	1		1000	121	276.	*	1		1425	174	67.
1		0115	16	567.	*	1		0540	69	643.	*	1		1005	122	272.	*	1		1430	175	66.

1	0120	17	572.	*	1	0545	70	623.	*	1	1010	123	268.	*	1	1435	176	64.
1	0125	18	576.	*	1	0550	71	606.	*	1	1015	124	265.	*	1	1440	177	63.
1	0130	19	579.	*	1	0555	72	593.	*	1	1020	125	261.	*	1	1445	178	62.
1	0135	20	586.	*	1	0600	73	584.	*	1	1025	126	258.	*	1	1450	179	60.
1	0140	21	596.	*	1	0605	74	576.	*	1	1030	127	255.	*	1	1455	180	59.
1	0145	22	607.	*	1	0610	75	565.	*	1	1035	128	251.	*	1	1500	181	58.
1	0150	23	620.	*	1	0615	76	552.	*	1	1040	129	248.	*	1	1505	182	57.
1	0155	24	634.	*	1	0620	77	543.	*	1	1045	130	245.	*	1	1510	183	56.
1	0200	25	649.	*	1	0625	78	536.	*	1	1050	131	242.	*	1	1515	184	54.
1	0205	26	1449.	*	1	0630	79	530.	*	1	1055	132	239.	*	1	1520	185	53.
1	0210	27	4500.	*	1	0635	80	525.	*	1	1100	133	236.	*	1	1525	186	52.
1	0215	28	10368.	*	1	0640	81	520.	*	1	1105	134	232.	*	1	1530	187	49.
1	0220	29	18795.	*	1	0645	82	516.	*	1	1110	135	229.	*	1	1535	188	45.
1	0225	30	26785.	*	1	0650	83	512.	*	1	1115	136	225.	*	1	1540	189	41.
1	0230	31	29377.	*	1	0655	84	508.	*	1	1120	137	221.	*	1	1545	190	39.
1	0235	32	27919.	*	1	0700	85	504.	*	1	1125	138	217.	*	1	1550	191	36.
1	0240	33	25291.	*	1	0705	86	500.	*	1	1130	139	213.	*	1	1555	192	34.
1	0245	34	21885.	*	1	0710	87	496.	*	1	1135	140	209.	*	1	1600	193	31.
1	0250	35	18420.	*	1	0715	88	492.	*	1	1140	141	205.	*	1	1605	194	28.
1	0255	36	15566.	*	1	0720	89	489.	*	1	1145	142	201.	*	1	1610	195	26.
1	0300	37	13264.	*	1	0725	90	485.	*	1	1150	143	197.	*	1	1615	196	24.
1	0305	38	11323.	*	1	0730	91	481.	*	1	1155	144	191.	*	1	1620	197	21.
1	0310	39	9739.	*	1	0735	92	476.	*	1	1200	145	182.	*	1	1625	198	20.
1	0315	40	8357.	*	1	0740	93	472.	*	1	1205	146	169.	*	1	1630	199	18.
1	0320	41	7266.	*	1	0745	94	468.	*	1	1210	147	156.	*	1	1635	200	16.
1	0325	42	6298.	*	1	0750	95	464.	*	1	1215	148	144.	*	1	1640	201	16.
1	0330	43	5508.	*	1	0755	96	460.	*	1	1220	149	134.	*	1	1645	202	16.
1	0335	44	4872.	*	1	0800	97	456.	*	1	1225	150	127.	*	1	1650	203	16.
1	0340	45	4362.	*	1	0805	98	453.	*	1	1230	151	120.	*	1	1655	204	16.
1	0345	46	3996.	*	1	0810	99	450.	*	1	1235	152	114.	*	1	1700	205	16.
1	0350	47	3702.	*	1	0815	100	447.	*	1	1240	153	110.	*	1	1705	206	16.
1	0355	48	3455.	*	1	0820	101	444.	*	1	1245	154	106.	*	1	1710	207	16.
1	0400	49	3257.	*	1	0825	102	440.	*	1	1250	155	103.	*	1	1715	208	16.
1	0405	50	3080.	*	1	0830	103	437.	*	1	1255	156	100.	*	1	1720	209	16.
1	0410	51	2872.	*	1	0835	104	433.	*	1	1300	157	98.	*	1	1725	210	16.
1	0415	52	2625.	*	1	0840	105	429.	*	1	1305	158	96.	*				
1	0420	53	2394.	*	1	0845	106	424.	*	1	1310	159	94.	*				

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	17.42-HR
+ (CFS)	(HR)					
		(CFS)				
+ 29377.	2.50		4643.	1749.	1749.	1749.
		(INCHES)	6.054	6.621	6.621	6.621
		(AC-FT)	2302.	2518.	2518.	2518.

CUMULATIVE AREA = 7.13 SQ MI

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HYDROGRAPH AT STATION C599I
PLAN 1, RATIO = 0.26

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DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW
1		0000	1	665.	*	1		0425	54	1123.	*	1		0850	107	218.	*	1		1315	160	48.
1		0005	2	622.	*	1		0430	55	1004.	*	1		0855	108	215.	*	1		1320	161	47.
1		0010	3	543.	*	1		0435	56	890.	*	1		0900	109	212.	*	1		1325	162	45.
1		0015	4	478.	*	1		0440	57	797.	*	1		0905	110	208.	*	1		1330	163	44.
1		0020	5	425.	*	1		0445	58	726.	*	1		0910	111	204.	*	1		1335	164	43.
1		0025	6	390.	*	1		0450	59	667.	*	1		0915	112	199.	*	1		1340	165	42.
1		0030	7	364.	*	1		0455	60	618.	*	1		0920	113	193.	*	1		1345	166	41.
1		0035	8	343.	*	1		0500	61	574.	*	1		0925	114	184.	*	1		1350	167	40.
1		0040	9	326.	*	1		0505	62	536.	*	1		0930	115	175.	*	1		1355	168	40.
1		0045	10	311.	*	1		0510	63	493.	*	1		0935	116	167.	*	1		1400	169	38.
1		0050	11	300.	*	1		0515	64	451.	*	1		0940	117	161.	*	1		1405	170	38.
1		0055	12	293.	*	1		0520	65	417.	*	1		0945	118	155.	*	1		1410	171	37.
1		0100	13	288.	*	1		0525	66	388.	*	1		0950	119	151.	*	1		1415	172	36.
1		0105	14	286.	*	1		0530	67	364.	*	1		0955	120	147.	*	1		1420	173	35.
1		0110	15	289.	*	1		0535	68	347.	*	1		1000	121	144.	*	1		1425	174	35.
1		0115	16	295.	*	1		0540	69	334.	*	1		1005	122	141.	*	1		1430	175	34.
1		0120	17	297.	*	1		0545	70	324.	*	1		1010	123	139.	*	1		1435	176	33.
1		0125	18	299.	*	1		0550	71	315.	*	1		1015	124	138.	*	1		1440	177	33.
1		0130	19	301.	*	1		0555	72	308.	*	1		1020	125	136.	*	1		1445	178	32.
1		0135	20	305.	*	1		0600	73	303.	*	1		1025	126	134.	*	1		1450	179	31.
1		0140	21	310.	*	1		0605	74	300.	*	1		1030	127	132.	*	1		1455	180	31.
1		0145	22	316.	*	1		0610	75	294.	*	1		1035	128	131.	*	1		1500	181	30.
1		0150	23	322.	*	1		0615	76	287.	*	1		1040	129	129.	*	1		1505	182	29.
1		0155	24	329.	*	1		0620	77	282.	*	1		1045	130	127.	*	1		1510	183	29.
1		0200	25	337.	*	1		0625	78	279.	*	1		1050	131	126.	*	1		1515	184	28.
1		0205	26	753.	*	1		0630	79	276.	*	1		1055	132	124.	*	1		1520	185	28.
1		0210	27	2340.	*	1		0635	80	273.	*	1		1100	133	122.	*	1		1525	186	27.
1		0215	28	5391.	*	1		0640	81	270.	*	1		1105	134	121.	*	1		1530	187	25.
1		0220	29	9773.	*	1		0645	82	268.	*	1		1110	135	119.	*	1		1535	188	23.

1	0225	30	13928.	*	1	0650	83	266.	*	1	1115	136	117.	*	1	1540	189	21.
1	0230	31	15276.	*	1	0655	84	264.	*	1	1120	137	115.	*	1	1545	190	20.
1	0235	32	14518.	*	1	0700	85	262.	*	1	1125	138	113.	*	1	1550	191	19.
1	0240	33	13151.	*	1	0705	86	260.	*	1	1130	139	111.	*	1	1555	192	17.
1	0245	34	11380.	*	1	0710	87	258.	*	1	1135	140	109.	*	1	1600	193	16.
1	0250	35	9578.	*	1	0715	88	256.	*	1	1140	141	107.	*	1	1605	194	15.
1	0255	36	8094.	*	1	0720	89	254.	*	1	1145	142	105.	*	1	1610	195	13.
1	0300	37	6897.	*	1	0725	90	252.	*	1	1150	143	102.	*	1	1615	196	12.
1	0305	38	5888.	*	1	0730	91	250.	*	1	1155	144	99.	*	1	1620	197	11.
1	0310	39	5064.	*	1	0735	92	248.	*	1	1200	145	94.	*	1	1625	198	10.
1	0315	40	4346.	*	1	0740	93	245.	*	1	1205	146	88.	*	1	1630	199	9.
1	0320	41	3778.	*	1	0745	94	243.	*	1	1210	147	81.	*	1	1635	200	8.
1	0325	42	3275.	*	1	0750	95	241.	*	1	1215	148	75.	*	1	1640	201	8.
1	0330	43	2864.	*	1	0755	96	239.	*	1	1220	149	70.	*	1	1645	202	8.
1	0335	44	2533.	*	1	0800	97	237.	*	1	1225	150	66.	*	1	1650	203	8.
1	0340	45	2268.	*	1	0805	98	236.	*	1	1230	151	62.	*	1	1655	204	8.
1	0345	46	2078.	*	1	0810	99	234.	*	1	1235	152	59.	*	1	1700	205	8.
1	0350	47	1925.	*	1	0815	100	232.	*	1	1240	153	57.	*	1	1705	206	8.
1	0355	48	1797.	*	1	0820	101	231.	*	1	1245	154	55.	*	1	1710	207	8.
1	0400	49	1694.	*	1	0825	102	229.	*	1	1250	155	53.	*	1	1715	208	8.
1	0405	50	1602.	*	1	0830	103	227.	*	1	1255	156	52.	*	1	1720	209	8.
1	0410	51	1493.	*	1	0835	104	225.	*	1	1300	157	51.	*	1	1725	210	8.
1	0415	52	1365.	*	1	0840	105	223.	*	1	1305	158	50.	*				
1	0420	53	1245.	*	1	0845	106	220.	*	1	1310	159	49.	*				
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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	17.42-HR
+ (CFS)	(HR)					
		(CFS)				
+ 15276.	2.50		2414.	910.	910.	910.
		(INCHES)	3.148	3.443	3.443	3.443
		(AC-FT)	1197.	1309.	1309.	1309.

CUMULATIVE AREA = 7.13 SQ MI

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              *            *
   34 KK      *     C599O  *
              *            *
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Reservoir route at C599 (GEPD)
Antecedent water surface set at emergency spillway crest

HYDROGRAPH ROUTING DATA

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   46 RL          ROUTING LOSSES
                        QLOSS        0.00  INITIAL LOSS
                        CLOSS        0.00  ADDITIONAL FRACTION LOST
                       PERCRT        0.97  CHANNEL PERCOLATION RATE
                       ELVINV        0.00  INVERT ELEVATION

   37 RS          STORAGE ROUTING
                        NSTPS           1  NUMBER OF SUBREACHES
                         ITYP        ELEV  TYPE OF INITIAL CONDITION
                       RSVRIC     1715.00  INITIAL CONDITION
                            X        0.00 WORKING R AND D COEFFICIENT

   38 SV            STORAGE        0.0      0.0      0.5     16.9     80.8     98.0    116.1    136.0    156.2    179.0
                                 200.9    214.0    226.0    252.1    281.0    310.5    344.0    376.6    413.0    450.0

   40 SE          ELEVATION     1694.70  1700.00  1702.00  1708.00  1714.00  1715.00  1716.00  1717.00  1718.00  1719.00
                                1720.00  1720.50  1721.00  1722.00  1723.00  1724.00  1725.00  1726.00  1727.00  1728.00

   42 SQ          DISCHARGE        0.       95.      214.     497.     628.     651.    1097.    2182.    3943.    6256.
                                 8917.   10376.   11902.   15529.   21659.   29743.   39565.   50633.   62566.   75527.

   44 SE          ELEVATION     1694.70  1698.00  1700.00  1708.00  1714.00  1715.00  1716.00  1717.00  1718.00  1719.00
                                1720.00  1720.50  1721.00  1722.00  1723.00  1724.00  1725.00  1726.00  1727.00  1728.00
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COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	0.02	0.03	0.47	16.85	80.85	98.00	116.14	136.00	156.22
OUTFLOW	0.00	95.00	214.00	284.75	497.00	628.00	651.00	1097.00	2182.00	3943.00
ELEVATION	1694.70	1698.00	1700.00	1702.00	1708.00	1714.00	1715.00	1716.00	1717.00	1718.00
STORAGE	179.00	200.89	214.00	226.00	252.10	281.00	310.47	344.00	376.60	413.00
OUTFLOW	6256.00	8917.00	10376.00	11902.00	15529.00	21659.00	29743.00	39565.00	50633.00	62566.00
ELEVATION	1719.00	1720.00	1720.50	1721.00	1722.00	1723.00	1724.00	1725.00	1726.00	1727.00

STORAGE 450.02
OUTFLOW 75527.00
ELEVATION 1728.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 0. TO 75527.
THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

HYDROGRAPH AT STATION C5990
PLAN 1, RATIO = 1.00

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	651.	98.0	1715.0	1		0550	71	1365.	121.1	1716.2	1		1140	141	620.	77.0	1713.6
1		0005	2	936.	109.6	1715.6	1		0555	72	1312.	120.1	1716.2	1		1145	142	617.	75.5	1713.5
1		0010	3	1183.	117.7	1716.1	1		0600	73	1269.	119.3	1716.2	1		1150	143	614.	74.0	1713.4
1		0015	4	1430.	122.2	1716.3	1		0605	74	1234.	118.7	1716.1	1		1155	144	611.	72.5	1713.2
1		0020	5	1527.	124.0	1716.4	1		0610	75	1205.	118.1	1716.1	1		1200	145	607.	70.8	1713.1
1		0025	6	1540.	124.3	1716.4	1		0615	76	1177.	117.6	1716.1	1		1205	146	604.	69.1	1712.9
1		0030	7	1512.	123.7	1716.4	1		0620	77	1150.	117.1	1716.0	1		1210	147	600.	67.1	1712.7
1		0035	8	1464.	122.9	1716.3	1		0625	78	1128.	116.7	1716.0	1		1215	148	596.	65.1	1712.5
1		0040	9	1407.	121.8	1716.3	1		0630	79	1108.	116.3	1716.0	1		1220	149	591.	62.9	1712.3
1		0045	10	1349.	120.8	1716.2	1		0635	80	1094.	116.0	1716.0	1		1225	150	587.	60.7	1712.1
1		0050	11	1294.	119.8	1716.2	1		0640	81	1086.	115.7	1716.0	1		1230	151	582.	58.3	1711.9
1		0055	12	1246.	118.9	1716.1	1		0645	82	1079.	115.4	1716.0	1		1235	152	577.	55.9	1711.7
1		0100	13	1205.	118.1	1716.1	1		0650	83	1071.	115.1	1715.9	1		1240	153	572.	53.5	1711.4
1		0105	14	1173.	117.5	1716.1	1		0655	84	1063.	114.7	1715.9	1		1245	154	567.	51.1	1711.2
1		0110	15	1152.	117.2	1716.1	1		0700	85	1054.	114.4	1715.9	1		1250	155	562.	48.6	1711.0
1		0115	16	1143.	117.0	1716.0	1		0705	86	1046.	114.1	1715.9	1		1255	156	557.	46.2	1710.7
1		0120	17	1142.	117.0	1716.0	1		0710	87	1038.	113.8	1715.9	1		1300	157	552.	43.7	1710.5
1		0125	18	1144.	117.0	1716.0	1		0715	88	1030.	113.4	1715.9	1		1305	158	547.	41.3	1710.3
1		0130	19	1147.	117.1	1716.0	1		0720	89	1023.	113.1	1715.8	1		1310	159	542.	38.8	1710.1
1		0135	20	1153.	117.2	1716.1	1		0725	90	1015.	112.8	1715.8	1		1315	160	537.	36.4	1709.8
1		0140	21	1162.	117.3	1716.1	1		0730	91	1007.	112.5	1715.8	1		1320	161	532.	33.9	1709.6
1		0145	22	1175.	117.6	1716.1	1		0735	92	999.	112.2	1715.8	1		1325	162	527.	31.5	1709.4
1		0150	23	1191.	117.9	1716.1	1		0740	93	991.	111.8	1715.8	1		1330	163	522.	29.1	1709.1
1		0155	24	1211.	118.2	1716.1	1		0745	94	983.	111.5	1715.7	1		1335	164	517.	26.7	1708.9
1		0200	25	1233.	118.6	1716.1	1		0750	95	975.	111.2	1715.7	1		1340	165	512.	24.3	1708.7
1		0205	26	1507.	123.7	1716.4	1		0755	96	967.	110.8	1715.7	1		1345	166	507.	21.8	1708.5
1		0210	27	3248.	148.2	1717.6	1		0800	97	959.	110.5	1715.7	1		1350	167	502.	19.5	1708.2
1		0215	28	9549.	206.6	1720.2	1		0805	98	951.	110.2	1715.7	1		1355	168	497.	17.1	1708.0
1		0220	29	24332.	290.7	1723.3	1		0810	99	944.	109.9	1715.7	1		1400	169	470.	14.8	1707.2
1		0225	30	45923.	362.7	1725.6	1		0815	100	936.	109.6	1715.6	1		1405	170	442.	12.6	1706.5
1		0230	31	56857.	395.6	1726.5	1		0820	101	929.	109.3	1715.6	1		1410	171	417.	10.7	1705.7
1		0235	32	57322.	397.0	1726.6	1		0825	102	922.	109.0	1715.6	1		1415	172	393.	8.8	1705.1
1		0240	33	52960.	383.7	1726.2	1		0830	103	915.	108.7	1715.6	1		1420	173	371.	7.2	1704.4
1		0245	34	46762.	365.2	1725.7	1		0835	104	908.	108.4	1715.6	1		1425	174	351.	5.6	1703.9
1		0250	35	39800.	344.7	1725.0	1		0840	105	900.	108.1	1715.6	1		1430	175	332.	4.2	1703.3
1		0255	36	33943.	324.8	1724.4	1		0845	106	893.	107.8	1715.5	1		1435	176	315.	2.8	1702.9
1		0300	37	28837.	307.2	1723.9	1		0850	107	885.	107.5	1715.5	1		1440	177	299.	1.6	1702.4
1		0305	38	24707.	292.1	1723.4	1		0855	108	877.	107.2	1715.5	1		1445	178	279.	0.4	1701.8
1		0310	39	21230.	279.0	1722.9	1		0900	109	868.	106.8	1715.5	1		1450	179	85.	0.0	1697.7
1		0315	40	18584.	266.5	1722.5	1		0905	110	859.	106.4	1715.5	1		1455	180	151.	0.0	1698.9
1		0320	41	16084.	254.7	1722.1	1		0910	111	848.	106.0	1715.4	1		1500	181	84.	0.0	1697.6
1		0325	42	14323.	243.4	1721.7	1		0915	112	837.	105.6	1715.4	1		1505	182	142.	0.0	1698.8
1		0330	43	12694.	231.7	1721.2	1		0920	113	824.	105.0	1715.4	1		1510	183	84.	0.0	1697.6
1		0335	44	11237.	220.8	1720.8	1		0925	114	809.	104.4	1715.4	1		1515	184	133.	0.0	1698.6
1		0340	45	10049.	211.1	1720.4	1		0930	115	791.	103.7	1715.3	1		1520	185	83.	0.0	1697.6
1		0345	46	9112.	202.6	1720.1	1		0935	116	770.	102.8	1715.3	1		1525	186	125.	0.0	1698.5
1		0350	47	8290.	195.7	1719.8	1		0940	117	748.	101.9	1715.2	1		1530	187	78.	0.0	1697.4
1		0355	48	7621.	190.2	1719.5	1		0945	118	726.	101.1	1715.2	1		1535	188	109.	0.0	1698.2
1		0400	49	7085.	185.8	1719.3	1		0950	119	705.	100.2	1715.1	1		1540	189	65.	0.0	1697.0
1		0405	50	6643.	182.2	1719.1	1		0955	120	684.	99.3	1715.1	1		1545	190	92.	0.0	1697.9
1		0410	51	6238.	178.8	1719.0	1		1000	121	664.	98.5	1715.0	1		1550	191	59.	0.0	1696.7
1		0415	52	5854.	175.0	1718.8	1		1005	122	651.	97.8	1715.0	1		1555	192	79.	0.0	1697.4
1		0420	53	5421.	170.8	1718.6	1		1010	123	650.	97.0	1714.9	1		1600	193	52.	0.0	1696.5
1		0425	54	4972.	166.4	1718.4	1		1015	124	649.	96.2	1714.9	1		1605	194	66.	0.0	1697.0
1		0430	55	4515.	161.9	1718.2	1		1020	125	647.	95.4	1714.8	1		1610	195	43.	0.0	1696.2
1		0435	56	4063.	157.4	1718.1	1		1025	126	646.	94.5	1714.8	1		1615	196	55.	0.0	1696.6
1		0440	57	3672.	153.1	1717.8	1		1030	127	645.	93.6	1714.7	1		1620	197	35.	0.0	1695.9
1		0445	58	3329.	149.2	1717.7	1		1035	128	644.	92.6	1714.7	1		1625	198	45.	0.0	1696.3
1		0450	59	3029.	145.7	1717.5	1		1040	129	642.	91.6	1714.6	1		1630	199	30.	0.0	1695.7
1		0455	60	2771.	142.8	1717.3	1		1045	130	641.	90.6	1714.6	1		1635	200	37.	0.0	1696.0
1		0500	61	2550.	140.2	1717.2	1		1050	131	640.	89.5	1714.5	1		1640	201	28.	0.0	1695.7
1		0505	62	2359.	138.0	1717.1	1		1055	132	638.	88.4	1714.4	1		1645	202	36.	0.0	1695.9
1		0510	63	2184.	136.0	1717.0	1		1100	133	637.	87.3	1714.4	1		1650	203	29.	0.0	1695.7
1		0515	64	2067.	133.9	1716.9	1		1105	134	635.	86.2	1714.3	1		1655	204	35.	0.0	1695.9
1		0520	65	1940.	131.6	1716.8	1		1110	135	633.	85.0	1714.2	1		1700	205	29.	0.0	1695.7
1		0525	66	1816.	129.3	1716.7	1		1115	136	632.	83.7	1714.2	1		1705	206	34.	0.0	1695.9
1		0530	67	1699.	127.2	1716.6	1		1120	137	630.	82.5	1714.1	1		1710	207	30.	0.0	1695.7
1		0535	68	1593.	125.2	1716.5	1		1125	138	628.	81.1	1714.0	1		1715	208	34.	0.0	1695.9
1		0540	69	1504.	123.6	1716.4	1		1130	139	626.	79.8	1713.9	1		1720	209	30.	0.0	1695.8
1		0545	70	1428.	122.2	1716.3	1		1135	140	623.	78.4	1713.8	1		1725	210	34.	0.0	1695.9

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	17.42-HR
+ (CFS)	(HR)					
		(CFS)				
+ 57322.	2.58		9251.	3566.	3566.	3566.
		(INCHES)	12.063	13.499	13.499	13.499
		(AC-FT)	4587.	5133.	5133.	5133.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	17.42-HR
+ (AC-FT)	(HR)				
397.	2.58	177.	101.	101.	101.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	17.42-HR
+ (FEET)	(HR)				
1726.56	2.58	1718.60	1712.56	1712.56	1712.56

CUMULATIVE AREA = 7.13 SQ MI

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HYDROGRAPH AT STATION C5990
PLAN 1, RATIO = 0.50

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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
1		0000	1	651.	98.0	1715.0	*	1		0550	71	808.	104.4	1715.4	*	1		1140	141	391.	8.7	1705.0
1		0005	2	742.	101.7	1715.2	*	1		0555	72	775.	103.1	1715.3	*	1		1145	142	375.	7.4	1704.5
1		0010	3	801.	104.1	1715.3	*	1		0600	73	746.	101.9	1715.2	*	1		1150	143	360.	6.3	1704.1
1		0015	4	830.	105.3	1715.4	*	1		0605	74	720.	100.8	1715.2	*	1		1155	144	346.	5.2	1703.7
1		0020	5	836.	105.5	1715.4	*	1		0610	75	697.	99.9	1715.1	*	1		1200	145	332.	4.1	1703.3
1		0025	6	828.	105.2	1715.4	*	1		0615	76	675.	99.0	1715.1	*	1		1205	146	319.	3.1	1703.0
1		0030	7	812.	104.5	1715.4	*	1		0620	77	655.	98.2	1715.0	*	1		1210	147	305.	2.1	1702.6
1		0035	8	791.	103.7	1715.3	*	1		0625	78	650.	97.4	1715.0	*	1		1215	148	292.	1.0	1702.2
1		0040	9	768.	102.8	1715.3	*	1		0630	79	649.	96.6	1714.9	*	1		1220	149	236.	0.2	1700.6
1		0045	10	744.	101.8	1715.2	*	1		0635	80	648.	95.7	1714.9	*	1		1225	150	69.	0.0	1697.1
1		0050	11	719.	100.8	1715.2	*	1		0640	81	647.	94.9	1714.8	*	1		1230	151	173.	0.0	1699.3
1		0055	12	696.	99.8	1715.1	*	1		0645	82	646.	94.0	1714.8	*	1		1235	152	64.	0.0	1696.9
1		0100	13	675.	99.0	1715.1	*	1		0650	83	644.	93.1	1714.7	*	1		1240	153	156.	0.0	1699.0
1		0105	14	656.	98.2	1715.0	*	1		0655	84	643.	92.2	1714.7	*	1		1245	154	62.	0.0	1696.9
1		0110	15	650.	97.5	1715.0	*	1		0700	85	642.	91.2	1714.6	*	1		1250	155	142.	0.0	1698.8
1		0115	16	649.	96.9	1714.9	*	1		0705	86	641.	90.3	1714.5	*	1		1255	156	63.	0.0	1696.9
1		0120	17	649.	96.3	1714.9	*	1		0710	87	639.	89.3	1714.5	*	1		1300	157	132.	0.0	1698.6
1		0125	18	648.	95.8	1714.9	*	1		0715	88	638.	88.3	1714.4	*	1		1305	158	65.	0.0	1697.0
1		0130	19	647.	95.3	1714.8	*	1		0720	89	637.	87.3	1714.4	*	1		1310	159	122.	0.0	1698.5
1		0135	20	647.	94.9	1714.8	*	1		0725	90	635.	86.2	1714.3	*	1		1315	160	65.	0.0	1697.0
1		0140	21	646.	94.5	1714.8	*	1		0730	91	634.	85.2	1714.3	*	1		1320	161	114.	0.0	1698.3
1		0145	22	646.	94.2	1714.8	*	1		0735	92	632.	84.1	1714.2	*	1		1325	162	65.	0.0	1697.0
1		0150	23	646.	94.0	1714.8	*	1		0740	93	631.	83.0	1714.1	*	1		1330	163	105.	0.0	1698.2
1		0155	24	645.	93.9	1714.8	*	1		0745	94	629.	81.9	1714.1	*	1		1335	164	65.	0.0	1697.0
1		0200	25	645.	93.8	1714.8	*	1		0750	95	628.	80.8	1714.0	*	1		1340	165	97.	0.0	1698.0
1		0205	26	649.	96.6	1714.9	*	1		0755	96	626.	79.7	1713.9	*	1		1345	166	65.	0.0	1697.0
1		0210	27	982.	111.5	1715.7	*	1		0800	97	623.	78.5	1713.8	*	1		1350	167	90.	0.0	1697.8
1		0215	28	3238.	148.1	1717.6	*	1		0805	98	621.	77.4	1713.7	*	1		1355	168	65.	0.0	1696.9
1		0220	29	9384.	205.1	1720.2	*	1		0810	99	618.	76.2	1713.6	*	1		1400	169	84.	0.0	1697.6
1		0225	30	18489.	266.1	1722.5	*	1		0815	100	616.	75.1	1713.5	*	1		1405	170	63.	0.0	1696.9
1		0230	31	27329.	301.7	1723.7	*	1		0820	101	614.	73.9	1713.3	*	1		1410	171	79.	0.0	1697.5
1		0235	32	28610.	306.3	1723.9	*	1		0825	102	611.	72.7	1713.2	*	1		1415	172	62.	0.0	1696.9
1		0240	33	26661.	299.2	1723.6	*	1		0830	103	609.	71.5	1713.1	*	1		1420	173	75.	0.0	1697.3
1		0245	34	23675.	288.3	1723.2	*	1		0835	104	606.	70.3	1713.0	*	1		1425	174	61.	0.0	1696.8
1		0250	35	20437.	275.2	1722.8	*	1		0840	105	604.	69.1	1712.9	*	1		1430	175	71.	0.0	1697.2
1		0255	36	17529.	261.5	1722.3	*	1		0845	106	601.	67.9	1712.8	*	1		1435	176	59.	0.0	1696.8
1		0300	37	15046.	248.6	1721.9	*	1		0850	107	599.	66.7	1712.7	*	1		1440	177	67.	0.0	1697.0
1		0305	38	13264.	235.8	1721.4	*	1		0855	108	596.	65.4	1712.6	*	1		1445	178	58.	0.0	1696.7
1		0310	39	11519.	223.0	1720.9	*	1		0900	109	594.	64.2	1712.4	*	1		1450	179	63.	0.0	1696.9
1		0315	40	10046.	211.0	1720.4	*	1		0905	110	591.	62.9	1712.3	*	1		1455	180	56.	0.0	1696.6
1		0320	41	8801.	199.9	1720.0	*	1		0910	111	588.	61.5	1712.2	*	1		1500	181	60.	0.0	1696.8
1		0325	42	7609.	190.1	1719.5	*	1		0915	112	586.	60.2	1712.1	*	1		1505	182	54.	0.0	1696.6
1		0330	43	6602.	181.8	1719.1	*	1		0920	113	583.	58.7	1711.9	*	1		1510	183	58.	0.0	1696.7
1		0335	44	5828.	174.8	1718.8	*	1		0925	114	580.	57.2	1711.8	*	1		1515	184	52.	0.0	1696.5
1		0340	45	5200.	168.6	1718.5	*	1		0930	115	576.	55.6	1711.6	*	1		1520	185	55.	0.0	1696.6
1		0345	46	4671.	163.4	1718.3	*	1		0935	116	573.	53.9	1711.5	*	1		1525	186	50.	0.0	1696.4
1		0350	47	4245.	159.2	1718.1	*	1		0940	117	569.	52.2	1711.3	*	1		1530	187	50.	0.0	1696.5
1		0355	48	3904.	155.8	1718.0	*	1		0945	118	566.	50.4	1711.1	*	1		1535	188	44.	0.0	1696.2
1		0400	49	3651.	152.9	1717.8	*	1		0950	119	562.	48.5	1711.0	*	1		1540	189	42.	0.0	1696.2
1		0405	50	3428.	150.3	1717.7	*	1		0955	120	558.	46.6	1710.8	*	1		1545	190	38.	0.0	1696.0
1		0410	51	3220.	147.9	1717.6	*	1		1000	121	554.	44.7	1710.6	*	1		1550	191	37.	0.0	1696.0
1		0415	52	3002.	145.4	1717.5	*	1		1005	122	550.	42.8	1710.4	*	1		1555	192	33.	0.0	1695.8
1		0420	53	2775.	142.8	1717.3	*	1		1010	123	546.	40.9	1710.3	*	1		1600	193	32.	0.0	1695.8
1		0425	54	2545.	140.2	1717.2	*	1		1015	124	542.	39.0	1710.1	*	1		1605	194	27.	0.0	1695.7
1		0430	55	2314.	137.5	1717.1	*	1		1020	125	538.	37.1	1709.9	*	1		1610	195	26.	0.0	1695.6
1		0435	56	2117.	134.8	1716.9	*	1		1025	126	534.	35.1	1709.7	*	1		1615	196	23.	0.0	1695.5
1		0440	57	1960.	131.9	1716.8	*	1		1030	127	531.	33.2	1709.5	*	1		1620	197	22.	0.0	1695.4
1		0445	58	1803.	129.1	1716.7	*	1		1035	128	527.	31.3	1709.4	*	1		1625	198	19.	0.0	1695.4
1		0450	59	1656.	126.4	1716.5	*	1		1040	129	523.	29.4	1709.2	*	1		1630	199	18.	0.0	1695.3

1	0455	60	1523.	123.9	1716.4	*	1	1045	130	519.	27.6	1709.0	*	1	1635	200	16.	0.0	1695.2
1	0500	61	1403.	121.7	1716.3	*	1	1050	131	515.	25.7	1708.8	*	1	1640	201	16.	0.0	1695.3
1	0505	62	1297.	119.8	1716.2	*	1	1055	132	511.	23.8	1708.7	*	1	1645	202	16.	0.0	1695.2
1	0510	63	1200.	118.0	1716.1	*	1	1100	133	507.	21.9	1708.5	*	1	1650	203	16.	0.0	1695.3
1	0515	64	1107.	116.3	1716.0	*	1	1105	134	504.	20.0	1708.3	*	1	1655	204	16.	0.0	1695.2
1	0520	65	1059.	114.6	1715.9	*	1	1110	135	500.	18.2	1708.1	*	1	1700	205	16.	0.0	1695.3
1	0525	66	1015.	112.8	1715.8	*	1	1115	136	490.	16.3	1707.8	*	1	1705	206	16.	0.0	1695.3
1	0530	67	969.	110.9	1715.7	*	1	1120	137	467.	14.6	1707.2	*	1	1710	207	16.	0.0	1695.3
1	0535	68	925.	109.1	1715.6	*	1	1125	138	446.	12.9	1706.6	*	1	1715	208	16.	0.0	1695.3
1	0540	69	882.	107.4	1715.5	*	1	1130	139	426.	11.4	1706.0	*	1	1720	209	16.	0.0	1695.3
1	0545	70	843.	105.8	1715.4	*	1	1135	140	408.	10.0	1705.5	*	1	1725	210	16.	0.0	1695.3

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	17.42-HR
+ (CFS)	(HR)	(CFS)				
+ 28610.	2.58		4635.	1817.	1817.	1817.
		(INCHES)	6.045	6.879	6.879	6.879
		(AC-FT)	2299.	2616.	2616.	2616.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	17.42-HR
+ (AC-FT)	(HR)				
306.	2.58	144.	70.	70.	70.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	17.42-HR
+ (FEET)	(HR)				
1723.86	2.58	1717.18	1708.97	1708.97	1708.97

CUMULATIVE AREA = 7.13 SQ MI

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HYDROGRAPH AT STATION C5990
PLAN 1, RATIO = 0.26

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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
1		0000	1	651.	98.0	1715.0	*	1		0550	71	637.	87.3	1714.4	*	1		1140	141	98.	0.0	1698.1
1		0005	2	651.	97.9	1715.0	*	1		0555	72	634.	85.0	1714.2	*	1		1145	142	113.	0.0	1698.3
1		0010	3	650.	97.5	1715.0	*	1		0600	73	631.	82.8	1714.1	*	1		1150	143	95.	0.0	1698.0
1		0015	4	649.	96.5	1714.9	*	1		0605	74	627.	80.5	1714.0	*	1		1155	144	107.	0.0	1698.2
1		0020	5	647.	95.2	1714.8	*	1		0610	75	623.	78.3	1713.8	*	1		1200	145	88.	0.0	1697.8
1		0025	6	645.	93.5	1714.7	*	1		0615	76	618.	76.0	1713.5	*	1		1205	146	94.	0.0	1698.0
1		0030	7	642.	91.7	1714.6	*	1		0620	77	613.	73.7	1713.3	*	1		1210	147	76.	0.0	1697.3
1		0035	8	640.	89.7	1714.5	*	1		0625	78	609.	71.4	1713.1	*	1		1215	148	80.	0.0	1697.5
1		0040	9	637.	87.6	1714.4	*	1		0630	79	604.	69.2	1712.9	*	1		1220	149	66.	0.0	1697.0
1		0045	10	634.	85.4	1714.3	*	1		0635	80	599.	66.9	1712.7	*	1		1225	150	70.	0.0	1697.1
1		0050	11	631.	83.2	1714.1	*	1		0640	81	595.	64.7	1712.5	*	1		1230	151	59.	0.0	1696.7
1		0055	12	628.	80.9	1714.0	*	1		0645	82	590.	62.4	1712.3	*	1		1235	152	62.	0.0	1696.9
1		0100	13	623.	78.6	1713.8	*	1		0650	83	586.	60.2	1712.1	*	1		1240	153	54.	0.0	1696.6
1		0105	14	619.	76.3	1713.6	*	1		0655	84	581.	58.0	1711.9	*	1		1245	154	57.	0.0	1696.7
1		0110	15	614.	74.0	1713.4	*	1		0700	85	577.	55.9	1711.7	*	1		1250	155	51.	0.0	1696.5
1		0115	16	609.	71.8	1713.2	*	1		0705	86	572.	53.7	1711.5	*	1		1255	156	54.	0.0	1696.6
1		0120	17	605.	69.7	1713.0	*	1		0710	87	568.	51.6	1711.3	*	1		1300	157	49.	0.0	1696.4
1		0125	18	601.	67.6	1712.8	*	1		0715	88	564.	49.4	1711.1	*	1		1305	158	51.	0.0	1696.5
1		0130	19	597.	65.5	1712.6	*	1		0720	89	559.	47.3	1710.9	*	1		1310	159	47.	0.0	1696.3
1		0135	20	592.	63.5	1712.4	*	1		0725	90	555.	45.2	1710.7	*	1		1315	160	49.	0.0	1696.4
1		0140	21	588.	61.6	1712.2	*	1		0730	91	551.	43.1	1710.5	*	1		1320	161	46.	0.0	1696.3
1		0145	22	585.	59.7	1712.0	*	1		0735	92	547.	41.1	1710.3	*	1		1325	162	46.	0.0	1696.3
1		0150	23	581.	57.9	1711.8	*	1		0740	93	542.	39.0	1710.1	*	1		1330	163	43.	0.0	1696.2
1		0155	24	577.	56.1	1711.7	*	1		0745	94	538.	37.0	1709.9	*	1		1335	164	44.	0.0	1696.2
1		0200	25	574.	54.4	1711.5	*	1		0750	95	534.	35.0	1709.7	*	1		1340	165	41.	0.0	1696.1
1		0205	26	574.	54.2	1711.5	*	1		0755	96	530.	32.9	1709.5	*	1		1345	166	42.	0.0	1696.2
1		0210	27	587.	60.9	1712.1	*	1		0800	97	526.	31.0	1709.3	*	1		1350	167	40.	0.0	1696.1
1		0215	28	631.	83.3	1714.1	*	1		0805	98	522.	29.0	1709.1	*	1		1355	168	40.	0.0	1696.1
1		0220	29	1716.	127.5	1716.6	*	1		0810	99	518.	27.0	1709.0	*	1		1400	169	38.	0.0	1696.0
1		0225	30	6481.	180.9	1719.1	*	1		0815	100	514.	25.1	1708.8	*	1		1405	170	38.	0.0	1696.0
1		0230	31	11205.	220.5	1720.8	*	1		0820	101	510.	23.1	1708.6	*	1		1410	171	37.	0.0	1696.0
1		0235	32	13551.	237.9	1721.5	*	1		0825	102	506.	21.2	1708.4	*	1		1415	172	36.	0.0	1696.0
1		0240	33	13734.	239.2	1721.5	*	1		0830	103	502.	19.3	1708.2	*	1		1420	173	35.	0.0	1695.9
1		0245	34	12783.	232.3	1721.2	*	1		0835	104	498.	17.4	1708.1	*	1		1425	174	35.	0.0	1695.9
1		0250	35	11328.	221.5	1720.8	*	1		0840	105	481.	15.6	1707.5	*	1		1430	175	34.	0.0	1695.9
1		0255	36	9861.	209.4	1720.3	*	1		0845	106	459.	13.9	1706.9	*	1		1435	176	33.	0.0	1695.9
1		0300	37	8526.	197.7	1719.9	*	1		0850	107	438.	12.3	1706.3	*	1		1440	177	32.	0.0	1695.8
1		0305	38	7267.	187.3	1719.4	*	1		0855	108	419.	10.8	1705.8	*	1		1445	178	32.	0.0	1695.8
1		0310	39	6216.	178.6	1719.0	*	1		0900	109	402.	9.5	1705.3	*	1		1450	179	31.	0.0	1695.8
1		0315	40	5433.	170.9	1718.6	*	1		0905	110	385.	8.2	1704.8	*	1		1455	180	31.	0.0	1695.8
1		0320	41	4722.	163.9	1718.3	*	1		0910	111	370.	7.0	1704.4	*	1		1500	181	30.	0.0	1695.7
1		0325	42	4103.	157.8	1718.1	*	1		0915	112	356.	5.9	1704.0	*	1		1505	182	29.	0.0	1695.7
1		0330	43	3609.	152.4	1717.8	*	1		0920	113	342.	4.9	1703.6	*	1		1510	183	29.	0.0	1695.7
1		0335	44	3189.	147.6	1717.6	*	1		0925	114	329.	3.9	1703.2	*	1		1515	184	28.	0.0	1695.7
1		0340	45	2825.	143.4	1717.4	*	1		0930	115	316.	2.9	1702.9	*	1		1520	185	28.	0.0	1695.7

1	0345	46	2524.	139.9	1717.2	*	1	0935	116	304.	1.9	1702.5	*	1	1525	186	27.	0.0	1695.6
1	0350	47	2283.	137.2	1717.1	*	1	0940	117	292.	1.0	1702.2	*	1	1530	187	25.	0.0	1695.6
1	0355	48	2118.	134.8	1716.9	*	1	0945	118	248.	0.2	1701.0	*	1	1535	188	24.	0.0	1695.5
1	0400	49	2000.	132.7	1716.8	*	1	0950	119	122.	0.0	1698.5	*	1	1540	189	21.	0.0	1695.4
1	0405	50	1888.	130.6	1716.7	*	1	0955	120	174.	0.0	1699.3	*	1	1545	190	20.	0.0	1695.4
1	0410	51	1780.	128.6	1716.6	*	1	1000	121	118.	0.0	1698.4	*	1	1550	191	19.	0.0	1695.4
1	0415	52	1669.	126.6	1716.5	*	1	1005	122	166.	0.0	1699.2	*	1	1555	192	17.	0.0	1695.3
1	0420	53	1554.	124.5	1716.4	*	1	1010	123	116.	0.0	1698.4	*	1	1600	193	16.	0.0	1695.3
1	0425	54	1437.	122.4	1716.3	*	1	1015	124	159.	0.0	1699.1	*	1	1605	194	15.	0.0	1695.2
1	0430	55	1318.	120.2	1716.2	*	1	1020	125	115.	0.0	1698.3	*	1	1610	195	13.	0.0	1695.2
1	0435	56	1201.	118.0	1716.1	*	1	1025	126	153.	0.0	1699.0	*	1	1615	196	12.	0.0	1695.1
1	0440	57	1092.	116.0	1716.0	*	1	1030	127	114.	0.0	1698.3	*	1	1620	197	11.	0.0	1695.1
1	0445	58	1041.	113.9	1715.9	*	1	1035	128	148.	0.0	1698.9	*	1	1625	198	10.	0.0	1695.1
1	0450	59	987.	111.7	1715.8	*	1	1040	129	112.	0.0	1698.3	*	1	1630	199	9.	0.0	1695.0
1	0455	60	933.	109.5	1715.6	*	1	1045	130	143.	0.0	1698.8	*	1	1635	200	8.	0.0	1695.0
1	0500	61	880.	107.3	1715.5	*	1	1050	131	111.	0.0	1698.3	*	1	1640	201	8.	0.0	1695.0
1	0505	62	830.	105.3	1715.4	*	1	1055	132	138.	0.0	1698.7	*	1	1645	202	8.	0.0	1695.0
1	0510	63	780.	103.3	1715.3	*	1	1100	133	109.	0.0	1698.2	*	1	1650	203	8.	0.0	1695.0
1	0515	64	732.	101.3	1715.2	*	1	1105	134	133.	0.0	1698.6	*	1	1655	204	8.	0.0	1695.0
1	0520	65	686.	99.4	1715.1	*	1	1110	135	107.	0.0	1698.2	*	1	1700	205	8.	0.0	1695.0
1	0525	66	650.	97.6	1715.0	*	1	1115	136	128.	0.0	1698.6	*	1	1705	206	8.	0.0	1695.0
1	0530	67	648.	95.7	1714.9	*	1	1120	137	104.	0.0	1698.2	*	1	1710	207	8.	0.0	1695.0
1	0535	68	645.	93.7	1714.7	*	1	1125	138	123.	0.0	1698.5	*	1	1715	208	8.	0.0	1695.0
1	0540	69	642.	91.6	1714.6	*	1	1130	139	101.	0.0	1698.1	*	1	1720	209	8.	0.0	1695.0
1	0545	70	639.	89.5	1714.5	*	1	1135	140	118.	0.0	1698.4	*	1	1725	210	8.	0.0	1695.0
						+							+						

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	17.42-HR
+ (CFS)	(HR)					
		(CFS)				
+ 13734.	2.67		2445.	978.	978.	978.
		(INCHES)	3.188	3.701	3.701	3.701
		(AC-FT)	1212.	1407.	1407.	1407.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	17.42-HR
+ (AC-FT)	(HR)				
239.	2.67	116.	48.	48.	48.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	17.42-HR
+ (FEET)	(HR)				
1721.51	2.67	1715.68	1705.87	1705.87	1705.87

CUMULATIVE AREA = 7.13 SQ MI

1

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

					RATIOS APPLIED TO FLOWS		
OPERATION	STATION	AREA	PLAN		RATIO 1	RATIO 2	RATIO 3
					1.00	0.50	0.26
HYDROGRAPH AT							
+	C599I	7.13	1	FLOW	58754.	29377.	15276.
				TIME	2.50	2.50	2.50
ROUTED TO							
+	C599O	7.13	1	FLOW	57322.	28610.	13734.
				TIME	2.58	2.58	2.67
			** PEAK STAGES IN FEET **				
			1	STAGE	1726.56	1723.86	1721.51
				TIME	2.58	2.58	2.67

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

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Version : 1.10
Serial Number : 2111

PROGRAM ORIGIN :

Boss Breach (tm) is an enhanced version of Professor D. L. Fread's July 1988 NWS BREACH program.

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PROJECT DESCRIPTION :

PROJECT TITLE : Ftn Hills ADMP
PROJECT NUMBER : #63
DESCRIPTION : IDA Breach Analysis for GEPD (0.26 PMF)
ENGINEER : CCC
DATE OF RUN : 10/17/1996
TIME OF RUN : 11:02 am

INPUT DATA :

INFLOW HYDROGRAPH DESCRIPTION :

Time Elapsed TIN(I) (hr)	Upstream Inflow QIN(I) (cfs)
.00	9773.0
.08	13928.0
.17	15276.0
.25	14518.0
.33	13151.0
.42	11380.0
.50	9578.0
2.00	1245.0

RESERVOIR VOLUME DESCRIPTION :

Elevation HSA(I) (ft MSL)	Surface Area RSA(I) (acres)
1726.00	35.0
1724.00	31.1
1722.00	27.3
1720.00	24.0
1716.00	19.4
1712.00	12.2
1702.00	.4
1694.70	.0

TAILWATER CROSS-SECTION DESCRIPTION :

Elevation HSTW(I) (ft MSL)	Tailwater Top Width BSTW(I) (ft)	Tailwater Manning n CMTW(I)
1690.30	.0	.0500
1693.00	85.3	.0500
1696.00	128.0	.0500
1699.00	154.4	.0500
1700.50	226.7	.0500
1702.00	657.5	.0500
1708.00	808.2	.0500
1711.00	835.5	.0500

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RESERVOIR AND OVERTOPPING BREACH DESCRIPTION :

Initial Reservoir Water Surface Elevation (ft MSL, HI)	1720.30
Dam Bottom Elevation (ft MSL, HL)	1694.70
Dam Top Elevation (ft MSL, HU)	1721.50
Spillway Crest Elevation (ft MSL, HSP)	1714.90
Dam Crest Length (ft, CRL)	660.00
Dam Crest Width (ft, WC)	12.00
Ratio of Breach Width to Flow Depth (BR)	2.000
Initial Breach Depth on Downstream Face (ft, H)	1.0000

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DAM INNER CORE DESCRIPTION :

D50 Grain Size (mm, D50C)		.700
Ratio of D90 to D30 Grain Sizes (UNFCC)		118.000
Porosity Ratio (PORC)		.250
Unit Weight (lb/cu ft, UWC)		125.00
Manning n of Core Material (CNC)		1.0000
Internal Friction Angle (degrees, AFRC)		38.00
Cohesive Strength (lb/sq ft, COHC)		200.00
Average Upstream & Downstream Inner Core Slope (ZC)	1 :	.50

DAM OUTER CORE DESCRIPTION :

D50 Grain Size (mm, D50S)	7.100
Ratio of D90 to D30 Grain Sizes (UNFCS)	22.100
Porosity Ratio (PORS)	.300
Unit Weight (lb/cu ft, UWS)	120.00
Manning n of Core Material (CNS)	1.0000
Internal Friction Angle (degrees, AFRS)	40.00
Cohesive Strength (lb/sq ft, COHS)	.00
Average Clay Plasticity Index (PI)	7.00
CA Clay Critical Shear Stress Coefficient (CA)	.000
CB Clay Critical Shear Stress Coefficient (CB)	.000

DAM FACE DESCRIPTION :

Upstream Face Slope (ZU)	1 (vertical) :	2.00
Downstream Face Slope (ZD)	1 (vertical) :	2.00
Downstream Face D50 Grain Size (mm, D50DF)		16.100
Downstream Face D90 to D30 Grain Size Ratio (UNFCDF)		10.900
Average Grass Length (inches, GL)		4.00
Grass Condition Factor (1=good, 0=none, GS)		.25
Maximum Grass-Lined Channel Velocity (ft/sec, VMP)		.00

BOUNDARY CONDITIONS :

Simulation Duration (hr, TEH)	2.00
Basic Time-Step Size (hr, DTH)	.010
Iteration Error Tolerance (%, ERR)	.01
Downstream River Bottom Slope (ft/mi, SM)	110.000
Maximum Allowable Breach Bottom Width (ft, BMX)	400.000
Discharge Plot Time-Step Interval (FPT)	10.00
Time-step at which Plotting Starts (TPR)	.00

INPUT DATA :

SPILLWAY RATING CURVE :

Head SPH(I) (ft)	Spillway Flow SPQ(I) (cfs)
.00	.0
1.10	431.0
2.10	1499.0

3.60	4336.0
5.10	8182.0
7.10	14434.0
9.10	21870.0
11.10	30367.0

INTERNAL COMPUTATION CHECKS :

Avg. inner & outer matl. internal friction angle (rad, AFRA)	39.00
Equation 21 Theta1' (radians, TH1)	65.00
Equation 13 Critical Depth H1' (ft, H1)	.07
Equation 21 Theta2' (radians, TH2)	52.00
Equation 13 Critical Depth H2' (ft, H2)	22.84
Equation 21 Theta3' (radians, TH3)	45.00
Equation 13 Critical Depth H3' (ft, H3)	133.79

FAILURE CODES (KG) :

0 = No erosion of grassed face
1 = Erosion of dam downstream face
2 = Erosion of dam upstream face
3 = Draining of reservoir with breach size continuing to increase
4 = Piping mode
5 = Collapse mode

PPP DESCRIPTION BASED ON ABOVE FAILURE CODES (KG) :

1 = Depth of erosion perpendicular to downstream face
2 = Length of breach along downstream face
3 = Increase in breach width
4 = Elevation of top of piping breach

HP DESCRIPTION BASED ON ABOVE FAILURE CODES (KG) :

1 = Erosion width across top of dam
2 = Erosion depth at upstream face
3 = Breach flow depth
4 = Piping head

Step I	Time Step (hr) DTH	Elpse Time (hr) T	Fail Code KG	Spillway Outflow (cfs) QTS	Breach Outflow (cfs) QB	Total Outflow (cfs) QTOT	Sbmrg Crctn Factr SUB	Brech Top Width (ft) BT	Rsrvor W. S. Elev. (ft - MSL) HY	Breach Bottom Elev. (ft - MSL) HC	Brech Bottm Width (ft) BO	D.S.F. Eroson Depth (ft) PPP	Dam Eroson Width (ft) HP	Brech Manig (n) CNN	Estmte Erosin Depth Incrse (ft) DH	Comput Erosin Depth Incrse (ft) DHH	Itrtn Count KIT	Brech Vrtcl Side Angle (deg) ALG
1	.010	.010	1	9119.9	.0	9119.9	1.000	.0	1720.3	1721.5	.0	.0	.0	.0305	.100	.000	0	.00
2	.010	.020	1	9263.0	.0	9263.0	1.000	.0	1720.4	1721.5	.0	.0	.0	.0305	.100	.000	0	.00
3	.010	.030	1	9448.0	.0	9448.0	1.000	.0	1720.4	1721.5	.0	.0	.0	.0305	.100	.000	0	.00

4	.010	.040	1	9635.4	.0	9635.4	1.000	.0	1720.5	1721.5	.0	.0	.0	.0305	.100	.000	0	.00
5	.010	.050	1	9857.1	.0	9857.1	1.000	.0	1720.5	1721.5	.0	.0	.0	.0305	.100	.000	0	.00
6	.010	.060	1	10107.8	.0	10107.8	1.000	.0	1720.6	1721.5	.0	.0	.0	.0305	.100	.000	0	.00
7	.010	.070	1	10382.2	.0	10382.2	1.000	.0	1720.7	1721.5	.0	.0	.0	.0305	.100	.000	0	.00
8	.010	.080	1	10677.9	.0	10677.9	1.000	.0	1720.8	1721.5	.0	.0	.0	.0305	.100	.000	0	.00
9	.010	.090	1	10992.7	.0	10992.7	1.000	.0	1720.9	1721.5	.0	.0	.0	.0305	.100	.000	0	.00
10	.010	.100	1	11300.3	.0	11300.3	1.000	.0	1721.0	1721.5	.0	.0	.0	.0305	.100	.000	0	.00
11	.010	.110	1	11585.3	.0	11585.3	1.000	.0	1721.1	1721.5	.0	.0	.0	.0305	.100	.000	0	.00
12	.010	.120	1	11860.5	.0	11860.5	1.000	.0	1721.2	1721.5	.0	.0	.0	.0305	.100	.000	0	.00
13	.010	.130	1	12125.7	.0	12125.7	1.000	.0	1721.3	1721.5	.0	.0	.0	.0305	.100	.000	0	.00
14	.010	.140	1	12378.7	.0	12378.7	1.000	.0	1721.3	1721.5	.0	.0	.0	.0305	.100	.000	0	.00
15	.010	.150	1	12621.4	.0	12621.4	1.000	.0	1721.4	1721.5	.0	.0	.0	.0305	.100	.000	0	.00
16	.010	.160	1	12855.3	.0	12855.3	1.000	.0	1721.5	1721.5	.0	.0	.0	.0305	.100	.000	0	.00
17	.010	.170	1	13115.5	.0	13115.5	1.000	.0	1721.6	1721.5	.0	.0	.0	.0305	.100	.000	0	.00
18	.010	.180	1	13385.3	.3	13385.3	1.000	2.2	1721.6	1721.5	2.2	1.1	2.5	.0305	.100	.087	0	.00
18	.010	.180	1	13377.9	.3	13377.9	1.000	2.2	1721.6	1721.5	2.2	1.1	2.4	.0305	.087	.087	1	.00
18	.010	.180	1	13377.9	.3	13377.9	1.000	2.2	1721.6	1721.5	2.2	1.1	2.4	.0305	.087	.087	2	.00

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BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC)	0
Collapse Wedge Vertical Dimension (ft, YC)	3.00
Force of Water on Collapse Wedge (psf, FW)	1247.
Total Force on Collapse Wedge (psf, FST)	7793.
Resistance Shear Force along Wedge Bottom (psf, FSB)	5333.
Resistance Shear Force along both Wedge Sides (psf, FSS)	2319.
Resistance Cohesive Force along Wedge Bottom (psf, FCB)	47.
Resistance Cohesive Force along both Wedge Sides (psf, FCS)	94.

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Slump Counter (KSLUMP)	1
Depth of Vertical Cut when Slump Occurs (ft, HCK)	1.31
Delay in Erosion as Slump Material is Transported (hr, DELT)	.02
Total Change in Side Angle due to Slump Failure (degree, DEL)	25.00

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Step I	Time Step (hr) DTH	Elpse Time (hr) T	Fail Code KG	Spillway Outflow (cfs) QTS	Breach Outflow (cfs) QB	Total Outflow (cfs) QTOT	Sbmrg Crctn Factr SUB	Brech Top Width (ft) BT	Rsrvor W. S. Elev. (ft - MSL) HY	Breach Bottom Elev. (ft - MSL) HC	Brech Bottm Width (ft) BO	D.S.F. Eroson Depth (ft) PPP	Dam Eroson Width (ft) HP	Brech Manig (n) CNN	Estmte Erosin Depth Incrse (ft) DH	Comput Erosin Depth Incrse (ft) DHH	Itrtn Count KIT	Brech Vrtcl Side Angle (deg) ALG
19	.040	.220	1	13899.9	.8	13899.9	1.000	3.2	1721.7	1721.5	2.2	1.1	2.4	.0487	.000	.000	0	25.00

BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC) 0

Collapse Wedge Vertical Dimension (ft, YC) 3.00

Force of Water on Collapse Wedge (psf, FW) 1567.

Total Force on Collapse Wedge (psf, FST) 11245.

Resistance Shear Force along Wedge Bottom (psf, FSB) 6549.

Resistance Shear Force along both Wedge Sides (psf, FSS) 2864.

Resistance Cohesive Force along Wedge Bottom (psf, FCB) 611.

Resistance Cohesive Force along both Wedge Sides (psf, FCS) 1222.

20	.040	.260	1	14726.2	1.4	14726.2	1.000	3.2	1721.8	1721.5	2.2	1.1	2.4	.0374	.000	1.501	0	25.00
20	.040	.260	1	14367.8	3.3	14367.8	1.000	7.6	1721.9	1721.5	5.2	2.6	5.8	.0374	1.501	1.490	1	25.00
20	.040	.260	1	14399.8	3.3	14399.8	1.000	7.6	1721.9	1721.5	5.2	2.6	5.8	.0374	1.490	1.518	2	25.00
20	.040	.260	1	14397.2	3.3	14397.2	1.000	7.6	1721.9	1721.5	5.2	2.6	5.8	.0374	1.518	1.512	3	25.00
20	.040	.260	1	14397.0	3.3	14397.0	1.000	7.6	1721.9	1721.5	5.2	2.6	5.8	.0374	1.512	1.512	4	25.00
20	.040	.260	1	14397.4	3.3	14397.4	1.000	7.6	1721.9	1721.5	5.2	2.6	5.8	.0374	1.512	1.512	5	25.00

BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC) 0

Collapse Wedge Vertical Dimension (ft, YC) 3.00

Force of Water on Collapse Wedge (psf, FW) 3810.

Total Force on Collapse Wedge (psf, FST) 21313.

Resistance Shear Force along Wedge Bottom (psf, FSB) 12257.

Resistance Shear Force along both Wedge Sides (psf, FSS) 5360.

Resistance Cohesive Force along Wedge Bottom (psf, FCB) 1232.

Resistance Cohesive Force along both Wedge Sides (psf, FCS) 2464.

21	.040	.300	1	14389.7	5.3	14389.7	1.000	12.1	1721.9	1721.5	8.2	4.1	9.2	.0340	1.512	1.590	0	25.00
21	.040	.300	1	14412.6	5.4	14412.6	1.000	12.3	1721.9	1721.5	8.4	4.2	9.4	.0340	1.590	1.600	1	25.00
21	.040	.300	1	14410.5	5.4	14410.5	1.000	12.3	1721.9	1721.5	8.4	4.2	9.4	.0340	1.600	1.594	2	25.00
21	.040	.300	1	14410.7	5.4	14410.7	1.000	12.3	1721.9	1721.5	8.4	4.2	9.4	.0340	1.594	1.595	3	25.00
21	.040	.300	1	14410.5	5.4	14410.5	1.000	12.3	1721.9	1721.5	8.4	4.2	9.4	.0340	1.595	1.594	4	25.00
21	.040	.300	1	14410.7	5.4	14410.7	1.000	12.3	1721.9	1721.5	8.4	4.2	9.4	.0340	1.594	1.595	5	25.00

BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC) 0

Collapse Wedge Vertical Dimension (ft, YC) 3.00

Force of Water on Collapse Wedge (psf, FW) 6150.

Total Force on Collapse Wedge (psf, FST) 30990.

Resistance Shear Force along Wedge Bottom (psf, FSB) 13911.

Resistance Shear Force along both Wedge Sides (psf, FSS) 6130.

Resistance Cohesive Force along Wedge Bottom (psf, FCB) 3650.

Resistance Cohesive Force along both Wedge Sides (psf, FCS) 7300.

22	.002	.302	1	14212.5	6.6	14212.5	1.000	17.0	1721.8	1721.5	11.6	5.8	12.9	.0325	1.594	.083	0	25.00
22	.002	.302	1	14286.4	4.9	14286.4	1.000	12.5	1721.8	1721.5	8.6	4.3	9.6	.0325	.083	.074	1	25.00
22	.002	.302	1	14286.0	4.9	14286.0	1.000	12.5	1721.8	1721.5	8.5	4.3	9.5	.0325	.074	.074	2	25.00
22	.002	.302	1	14286.0	4.9	14286.0	1.000	12.5	1721.8	1721.5	8.5	4.3	9.5	.0325	.074	.074	3	25.00

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BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC) 0

Collapse Wedge Vertical Dimension (ft, YC) 3.00

Force of Water on Collapse Wedge (psf, FW) 6234.

Total Force on Collapse Wedge (psf, FST) 37476.

Resistance Shear Force along Wedge Bottom (psf, FSB) 13797.

Resistance Shear Force along both Wedge Sides (psf, FSS) 6129.

Resistance Cohesive Force along Wedge Bottom (psf, FCB) 5850.

Resistance Cohesive Force along both Wedge Sides (psf, FCS) 11700.

23	.002	.304	1	14332.3	4.9	14332.3	1.000	12.7	1721.8	1721.5	8.7	4.3	9.7	.0333	.074	.074	0	25.00
23	.002	.304	1	14266.5	4.9	14266.5	1.000	12.7	1721.8	1721.5	8.7	4.3	9.7	.0333	.074	.073	1	25.00
23	.002	.304	1	14266.9	4.9	14266.9	1.000	12.7	1721.8	1721.5	8.7	4.3	9.7	.0333	.073	.073	2	25.00
23	.002	.304	1	14266.9	4.9	14266.9	1.000	12.7	1721.8	1721.5	8.7	4.3	9.7	.0333	.073	.073	3	25.00

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BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC) 0

Collapse Wedge Vertical Dimension (ft, YC) 3.00

Force of Water on Collapse Wedge (psf, FW) 6336.

Total Force on Collapse Wedge (psf, FST) 37825.

Resistance Shear Force along Wedge Bottom (psf, FSB) 13759.

Resistance Shear Force along both Wedge Sides (psf, FSS) 6114.

Resistance Cohesive Force along Wedge Bottom (psf, FCB) 5984.

Resistance Cohesive Force along both Wedge Sides (psf, FCS) 11968.

24	.002	.306	1	14248.3	4.9	14248.3	1.000	12.9	1721.8	1721.5	8.8	4.4	9.9	.0332	.073	.073	0	25.00
24	.002	.306	1	14247.9	4.9	14247.9	1.000	12.9	1721.8	1721.5	8.8	4.4	9.9	.0332	.073	.072	1	25.00
24	.002	.306	1	14247.9	4.9	14247.9	1.000	12.9	1721.8	1721.5	8.8	4.4	9.9	.0332	.072	.072	2	25.00

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BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC) 0

Collapse Wedge Vertical Dimension (ft, YC) 3.00

Force of Water on Collapse Wedge (psf, FW) 6437.

Total Force on Collapse Wedge (psf, FST) 38153.

Resistance Shear Force along Wedge Bottom (psf, FSB) 13712.

Resistance Shear Force along both Wedge Sides (psf, FSS) 6095.

Resistance Cohesive Force along Wedge Bottom (psf, FCB) 6115.

Resistance Cohesive Force along both Wedge Sides (psf, FCS) 12230.

25	.002	.308	1	14228.3	4.9	14228.3	1.000	13.1	1721.8	1721.5	9.0	4.5	10.0	.0332	.072	.072	0	25.00
25	.002	.308	1	14228.3	4.9	14228.3	1.000	13.1	1721.8	1721.5	9.0	4.5	10.0	.0332	.072	.070	1	25.00
25	.002	.308	1	14228.3	4.9	14228.3	1.000	13.1	1721.8	1721.5	9.0	4.5	10.0	.0332	.070	.070	2	25.00

BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC) 0

Collapse Wedge Vertical Dimension (ft, YC) 3.00

Force of Water on Collapse Wedge (psf, FW) 6535.

Total Force on Collapse Wedge (psf, FST) 38459.

Resistance Shear Force along Wedge Bottom (psf, FSB) 13657.

Resistance Shear Force along both Wedge Sides (psf, FSS) 6073.

Resistance Cohesive Force along Wedge Bottom (psf, FCB) 6243.

Resistance Cohesive Force along both Wedge Sides (psf, FCS) 12485.

26	.002	.310	1	14208.2	4.8	14208.2	1.000	13.3	1721.8	1721.5	9.1	4.6	10.2	.0332	.070	.070	0	25.00
26	.002	.310	1	14208.6	4.8	14208.6	1.000	13.3	1721.8	1721.5	9.1	4.6	10.2	.0332	.070	.069	1	25.00
26	.002	.310	1	14208.4	4.8	14208.4	1.000	13.3	1721.8	1721.5	9.1	4.6	10.2	.0332	.069	.069	2	25.00
26	.002	.310	1	14208.2	4.8	14208.2	1.000	13.3	1721.8	1721.5	9.1	4.6	10.2	.0332	.069	.069	3	25.00

BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC) 0

Collapse Wedge Vertical Dimension (ft, YC) 3.00

Force of Water on Collapse Wedge (psf, FW) 6631.

Total Force on Collapse Wedge (psf, FST) 38744.

Resistance Shear Force along Wedge Bottom (psf, FSB) 13596.

Resistance Shear Force along both Wedge Sides (psf, FSS) 6048.

Resistance Cohesive Force along Wedge Bottom (psf, FCB) 6367.

Resistance Cohesive Force along both Wedge Sides (psf, FCS) 12733.

27	.002	.312	1	14188.1	4.8	14188.1	1.000	13.5	1721.8	1721.5	9.2	4.6	10.3	.0332	.069	.069	0	25.00
27	.002	.312	1	14188.1	4.8	14188.1	1.000	13.5	1721.8	1721.5	9.2	4.6	10.3	.0332	.069	.068	1	25.00
27	.002	.312	1	14188.1	4.8	14188.1	1.000	13.5	1721.8	1721.5	9.2	4.6	10.3	.0332	.068	.068	2	25.00

BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC) 0

Collapse Wedge Vertical Dimension (ft, YC) 3.00

Force of Water on Collapse Wedge (psf, FW) 6725.

Total Force on Collapse Wedge (psf, FST) 39009.

Resistance Shear Force along Wedge Bottom (psf, FSB) 13528.

Resistance Shear Force along both Wedge Sides (psf, FSS) 6020.

Resistance Cohesive Force along Wedge Bottom (psf, FCB) 6487.

Resistance Cohesive Force along both Wedge Sides (psf, FCS) 12974.

28	.002	.314	1	14168.1	4.8	14168.1	1.000	13.7	1721.8	1721.5	9.4	4.7	10.5	.0333	.068	.068	0	25.00
28	.002	.314	1	14168.1	4.8	14168.1	1.000	13.7	1721.8	1721.5	9.4	4.7	10.5	.0333	.068	.066	1	25.00
28	.002	.314	1	14168.1	4.8	14168.1	1.000	13.7	1721.8	1721.5	9.4	4.7	10.5	.0333	.066	.066	2	25.00

BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC) 0

Collapse Wedge Vertical Dimension (ft, YC) 3.00

Force of Water on Collapse Wedge (psf, FW) 6818.

Total Force on Collapse Wedge (psf, FST) 39253.

Resistance Shear Force along Wedge Bottom (psf, FSB) 13453.

Resistance Shear Force along both Wedge Sides (psf, FSS) 5989.

Resistance Cohesive Force along Wedge Bottom (psf, FCB) 6604.

Resistance Cohesive Force along both Wedge Sides (psf, FCS) 13208.

29	.002	.316	1	14146.9	4.7	14146.9	1.000	13.9	1721.8	1721.5	9.5	4.8	10.6	.0333	.066	.066	0	25.00
29	.002	.316	1	14146.9	4.7	14146.9	1.000	13.9	1721.8	1721.5	9.5	4.8	10.6	.0333	.066	.065	1	25.00
29	.002	.316	1	14146.9	4.7	14146.9	1.000	13.9	1721.8	1721.5	9.5	4.7	10.6	.0333	.065	.065	2	25.00

BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC) 0

Collapse Wedge Vertical Dimension (ft, YC) 3.00

Force of Water on Collapse Wedge (psf, FW) 6907.

Total Force on Collapse Wedge (psf, FST) 39478.

Resistance Shear Force along Wedge Bottom (psf, FSB) 13373.

Resistance Shear Force along both Wedge Sides (psf, FSS) 5955.

Resistance Cohesive Force along Wedge Bottom (psf, FCB) 6717.

Resistance Cohesive Force along both Wedge Sides (psf, FCS) 13434.

30	.002	.318	1	14125.8	4.7	14125.8	1.000	14.1	1721.8	1721.5	9.6	4.8	10.8	.0333	.065	.065	0	25.00
30	.002	.318	1	14125.8	4.7	14125.8	1.000	14.1	1721.8	1721.5	9.6	4.8	10.8	.0333	.065	.064	1	25.00
30	.002	.318	1	14125.8	4.7	14125.8	1.000	14.1	1721.8	1721.5	9.6	4.8	10.8	.0333	.064	.064	2	25.00

BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC)	0
Collapse Wedge Vertical Dimension (ft, YC)	3.00
Force of Water on Collapse Wedge (psf, FW)	6995.
Total Force on Collapse Wedge (psf, FST)	39684.
Resistance Shear Force along Wedge Bottom (psf, FSB)	13287.
Resistance Shear Force along both Wedge Sides (psf, FSS)	5919.
Resistance Cohesive Force along Wedge Bottom (psf, FCB)	6826.
Resistance Cohesive Force along both Wedge Sides (psf, FCS)	13652.

31	.002	.320	1	14104.8	4.7	14104.8	1.000	14.3	1721.8	1721.5	9.8	4.9	10.9	.0333	.064	.064	0	25.00
31	.002	.320	1	14104.8	4.7	14104.8	1.000	14.3	1721.8	1721.5	9.8	4.9	10.9	.0333	.064	.062	1	25.00
31	.002	.320	1	14104.8	4.7	14104.8	1.000	14.3	1721.8	1721.5	9.8	4.9	10.9	.0333	.062	.062	2	25.00

BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC)	0
Collapse Wedge Vertical Dimension (ft, YC)	3.00
Force of Water on Collapse Wedge (psf, FW)	7081.
Total Force on Collapse Wedge (psf, FST)	39872.
Resistance Shear Force along Wedge Bottom (psf, FSB)	13197.
Resistance Shear Force along both Wedge Sides (psf, FSS)	5880.
Resistance Cohesive Force along Wedge Bottom (psf, FCB)	6932.
Resistance Cohesive Force along both Wedge Sides (psf, FCS)	13863.

32	.002	.322	1	14083.2	4.6	14083.2	1.000	14.5	1721.8	1721.5	9.9	4.9	11.0	.0334	.062	.062	0	25.00
32	.002	.322	1	14083.2	4.6	14083.2	1.000	14.5	1721.8	1721.5	9.9	4.9	11.0	.0334	.062	.061	1	25.00
32	.002	.322	1	14083.2	4.6	14083.2	1.000	14.5	1721.8	1721.5	9.9	4.9	11.0	.0334	.061	.061	2	25.00

BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC)	0
Collapse Wedge Vertical Dimension (ft, YC)	3.00
Force of Water on Collapse Wedge (psf, FW)	7164.
Total Force on Collapse Wedge (psf, FST)	40043.

Resistance Shear Force along Wedge Bottom (psf, FSB) 13102.

Resistance Shear Force along both Wedge Sides (psf, FSS) 5840.

Resistance Cohesive Force along Wedge Bottom (psf, FCB) 7034.

Resistance Cohesive Force along both Wedge Sides (psf, FCS) 14067.

```
33 .002  .324    1   14061.1       4.5   14061.1 1.000  14.7 1721.8 1721.5  10.0    5.0   11.2 .0334   .061   .061     0 25.00
33 .002  .324    1   14061.1       4.5   14061.1 1.000  14.7 1721.8 1721.5  10.0    5.0   11.2 .0334   .061   .059     1 25.00
33 .002  .324    1   14061.1       4.5   14061.1 1.000  14.6 1721.8 1721.5  10.0    5.0   11.2 .0334   .059   .059     2 25.00
```


BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC) 0

Collapse Wedge Vertical Dimension (ft, YC) 3.00

Force of Water on Collapse Wedge (psf, FW) 7245.

Total Force on Collapse Wedge (psf, FST) 40197.

Resistance Shear Force along Wedge Bottom (psf, FSB) 13004.

Resistance Shear Force along both Wedge Sides (psf, FSS) 5798.

Resistance Cohesive Force along Wedge Bottom (psf, FCB) 7132.

Resistance Cohesive Force along both Wedge Sides (psf, FCS) 14263.

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34 .002  .326    1   14038.9       4.5   14038.9 1.000  14.8 1721.8 1721.5  10.1    5.1   11.3 .0335   .059   .060     0 25.00
34 .002  .326    1   14039.1       4.5   14039.1 1.000  14.8 1721.8 1721.5  10.1    5.1   11.3 .0335   .060   .058     1 25.00
34 .002  .326    1   14039.1       4.5   14039.1 1.000  14.8 1721.8 1721.5  10.1    5.1   11.3 .0335   .058   .058     2 25.00
```


BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC) 0

Collapse Wedge Vertical Dimension (ft, YC) 3.00

Force of Water on Collapse Wedge (psf, FW) 7324.

Total Force on Collapse Wedge (psf, FST) 40334.

Resistance Shear Force along Wedge Bottom (psf, FSB) 12902.

Resistance Shear Force along both Wedge Sides (psf, FSS) 5754.

Resistance Cohesive Force along Wedge Bottom (psf, FCB) 7226.

Resistance Cohesive Force along both Wedge Sides (psf, FCS) 14452.

```
35 .002  .328    1   14016.5       4.4   14016.5 1.000  15.0 1721.8 1721.5  10.2    5.1   11.4 .0335   .058   .058     0 25.00
35 .002  .328    1   14016.5       4.4   14016.5 1.000  15.0 1721.8 1721.5  10.2    5.1   11.4 .0335   .058   .057     1 25.00
35 .002  .328    1   14016.5       4.4   14016.5 1.000  15.0 1721.8 1721.5  10.2    5.1   11.4 .0335   .057   .057     2 25.00
```

BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC)	0
Collapse Wedge Vertical Dimension (ft, YC)	3.00
Force of Water on Collapse Wedge (psf, FW)	7400.
Total Force on Collapse Wedge (psf, FST)	40456.
Resistance Shear Force along Wedge Bottom (psf, FSB)	12797.
Resistance Shear Force along both Wedge Sides (psf, FSS)	5709.
Resistance Cohesive Force along Wedge Bottom (psf, FCB)	7317.
Resistance Cohesive Force along both Wedge Sides (psf, FCS)	14634.

36	.002	.330	1	13993.4	4.3	13993.4	1.000	15.2	1721.8	1721.5	10.3	5.2	11.6	.0336	.057	.057	0 25.00
36	.002	.330	1	13993.4	4.3	13993.4	1.000	15.2	1721.8	1721.5	10.3	5.2	11.6	.0336	.057	.055	1 25.00
36	.002	.330	1	13993.4	4.3	13993.4	1.000	15.1	1721.8	1721.5	10.3	5.2	11.6	.0336	.055	.055	2 25.00

BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC)	0
Collapse Wedge Vertical Dimension (ft, YC)	3.00
Force of Water on Collapse Wedge (psf, FW)	7474.
Total Force on Collapse Wedge (psf, FST)	40564.
Resistance Shear Force along Wedge Bottom (psf, FSB)	12689.
Resistance Shear Force along both Wedge Sides (psf, FSS)	5663.
Resistance Cohesive Force along Wedge Bottom (psf, FCB)	7404.
Resistance Cohesive Force along both Wedge Sides (psf, FCS)	14808.

37	.002	.332	1	13970.5	4.3	13970.5	1.000	15.3	1721.8	1721.5	10.4	5.2	11.7	.0337	.055	.055	0 25.00
37	.002	.332	1	13970.5	4.3	13970.5	1.000	15.3	1721.8	1721.5	10.4	5.2	11.7	.0337	.055	.054	1 25.00
37	.002	.332	1	13970.5	4.3	13970.5	1.000	15.3	1721.8	1721.5	10.4	5.2	11.7	.0337	.054	.054	2 25.00

BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC)	0
Collapse Wedge Vertical Dimension (ft, YC)	3.00
Force of Water on Collapse Wedge (psf, FW)	7546.
Total Force on Collapse Wedge (psf, FST)	40657.
Resistance Shear Force along Wedge Bottom (psf, FSB)	12580.
Resistance Shear Force along both Wedge Sides (psf, FSS)	5615.
Resistance Cohesive Force along Wedge Bottom (psf, FCB)	7487.
Resistance Cohesive Force along both Wedge Sides (psf, FCS)	14975.

38	.002	.334	1	13947.5	4.2	13947.5	1.000	15.5	1721.8	1721.5	10.5	5.3	11.8	.0337	.054	.054	0	25.00
38	.002	.334	1	13947.5	4.2	13947.5	1.000	15.5	1721.8	1721.5	10.5	5.3	11.8	.0337	.054	.052	1	25.00
38	.002	.334	1	13947.5	4.2	13947.5	1.000	15.5	1721.8	1721.5	10.5	5.3	11.8	.0337	.052	.052	2	25.00

BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC) 0

Collapse Wedge Vertical Dimension (ft, YC) 3.00

Force of Water on Collapse Wedge (psf, FW) 7616.

Total Force on Collapse Wedge (psf, FST) 40737.

Resistance Shear Force along Wedge Bottom (psf, FSB) 12469.

Resistance Shear Force along both Wedge Sides (psf, FSS) 5567.

Resistance Cohesive Force along Wedge Bottom (psf, FCB) 7567.

Resistance Cohesive Force along both Wedge Sides (psf, FCS) 15134.

39	.002	.336	1	13923.9	4.1	13923.9	1.000	15.6	1721.8	1721.5	10.6	5.3	11.9	.0338	.052	.052	0	25.00
39	.002	.336	1	13924.1	4.1	13924.1	1.000	15.6	1721.8	1721.5	10.6	5.3	11.9	.0338	.052	.051	1	25.00
39	.002	.336	1	13924.1	4.1	13924.1	1.000	15.6	1721.8	1721.5	10.6	5.3	11.9	.0338	.051	.051	2	25.00

BREACH COLLAPSE INTERNAL COMPUTATION CHECKS :

Iteration Count (KKC) 0

Collapse Wedge Vertical Dimension (ft, YC) 3.00

Force of Water on Collapse Wedge (psf, FW) 7683.

Total Force on Collapse Wedge (psf, FST) 40805.

Resistance Shear Force along Wedge Bottom (psf, FSB) 12356.

Resistance Shear Force along both Wedge Sides (psf, FSS) 5518.

Resistance Cohesive Force along Wedge Bottom (psf, FCB) 7643.

Resistance Cohesive Force along both Wedge Sides (psf, FCS) 15287.

40	.002	.338	1	13899.6	4.0	13899.6	1.000	15.8	1721.7	1721.5	10.7	5.4	12.0	.0339	.051	.051	0	25.00
40	.002	.338	1	13899.6	4.0	13899.6	1.000	15.8	1721.7	1721.5	10.7	5.4	12.0	.0339	.051	.049	1	25.00
40	.002	.338	1	13899.6	4.0	13899.6	1.000	15.8	1721.7	1721.5	10.7	5.4	12.0	.0339	.049	.049	2	25.00
41	.001	.339	2	13873.3	5.0	13878.3	1.000	10.8	1721.7	1721.5	10.7	60.0	.0	.0157	.049	.084	0	25.00
41	.001	.339	2	13877.4	5.9	13883.3	1.000	10.8	1721.7	1721.4	10.7	60.1	.1	.0157	.084	.079	1	25.00
41	.001	.339	2	13877.4	5.8	13883.2	1.000	10.8	1721.7	1721.4	10.7	60.1	.1	.0157	.079	.087	2	25.00
41	.001	.339	2	13877.4	6.0	13883.4	1.000	10.8	1721.7	1721.4	10.7	60.1	.1	.0157	.087	.083	3	25.00
41	.001	.339	2	13877.4	5.8	13883.3	1.000	10.8	1721.7	1721.4	10.7	60.1	.1	.0157	.083	.092	4	25.00
41	.001	.339	2	13877.4	6.1	13883.5	1.000	10.8	1721.7	1721.4	10.7	60.1	.1	.0157	.092	.087	5	25.00
42	.001	.340	2	13869.2	8.4	13877.7	1.000	10.9	1721.7	1721.3	10.7	60.2	.2	.0163	.092	.133	0	25.00
42	.001	.340	2	13865.0	9.6	13874.6	1.000	10.9	1721.7	1721.3	10.7	60.3	.2	.0163	.133	.125	1	25.00
42	.001	.340	2	13865.0	9.4	13874.4	1.000	10.9	1721.7	1721.3	10.7	60.3	.2	.0163	.125	.160	2	25.00
42	.001	.340	2	13865.0	10.4	13875.4	1.000	11.0	1721.7	1721.3	10.7	60.4	.2	.0163	.160	.150	3	25.00
42	.001	.340	2	13865.0	10.1	13875.1	1.000	10.9	1721.7	1721.3	10.7	60.3	.2	.0163	.150	.143	4	25.00
42	.001	.340	2	13865.0	9.9	13874.9	1.000	10.9	1721.7	1721.3	10.7	60.3	.2	.0163	.143	.136	5	25.00
43	.001	.341	2	13852.6	14.4	13867.0	1.000	11.1	1721.7	1721.2	10.7	60.6	.3	.0155	.143	.226	0	25.00
43	.001	.341	2	13852.6	17.3	13869.9	1.000	11.1	1721.7	1721.1	10.7	60.7	.4	.0155	.226	.283	1	25.00
43	.001	.341	2	13852.5	19.4	13872.0	1.000	11.2	1721.7	1721.0	10.7	60.8	.5	.0155	.283	.287	2	25.00
43	.001	.341	2	13852.5	19.6	13872.1	1.000	11.2	1721.7	1721.0	10.7	60.8	.5	.0155	.287	.294	3	25.00
43	.001	.341	2	13852.5	19.8	13872.4	1.000	11.2	1721.7	1721.0	10.7	60.8	.5	.0155	.294	.301	4	25.00

43	.001	.341	2	13852.5	20.1	13872.7	1.000	11.2	1721.7	1721.0	10.7	60.9	.5	.0155	.301	.263	5	25.00
43	.001	.341	2	13852.6	18.7	13871.2	1.000	11.2	1721.7	1721.1	10.7	60.8	.4	.0155	.263	.272	6	25.00
44	.001	.342	2	13840.1	29.2	13869.3	1.000	11.4	1721.7	1720.8	10.7	61.2	.7	.0148	.263	.416	0	25.00
44	.001	.342	2	13840.1	36.2	13876.3	1.000	11.5	1721.7	1720.7	10.7	61.5	.8	.0148	.416	.478	1	25.00
44	.001	.342	2	13840.1	39.2	13879.3	1.000	11.6	1721.7	1720.6	10.7	61.6	.9	.0148	.478	.485	2	25.00
44	.001	.342	2	13840.1	39.5	13879.6	1.000	11.6	1721.7	1720.6	10.7	61.6	.9	.0148	.485	.497	3	25.00
44	.001	.342	2	13840.1	40.1	13880.2	1.000	11.6	1721.7	1720.6	10.7	61.7	.9	.0148	.497	.508	4	25.00
44	.001	.342	2	13840.1	40.7	13880.7	1.000	11.6	1721.7	1720.6	10.7	61.7	.9	.0148	.508	.520	5	25.00
44	.001	.342	2	13840.1	41.3	13881.3	1.000	11.6	1721.7	1720.6	10.7	61.7	.9	.0148	.520	.533	6	25.00
44	.001	.342	2	13840.1	41.9	13881.9	1.000	11.6	1721.7	1720.6	10.7	61.7	.9	.0148	.533	.545	7	25.00
44	.001	.342	2	13840.0	42.5	13882.6	1.000	11.6	1721.7	1720.6	10.7	61.7	.9	.0148	.545	.558	8	25.00
44	.001	.342	2	13840.0	43.2	13883.2	1.000	11.6	1721.7	1720.6	10.7	61.8	.9	.0148	.558	.571	9	25.00
44	.001	.342	2	13840.0	43.8	13883.9	1.000	11.6	1721.7	1720.5	10.7	61.8	1.0	.0148	.571	.584	10	25.00
44	.001	.342	2	13840.0	44.5	13884.5	1.000	11.7	1721.7	1720.5	10.7	61.8	1.0	.0148	.584	.598	11	25.00
44	.001	.342	2	13840.0	45.2	13885.2	1.000	11.7	1721.7	1720.5	10.7	61.8	1.0	.0148	.598	.612	12	25.00
44	.001	.342	2	13840.0	45.9	13885.9	1.000	11.7	1721.7	1720.5	10.7	61.9	1.0	.0148	.612	.533	13	25.00
44	.001	.342	2	13840.1	41.9	13882.0	1.000	11.6	1721.7	1720.6	10.7	61.7	.9	.0148	.533	.556	14	25.00
44	.001	.342	2	13840.0	43.1	13883.1	1.000	11.6	1721.7	1720.6	10.7	61.8	.9	.0148	.556	.567	15	25.00
44	.001	.342	2	13840.0	43.7	13883.7	1.000	11.6	1721.7	1720.5	10.7	61.8	1.0	.0148	.567	.581	16	25.00
44	.001	.342	2	13840.0	44.3	13884.4	1.000	11.6	1721.7	1720.5	10.7	61.8	1.0	.0148	.581	.594	17	25.00
44	.001	.342	2	13840.0	45.0	13885.1	1.000	11.7	1721.7	1720.5	10.7	61.8	1.0	.0148	.594	.608	18	25.00
44	.001	.342	2	13840.0	45.7	13885.8	1.000	11.7	1721.7	1720.5	10.7	61.8	1.0	.0148	.608	.622	19	25.00
44	.001	.342	2	13840.0	46.5	13886.5	1.000	11.7	1721.7	1720.5	10.7	61.9	1.0	.0148	.622	.542	20	25.00
45	.001	.343	2	13827.0	72.6	13899.6	1.000	12.1	1721.7	1720.1	10.7	62.7	1.4	.0145	.542	.870	0	25.00
45	.001	.343	2	13826.7	93.8	13920.5	1.000	12.4	1721.7	1719.8	10.7	63.2	1.7	.0145	.870	1.003	1	25.00
45	.001	.343	2	13826.3	103.0	13929.4	1.000	12.5	1721.7	1719.7	10.7	63.5	1.8	.0145	1.003	1.121	2	25.00
45	.001	.343	2	13826.3	111.5	13937.8	1.000	12.6	1721.7	1719.5	10.7	63.7	2.0	.0145	1.121	1.168	3	25.00
45	.001	.343	2	13826.3	114.9	13941.2	1.000	12.6	1721.7	1719.5	10.7	63.8	2.0	.0145	1.168	1.233	4	25.00
45	.001	.343	2	13826.2	119.9	13946.1	1.000	12.7	1721.7	1719.4	10.7	63.9	2.1	.0145	1.233	1.202	5	25.00
45	.001	.343	2	13826.3	117.5	13943.8	1.000	12.6	1721.7	1719.5	10.7	63.8	2.0	.0145	1.202	1.194	6	25.00
46	.001	.344	2	13811.9	219.8	14031.8	1.000	13.7	1721.7	1718.4	10.7	65.9	3.1	.0146	1.202	1.842	0	25.00
46	.001	.344	2	13811.8	285.1	14096.8	1.000	14.2	1721.7	1717.8	10.7	67.0	3.7	.0146	1.842	2.139	1	25.00
46	.001	.344	2	13811.5	317.9	14129.4	1.000	14.5	1721.7	1717.5	10.7	67.5	4.0	.0146	2.139	2.292	2	25.00
46	.001	.344	2	13811.1	335.5	14146.5	1.000	14.6	1721.7	1717.4	10.7	67.8	4.1	.0146	2.292	2.425	3	25.00
46	.001	.344	2	13811.0	351.1	14162.1	1.000	14.7	1721.7	1717.2	10.7	68.0	4.3	.0146	2.425	2.479	4	25.00
46	.001	.344	2	13811.0	357.4	14168.4	1.000	14.8	1721.7	1717.2	10.7	68.1	4.3	.0146	2.479	2.475	5	25.00
47	.001	.345	2	13793.2	705.5	14498.7	1.000	16.9	1721.7	1714.9	10.7	72.4	6.6	.0153	2.479	3.295	0	25.00
47	.001	.345	2	13792.8	843.2	14636.0	1.000	17.6	1721.7	1714.1	10.7	73.8	7.4	.0153	3.295	3.649	1	25.00
47	.001	.345	2	13791.6	907.5	14699.1	1.000	18.0	1721.7	1713.8	10.7	74.5	7.7	.0153	3.649	3.776	2	25.00
47	.001	.345	2	13791.4	930.7	14722.1	1.000	18.1	1721.7	1713.6	10.7	74.7	7.9	.0153	3.776	3.790	3	25.00
47	.001	.345	2	13791.0	933.3	14724.3	1.000	18.1	1721.7	1713.6	10.7	74.7	7.9	.0153	3.790	3.844	4	25.00
47	.001	.345	2	13791.0	943.5	14734.4	1.000	18.1	1721.7	1713.6	10.7	74.8	7.9	.0153	3.844	3.799	5	25.00
47	.001	.345	2	13791.0	935.0	14726.0	1.000	18.1	1721.7	1713.6	10.7	74.7	7.9	.0153	3.799	3.820	6	25.00
47	.001	.345	2	13791.0	938.9	14729.8	1.000	18.1	1721.7	1713.6	10.7	74.8	7.9	.0153	3.820	3.862	7	25.00
47	.001	.345	2	13791.0	946.8	14737.7	1.000	18.1	1721.7	1713.6	10.7	74.8	7.9	.0153	3.862	3.827	8	25.00
47	.001	.345	2	13791.0	940.3	14731.3	1.000	18.1	1721.7	1713.6	10.7	74.8	7.9	.0153	3.827	3.839	9	25.00
47	.001	.345	2	13791.0	942.5	14733.5	1.000	18.1	1721.7	1713.6	10.7	74.8	7.9	.0153	3.839	3.816	10	25.00
47	.001	.345	2	13791.0	938.1	14729.1	1.000	18.1	1721.7	1713.6	10.7	74.8	7.9	.0153	3.816	3.820	11	25.00
48	.001	.346	2	13765.7	1783.7	15549.4	1.000	21.5	1721.7	1710.0	10.7	81.4	11.5	.0163	3.816	4.219	0	25.00
48	.001	.346	2	13765.1	1882.0	15647.1	1.000	21.8	1721.7	1709.6	10.7	82.1	11.9	.0163	4.219	4.798	1	25.00
48	.001	.346	2	13762.9	2043.3	15806.1	1.000	22.4	1721.7	1709.0	10.7	83.1	12.5	.0163	4.798	4.600	2	25.00
48	.001	.346	2	13762.4	1985.3	15747.7	1.000	22.2	1721.7	1709.2	10.7	82.7	12.3	.0163	4.600	4.763	3	25.00
48	.001	.346	2	13762.1	2032.2	15794.4	1.000	22.3	1721.7	1709.1	10.7	83.0	12.4	.0163	4.763	4.679	4	25.00
48	.001	.346	2	13762.3	2007.7	15770.1	1.000	22.2	1721.7	1709.2	10.7	82.9	12.3	.0163	4.679	4.760	5	25.00
48	.001	.346	2	13762.1	2031.1	15793.2	1.000	22.3	1721.7	1709.1	10.7	83.0	12.4	.0163	4.760	4.689	6	25.00
48	.001	.346	2	13762.3	2010.9	15773.2	1.000	22.3	1721.7	1709.2	10.7	82.9	12.3	.0163	4.689	4.748	7	25.00
48	.001	.346	2	13762.1	2027.6	15789.7	1.000	22.3	1721.7	1709.1	10.7	83.0	12.4	.0163	4.748	4.723	8	25.00
48	.001	.346	2	13762.5	2020.4	15782.9	1.000	22.3	1721.7	1709.1	10.7	83.0	12.4	.0163	4.723	4.732	9	25.00
49	.001	.347	2	13722.9	3541.6	17264.4	1.000	26.5	1721.7	1704.6	10.7	91.2	16.9	.0179	4.723	4.351	0	25.00
49	.001	.347	2	13722.8	3387.5	17110.3	1.000	26.2	1721.7	1705.0	10.7	90.5	16.5	.0179	4.351	5.366	1	25.00
49	.001	.347	2	13718.9	3781.1	17500.0	1.000	27.1	1721.7	1703.9	10.7	92.3	17.6	.0179	5.366	4.577	2	25.00
49	.001	.347	2	13719.2	3470.6	17189.8	1.000	26.4	1721.7	1704.7	10.7	90.9	16.8	.0179	4.577	5.332	3	25.00
49	.001	.347	2	13718.5	3766.5	17485.0	1.000	27.1	1721.7	1704.0	10.7	92.2	17.5	.0179	5.332	4.662	4	25.00
49	.001	.347	2	13719.2	3502.9	17222.0	1.000	26.5	1721.7	1704.7	10.7	91.1	16.8	.0179	4.662	5.256	5	25.00
49	.001	.347	2	13718.6	3735.9	17454.5	1.000	27.0	1721.7	1704.1	10.7	92.1	17.4	.0179	5.256	4.718	6	25.00
49	.001	.347	2	13719.1	3524.4	17243.6	1.000	26.5	1721.7	1704.6	10.7	91.2	16.9	.0179	4.718	5.202	7	25.00
49	.001	.347	2	13718.4	3714.5	17432.9	1.000	27.0	1721.7	1704.1	10.7	92.0	17.4	.0179	5.202	4.759	8	25.00
49	.001	.347	2	13718.8	3540.4	17259.2	1.000	26.5	1721.7	1704.6	10.7	91.2	16.9	.0179	4.759	5.162	9	25.00
49	.001	.347	2	13718.4	3698.5	17416.9	1.000	26.9	1721.7	1704.1	10.7	91.9	17.4	.0179	5.162	4.809	10	25.00
49	.001	.347	2	13718.7	3559.4	17278.1	1.000	26.6	1721.7	1704.5	10.7	91.3	17.0	.0179	4.809	5.136	11	25.00
49	.001	.347	2	13718.4	3687.8	17406.2	1.000	26.9	1721.7	1704.2	10.7	91.9	17.3	.0179	5.136	4.848	12	25.00
49	.001	.347	2	13718.7	3574.7	17293.4	1.000	26.6	1721.7	1704.5	10.7	91.4	17.0	.0179	4.848	5.104	13	25.00
49	.001	.347	2	13718.4	3675.3	17393.7	1.000	26.9	1721.7	1704.2	10.7	91.8	17.3	.0179	5.104	4.865	14	25.00
49	.001	.347	2	13718.7	3581.2	17300.0	1.000	26.6	1721.7	1704.4	10.7	91.4	17.1	.0179	4.865	5.072	15	25.00
49	.001	.347	2	13718.4	3662.7	17381.1	1.000	26.8	1721.7	1704.2	10.7	91.8	17.3	.0179	5.072	4.875	16	25.00
49	.001	.347	2	13718.9	3585.6	17304.5	1.000	26.7	1721.7	1704.4	10.7	91.4	17.1	.0179	4.875	5.051	17	25.00
49	.001	.347	2	13718.8	3654.6	17373.4	1.000	26.8	1721.7	1704.3	10.7	91.7	17.2	.0179	5.051	4.898	18	25.00
49	.001	.347	2	13718.9	3594.2	17313.1	1.000	26.7	1721.7	1704.4	10.7	91.5	17.1	.0179	4.898	5.031	19	25.00
49	.001	.347	2	13718.8	3646.6	17365.5	1.000	26.8	1721.7	1704.3	10.7	91.7	17.2	.0179	5.031	4.919	20	25.00
50	.001	.348	2	13658.9	5701.6	19360.5	1.000	31.2	1721.7	1699.6	10.7	100.0	21.9	.0205	4.919	3.721	0	25.00

Step I	Time Step (hr) DTH	Elpse Time (hr) T	Fail Code KG	Spillway Outflow (cfs) QTS	Breach Outflow (cfs) QB	Total Outflow (cfs) QTOT	Sbmrg Crctn Factr SUB	Brech Top Width (ft) BT	Rsrvor W. S. Elev. (ft - MSL) HY	Breach Bottom Elev. (ft - MSL) HC	Brech Bottm Width (ft) BO	D.S.F. Breach Length (ft) PPP	U.S.F. Eroson Depth (ft) HP	Brech Manig (n) CNN	Estmte Erosin Depth Incrse (ft) DH	Comput Erosin Depth Incrse (ft) DHH	Itrtn Count KIT	Brech Vrtcl Side Angle (deg) ALG
50	.001	.348	2	13659.9	5120.3	18780.2	1.000	30.0	1721.7	1700.8	10.7	98.0	20.7	.0205	3.721	4.812	1	25.00
50	.001	.348	2	13655.1	5650.4	19305.5	1.000	31.1	1721.7	1699.7	10.7	99.9	21.8	.0205	4.812	3.655	2	25.00
50	.001	.348	2	13656.1	5090.1	18746.1	1.000	30.0	1721.7	1700.9	10.7	97.9	20.6	.0205	3.655	4.865	3	25.00
50	.001	.348	2	13655.2	5677.3	19332.5	1.000	31.1	1721.7	1699.7	10.7	100.0	21.8	.0205	4.865	3.608	4	25.00
50	.001	.348	2	13656.5	5068.1	18724.5	1.000	29.9	1721.7	1700.9	10.7	97.8	20.6	.0205	3.608	4.898	5	25.00
50	.001	.348	2	13655.2	5694.1	19349.3	1.000	31.1	1721.7	1699.6	10.7	100.0	21.9	.0205	4.898	3.562	6	25.00
50	.001	.348	2	13656.5	5046.6	18703.1	1.000	29.9	1721.7	1701.0	10.7	97.7	20.5	.0205	3.562	4.950	7	25.00
50	.001	.348	2	13655.2	5720.3	19375.5	1.000	31.2	1721.7	1699.6	10.7	100.1	21.9	.0205	4.950	3.507	8	25.00
50	.001	.348	2	13656.5	5021.1	18677.6	1.000	29.8	1721.7	1701.0	10.7	97.6	20.5	.0205	3.507	5.010	9	25.00
50	.001	.348	2	13655.2	5750.8	19406.0	1.000	31.3	1721.7	1699.5	10.7	100.2	22.0	.0205	5.010	3.454	10	25.00
50	.001	.348	2	13656.3	4996.7	18653.0	1.000	29.8	1721.7	1701.1	10.7	97.5	20.4	.0205	3.454	5.065	11	25.00
50	.001	.348	2	13654.8	5779.1	19433.9	1.000	31.3	1721.7	1699.4	10.7	100.3	22.1	.0205	5.065	3.390	12	25.00
50	.001	.348	2	13656.3	4967.3	18623.7	1.000	29.7	1721.7	1701.1	10.7	97.4	20.4	.0205	3.390	5.146	13	25.00
50	.001	.348	2	13654.8	5819.9	19474.7	1.000	31.4	1721.7	1699.4	10.7	100.4	22.1	.0205	5.146	3.331	14	25.00
50	.001	.348	2	13656.4	4940.1	18596.4	1.000	29.7	1721.7	1701.2	10.7	97.3	20.3	.0205	3.331	5.209	15	25.00
50	.001	.348	2	13654.8	5852.8	19507.6	1.000	31.4	1721.7	1699.3	10.7	100.6	22.2	.0205	5.209	3.253	16	25.00
50	.001	.348	2	13656.4	4904.9	18561.3	1.000	29.6	1721.7	1701.3	10.7	97.2	20.2	.0205	3.253	5.285	17	25.00
50	.001	.348	2	13654.9	5891.6	19546.5	1.000	31.5	1721.7	1699.2	10.7	100.7	22.3	.0205	5.285	3.188	18	25.00
50	.001	.348	2	13656.6	4875.1	18531.7	1.000	29.5	1721.7	1701.3	10.7	97.0	20.2	.0205	3.188	5.366	19	25.00
50	.001	.348	2	13654.5	5933.9	19588.4	1.000	31.6	1721.7	1699.1	10.7	100.8	22.4	.0205	5.366	3.104	20	25.00
51	.001	.349	2	13577.7	6317.0	19894.8	1.000	32.3	1721.7	1698.4	10.7	102.3	23.1	.0209	3.104	5.387	0	25.00
51	.001	.349	3	13573.0	12932.1	26505.1	1.000	46.5	1721.7	1694.7	21.5	10.8	5.6	.0209	5.387	.024	1	25.00
51	.001	.349	3	13568.5	8414.0	21982.4	1.000	35.8	1721.7	1694.7	10.8	.0	11.2	.0209	.024	.028	2	25.00
51	.001	.349	3	13556.7	8419.5	21976.3	1.000	35.8	1721.7	1694.7	10.8	.1	17.8	.0209	.028	.028	3	25.00
51	.001	.349	3	13567.7	8419.5	21987.2	1.000	35.8	1721.7	1694.7	10.8	.1	17.8	.0209	.028	.028	4	25.00
51	.001	.349	3	13567.3	8419.5	21986.8	1.000	35.8	1721.7	1694.7	10.8	.1	17.8	.0209	.028	.028	5	25.00
52	.010	.359	3	13214.6	8349.4	21564.0	1.000	35.8	1721.5	1694.7	10.9	.1	17.8	.0219	.028	.274	0	25.00
52	.010	.359	3	12951.1	8555.9	21506.9	1.000	36.3	1721.5	1694.7	11.3	.5	17.9	.0219	.274	.285	1	25.00
52	.010	.359	3	12956.1	8563.4	21519.4	1.000	36.4	1721.5	1694.7	11.4	.6	17.9	.0219	.285	.285	2	25.00
52	.010	.359	3	12951.1	8563.7	21514.8	1.000	36.4	1721.5	1694.7	11.4	.6	17.9	.0219	.285	.285	3	25.00
53	.010	.369	3	11659.0	8627.6	20286.5	1.000	36.9	1721.2	1694.7	11.9	.6	17.9	.0219	.285	.290	0	25.00
53	.010	.369	3	12083.3	8629.9	20713.2	1.000	36.9	1721.2	1694.7	11.9	.6	17.7	.0219	.290	.290	1	25.00
53	.010	.369	3	12074.9	8629.6	20704.6	1.000	36.9	1721.2	1694.7	11.9	.6	17.6	.0219	.290	.290	2	25.00
53	.010	.369	3	12074.9	8629.9	20704.8	1.000	36.9	1721.2	1694.7	11.9	.6	17.7	.0219	.290	.290	3	25.00
53	.010	.369	3	12074.9	8629.9	20704.8	1.000	36.9	1721.2	1694.7	11.9	.6	17.7	.0219	.290	.290	4	25.00
53	.010	.369	3	12074.9	8629.8	20704.7	1.000	36.9	1721.2	1694.7	11.9	.6	17.6	.0219	.290	.290	5	25.00
54	.010	.379	3	11233.1	8698.0	19931.1	1.000	37.5	1721.0	1694.7	12.5	.6	17.6	.0219	.290	.292	0	25.00
54	.010	.379	3	11243.1	8699.4	19942.5	1.000	37.5	1721.0	1694.7	12.5	.6	17.3	.0219	.292	.292	1	25.00
55	.010	.389	3	10450.5	8772.5	19223.0	1.000	38.1	1720.7	1694.7	13.1	.6	17.3	.0219	.292	.295	0	25.00
55	.010	.389	3	10450.9	8774.3	19225.1	1.000	38.1	1720.7	1694.7	13.1	.6	17.0	.0219	.295	.295	1	25.00
55	.010	.389	3	10449.0	8774.3	19223.3	1.000	38.1	1720.7	1694.7	13.1	.6	17.0	.0219	.295	.295	2	25.00
55	.010	.389	3	10449.0	8774.3	19223.2	1.000	38.1	1720.7	1694.7	13.1	.6	17.0	.0219	.295	.295	3	25.00
55	.010	.389	3	10449.0	8774.2	19223.2	1.000	38.1	1720.7	1694.7	13.1	.6	17.0	.0219	.295	.294	4	25.00
55	.010	.389	3	10449.0	8774.1	19223.1	1.000	38.1	1720.7	1694.7	13.1	.6	17.0	.0219	.294	.295	5	25.00
56	.010	.399	3	9697.6	8852.3	18549.9	1.000	38.7	1720.5	1694.7	13.7	.6	17.0	.0218	.294	.297	0	25.00
56	.010	.399	3	9698.4	8854.1	18552.5	1.000	38.7	1720.5	1694.7	13.7	.6	16.8	.0218	.297	.297	1	25.00
56	.010	.399	3	9696.1	8854.1	18550.2	1.000	38.7	1720.5	1694.7	13.7	.6	16.7	.0218	.297	.297	2	25.00
56	.010	.399	3	9696.1	8854.1	18550.2	1.000	38.7	1720.5	1694.7	13.7	.6	16.7	.0218	.297	.297	3	25.00
56	.010	.399	3	9696.1	8854.0	18550.1	1.000	38.7	1720.5	1694.7	13.7	.6	16.7	.0218	.297	.298	4	25.00
56	.010	.399	3	9696.1	8854.3	18550.4	1.000	38.7	1720.5	1694.7	13.7	.6	16.8	.0218	.298	.298	5	25.00
57	.010	.409	3	8981.4	8937.5	17918.9	1.000	39.3	1720.3	1694.7	14.3	.6	16.8	.0218	.298	.300	0	25.00
57	.010	.409	3	8982.1	8939.2	17921.3	1.000	39.3	1720.3	1694.7	14.3	.6	16.5	.0218	.300	.300	1	25.00
57	.010	.409	3	8979.8	8939.3	17919.1	1.000	39.3	1720.3	1694.7	14.3	.6	16.5	.0218	.300	.300	2	25.00
57	.010	.409	3	8979.8	8939.2	17919.0	1.000	39.3	1720.3	1694.7	14.3	.6	16.5	.0218	.300	.300	3	25.00
57	.010	.409	3	8979.8	8939.2	17919.0	1.000	39.3	1720.3	1694.7	14.3	.6	16.5	.0218	.300	.300	4	25.00
57	.010	.409	3	8979.8	8939.1	17918.9	1.000	39.3	1720.3	1694.7	14.3	.6	16.5	.0218	.300	.300	5	25.00
58	.010	.419	3	8298.3	9026.7	17325.0	1.000	39.9	1720.0	1694.7	14.9	.6	16.5	.0218	.300	.303	0	25.00
58	.010	.419	3	8299.5	9028.5	17328.0	1.000	39.9	1720.0	1694.7	14.9	.6	16.2	.0218	.303	.303	1	25.00
58	.010	.419	3	8297.2	9028.6	17325.7	1.000	39.9	1720.0	1694.7	14.9	.6	16.2	.0218	.303	.303	2	25.00
58	.010	.419	3	8297.2	9028.5	17325.7	1.000	39.9	1720.0	1694.7	14.9	.6	16.2	.0218	.303	.303	3	25.00
58	.010	.419	3	8297.2	9028.5	17325.6	1.000	39.9	1720.0	1694.7	14.9	.6	16.2	.0218	.303	.304	4	25.00
58	.010	.419	3	8297.2	9028.7	17325.9	1.000	39.9	1720.0	1694.7	14.9	.6	16.2	.0218	.304	.304	5	25.00
59	.010	.429	3	7742.8	9120.5	16863.3	1.000	40.5	1719.8	1694.7	15.5	.6	16.2	.0218	.304	.307	0	25.00
59	.010	.429	3	7742.8	9122.2	16865.0	1.000	40.5	1719.8	1694.7	15.5	.6	16.0	.0218	.307	.307	1	25.00
59	.010	.429	3	7740.6	9122.2	16862.8	1.000	40.5	1719.8	1694.7	15.5	.6	16.0	.0218	.307	.307	2	25.00
59	.010	.429	3	7740.6	9122.2	16862.8	1.000	40.5	1719.8	1694.7	15.5	.6	16.0	.0218	.307	.306	3	25.00
59	.010	.429	3	7740.6	9122.1	16862.7	1.000	40.5	1719.8	1694.7	15.5	.6	16.0	.0218	.306	.306	4	25.00
59	.010	.429	3	7740.6	9122.1	16862.7	1.000	40.5	1719.8	1694.7	15.5	.6	16.0	.0218	.306	.307	5	25.00
60	.010	.439	3	7227.0	9216.4	16443.4	1.000	41.1	1719.6	1694.7	16.1	.6	16.0	.0218	.306	.310	0	25.00
60	.010	.439	3	7225.8	9218.2	16444.0	1.000	41.2	1719.6	1694.7	16.2	.6	15.7	.0218	.310	.310	1	25.00
60	.010	.439	3	7223.6	9218.3	16441.8	1.000	41.2	1719.6	1694.7	16.2	.6	15.7	.0218	.310	.310	2	25.00
60	.010	.439	3	7223.6	9218.5	16442.1	1.000	41.2	1719.6	1694.7	16.2	.6	15.7	.0218	.310	.310	3	25.00
60	.010	.439	3	7223.6	9218.5	16442.0	1.000	41.2	1719.6	1694.7	16.2	.6	15.7	.0218	.310	.310	4	25.00
60	.010	.439	3	7223.6	9218.4	16442.0	1.000	41.2	1719.6	1694.7	16.2	.6	15.7	.0218	.310	.310	5	25.00
61	.010	.449	3	6721.8	9314.7	16036.6	1.000	41.8	1719.4	1694.7	16.8	.6	15.7	.0218	.310	.313	0	25.00

61	.010	.449	3	6723.1	9316.5	16039.6	1.000	41.8	1719.4	1694.7	16.8	.6	15.5	.0218	.313	.313	1	25.00
61	.010	.449	3	6720.9	9316.5	16037.4	1.000	41.8	1719.4	1694.7	16.8	.6	15.5	.0218	.313	.313	2	25.00
61	.010	.449	3	6720.9	9316.5	16037.4	1.000	41.8	1719.4	1694.7	16.8	.6	15.5	.0218	.313	.313	3	25.00
61	.010	.449	3	6720.9	9316.4	16037.3	1.000	41.8	1719.4	1694.7	16.8	.6	15.5	.0218	.313	.313	4	25.00
61	.010	.449	3	6720.9	9316.7	16037.6	1.000	41.8	1719.4	1694.7	16.8	.6	15.5	.0218	.313	.313	5	25.00
62	.010	.459	3	6231.1	9414.5	15645.6	1.000	42.4	1719.2	1694.7	17.4	.6	15.5	.0218	.313	.317	0	25.00
62	.010	.459	3	6233.0	9416.1	15649.0	1.000	42.4	1719.2	1694.7	17.4	.6	15.3	.0218	.317	.317	1	25.00
62	.010	.459	3	6230.5	9416.1	15646.6	1.000	42.4	1719.2	1694.7	17.4	.6	15.3	.0218	.317	.316	2	25.00
62	.010	.459	3	6230.5	9416.1	15646.5	1.000	42.4	1719.2	1694.7	17.4	.6	15.3	.0218	.316	.317	3	25.00
62	.010	.459	3	6230.5	9416.3	15646.8	1.000	42.4	1719.2	1694.7	17.4	.6	15.3	.0218	.317	.317	4	25.00
62	.010	.459	3	6230.5	9416.3	15646.7	1.000	42.4	1719.2	1694.7	17.4	.6	15.3	.0218	.317	.317	5	25.00
63	.010	.469	3	5752.2	9515.3	15267.6	1.000	43.0	1719.1	1694.7	18.1	.6	15.3	.0217	.317	.320	0	25.00
63	.010	.469	3	5754.1	9517.2	15271.3	1.000	43.1	1719.1	1694.7	18.1	.6	15.1	.0217	.320	.320	1	25.00
63	.010	.469	3	5751.9	9517.3	15269.2	1.000	43.1	1719.1	1694.7	18.1	.6	15.0	.0217	.320	.320	2	25.00
63	.010	.469	3	5751.9	9517.2	15269.1	1.000	43.1	1719.1	1694.7	18.1	.6	15.0	.0217	.320	.320	3	25.00
63	.010	.469	3	5751.9	9517.2	15269.1	1.000	43.1	1719.1	1694.7	18.1	.6	15.0	.0217	.320	.320	4	25.00
63	.010	.469	3	5751.9	9517.1	15269.0	1.000	43.1	1719.1	1694.7	18.1	.6	15.0	.0217	.320	.320	5	25.00
64	.010	.479	3	5284.3	9617.3	14901.6	1.000	43.7	1718.9	1694.7	18.7	.6	15.0	.0217	.320	.323	0	25.00
64	.010	.479	3	5286.5	9618.9	14905.4	1.000	43.7	1718.9	1694.7	18.7	.6	14.8	.0217	.323	.323	1	25.00
64	.010	.479	3	5284.0	9619.0	14903.0	1.000	43.7	1718.9	1694.7	18.7	.6	14.8	.0217	.323	.324	2	25.00
64	.010	.479	3	5284.0	9619.2	14903.2	1.000	43.7	1718.9	1694.7	18.7	.6	14.8	.0217	.324	.324	3	25.00
64	.010	.479	3	5284.0	9619.2	14903.2	1.000	43.7	1718.9	1694.7	18.7	.6	14.8	.0217	.324	.324	4	25.00
64	.010	.479	3	5284.0	9619.1	14903.1	1.000	43.7	1718.9	1694.7	18.7	.6	14.8	.0217	.324	.324	5	25.00
65	.010	.489	3	4826.4	9720.3	14546.7	1.000	44.3	1718.7	1694.7	19.4	.6	14.8	.0217	.324	.327	0	25.00
65	.010	.489	3	4828.3	9722.0	14550.2	1.000	44.4	1718.7	1694.7	19.4	.7	14.6	.0217	.327	.327	1	25.00
65	.010	.489	3	4826.1	9722.0	14548.1	1.000	44.4	1718.7	1694.7	19.4	.7	14.6	.0217	.327	.327	2	25.00
65	.010	.489	3	4826.1	9722.2	14548.3	1.000	44.4	1718.7	1694.7	19.4	.7	14.6	.0217	.327	.327	3	25.00
65	.010	.489	3	4826.1	9722.2	14548.3	1.000	44.4	1718.7	1694.7	19.4	.7	14.6	.0217	.327	.327	4	25.00
65	.010	.489	3	4826.1	9722.2	14548.2	1.000	44.4	1718.7	1694.7	19.4	.7	14.6	.0217	.327	.327	5	25.00
66	.010	.499	3	4377.6	9824.2	14201.7	1.000	45.0	1718.5	1694.7	20.0	.7	14.6	.0217	.327	.331	0	25.00
66	.010	.499	3	4379.4	9825.9	14205.3	1.000	45.0	1718.5	1694.7	20.0	.7	14.4	.0217	.331	.331	1	25.00
66	.010	.499	3	4376.9	9825.9	14202.9	1.000	45.0	1718.5	1694.7	20.0	.7	14.4	.0217	.331	.331	2	25.00
66	.010	.499	3	4376.9	9825.9	14202.8	1.000	45.0	1718.5	1694.7	20.0	.7	14.4	.0217	.331	.331	3	25.00
66	.010	.499	3	4376.9	9825.9	14202.9	1.000	45.0	1718.5	1694.7	20.0	.7	14.4	.0217	.331	.330	4	25.00
66	.010	.499	3	4377.3	9825.8	14203.0	1.000	45.0	1718.5	1694.7	20.0	.7	14.4	.0217	.330	.330	5	25.00
67	.010	.509	3	4041.6	9928.8	13970.4	1.000	45.7	1718.3	1694.7	20.7	.7	14.4	.0217	.330	.334	0	25.00
67	.010	.509	3	4043.9	9930.4	13974.3	1.000	45.7	1718.3	1694.7	20.7	.7	14.2	.0217	.334	.334	1	25.00
67	.010	.509	3	4042.0	9930.5	13972.5	1.000	45.7	1718.3	1694.7	20.7	.7	14.2	.0217	.334	.334	2	25.00
67	.010	.509	3	4042.0	9930.7	13972.7	1.000	45.7	1718.3	1694.7	20.7	.7	14.2	.0217	.334	.334	3	25.00
67	.010	.509	3	4042.0	9930.7	13972.7	1.000	45.7	1718.3	1694.7	20.7	.7	14.2	.0217	.334	.334	4	25.00
67	.010	.509	3	4042.0	9930.6	13972.7	1.000	45.7	1718.3	1694.7	20.7	.7	14.2	.0217	.334	.334	5	25.00
68	.010	.519	3	3725.3	10035.1	13760.4	1.000	46.4	1718.2	1694.7	21.4	.7	14.2	.0217	.334	.338	0	25.00
68	.010	.519	3	3727.6	10036.7	13764.3	1.000	46.4	1718.2	1694.7	21.4	.7	14.0	.0217	.338	.338	1	25.00
68	.010	.519	3	3725.7	10037.0	13762.7	1.000	46.4	1718.2	1694.7	21.4	.7	14.1	.0217	.338	.338	2	25.00
68	.010	.519	3	3725.7	10036.9	13762.7	1.000	46.4	1718.2	1694.7	21.4	.7	14.0	.0217	.338	.338	3	25.00
68	.010	.519	3	3725.7	10036.9	13762.6	1.000	46.4	1718.2	1694.7	21.4	.7	14.0	.0217	.338	.338	4	25.00
68	.010	.519	3	3725.7	10036.8	13762.6	1.000	46.4	1718.2	1694.7	21.4	.7	14.0	.0217	.338	.338	5	25.00
69	.010	.529	3	3417.8	10143.1	13560.8	1.000	47.0	1718.0	1694.7	22.0	.7	14.0	.0217	.338	.341	0	25.00
69	.010	.529	3	3419.6	10144.8	13564.4	1.000	47.0	1718.0	1694.7	22.0	.7	13.9	.0217	.341	.341	1	25.00
69	.010	.529	3	3417.8	10144.8	13562.6	1.000	47.0	1718.0	1694.7	22.0	.7	13.9	.0217	.341	.341	2	25.00
69	.010	.529	3	3417.8	10144.8	13562.6	1.000	47.0	1718.0	1694.7	22.0	.7	13.9	.0217	.341	.341	3	25.00
69	.010	.529	3	3417.8	10144.7	13562.5	1.000	47.0	1718.0	1694.7	22.0	.7	13.9	.0217	.341	.341	4	25.00
69	.010	.529	3	3417.8	10144.7	13562.5	1.000	47.0	1718.0	1694.7	22.0	.7	13.9	.0217	.341	.342	5	25.00
70	.010	.539	3	3117.6	10252.5	13370.1	1.000	47.7	1717.9	1694.7	22.7	.7	13.9	.0217	.341	.345	0	25.00
70	.010	.539	3	3119.5	10254.3	13373.8	1.000	47.7	1717.9	1694.7	22.7	.7	13.7	.0217	.345	.345	1	25.00
70	.010	.539	3	3117.4	10254.3	13371.7	1.000	47.7	1717.9	1694.7	22.7	.7	13.7	.0217	.345	.345	2	25.00
70	.010	.539	3	3117.4	10254.3	13371.7	1.000	47.7	1717.9	1694.7	22.7	.7	13.7	.0217	.345	.345	3	25.00
70	.010	.539	3	3117.4	10254.2	13371.6	1.000	47.7	1717.9	1694.7	22.7	.7	13.7	.0217	.345	.345	4	25.00
70	.010	.539	3	3117.4	10254.2	13371.6	1.000	47.7	1717.9	1694.7	22.7	.7	13.7	.0217	.345	.345	5	25.00
71	.010	.549	3	2824.6	10363.6	13188.3	1.000	48.4	1717.7	1694.7	23.4	.7	13.7	.0216	.345	.349	0	25.00
71	.010	.549	3	2826.5	10365.3	13191.8	1.000	48.4	1717.7	1694.7	23.4	.7	13.5	.0216	.349	.349	1	25.00
71	.010	.549	3	2824.4	10365.5	13189.9	1.000	48.4	1717.7	1694.7	23.4	.7	13.5	.0216	.349	.349	2	25.00
71	.010	.549	3	2824.4	10365.0	13189.4	1.000	48.4	1717.7	1694.7	23.4	.7	13.5	.0216	.349	.349	3	25.00
71	.010	.549	3	2824.4	10365.1	13189.5	1.000	48.4	1717.7	1694.7	23.4	.7	13.5	.0216	.349	.349	4	25.00
71	.010	.549	3	2824.4	10365.2	13189.6	1.000	48.4	1717.7	1694.7	23.4	.7	13.5	.0216	.349	.349	5	25.00
72	.010	.559	3	2538.6	10476.1	13014.7	1.000	49.1	1717.6	1694.7	24.1	.7	13.5	.0216	.349	.353	0	25.00
72	.010	.559	3	2540.4	10478.0	13018.4	1.000	49.1	1717.5	1694.7	24.1	.7	13.4	.0216	.353	.352	1	25.00
72	.010	.559	3	2538.4	10477.6	13016.0	1.000	49.1	1717.5	1694.7	24.1	.7	13.4	.0216	.352	.353	2	25.00
72	.010	.559	3	2538.4	10477.7	13016.0	1.000	49.1	1717.5	1694.7	24.1	.7	13.4	.0216	.353	.353	3	25.00
72	.010	.559	3	2538.4	10477.8	13016.1	1.000	49.1	1717.5	1694.7	24.1	.7	13.4	.0216	.353	.353	4	25.00
72	.010	.559	3	2538.4	10477.9	13016.2	1.000	49.1	1717.5	1694.7	24.1	.7	13.4	.0216	.353	.353	5	25.00
73	.010	.569	3	2259.0	10590.3	12849.3	1.000	49.8	1717.4	1694.7	24.8	.7	13.4	.0216	.353	.357	0	25.00
73	.010	.569	3	2260.8	10592.1	12853.0	1.000	49.8	1717.4	1694.7	24.9	.7	13.2	.0216	.357	.356	1	25.00
73	.010	.569	3	2258.8	10591.7	12850.5	1.000	49.8	1717.4	1694.7	24.9	.7	13.2	.0216	.356	.356	2	25.00
73	.010	.569	3	2258.8	10591.8	12850.6	1.000	49.8	1717.4	1694.7	24.9	.7	13.2	.0216	.356	.357	3	25.00
73	.010	.569	3	2258.8	10591.9	12850.7	1.000	49.8	1717.4	1694.7	24.9	.7	13.2	.0216	.357	.357	4	25.00
73	.010	.569	3	2258.8	10592.0	12850.8	1.000	49.8	1717.4	1694.7	24.9	.7	13.2	.0216	.357	.357	5	25.00
74	.010	.579	3	1985.4	10705.8	12691.2	1.000	50.6	1717.3	1694.7	25.6	.7	13.2	.0216	.357	.361	0	25.00
74	.010	.579	3	1987.3	10707.5	12694.7	1.000	50.6	1717.3	1694.7	25.6	.7	13.1	.0216	.361	.360	1	25.00
74	.010	.579	3	1985.2	10707.1	12692.3	1.000	50.6	1717.3	1694.7	25.6	.7	13.0	.0216	.360	.360	2	25.00
74	.010	.579	3	1985.2	10707.2	12692.3	1.000	50.6	1717.3	1694.7	25.6	.7	13.0	.0216	.360	.360	3	25.00
74	.010	.579	3	1985.2	10707.3	12692.4	1.000	50.6	1717.3	1694.7	25.6	.7	13.0	.0216	.360	.361	4	25.00
74	.010	.579	3	1985.2	10707.4	12692.5	1.000	50.6	1717.3	1694.7	25.6	.7	13.0	.0216	.361	.361	5	25.00
75	.010	.589	3	1717.1	10822.3	12539.4	1.000	51.3	1717.1	1694.7	26.3	.7	13.1	.0216	.361	.365	0	25.00
75	.010	.589	3	1719.2	10823.8	12543.0	1.000	51.3	1717.1	1694.7	26.3	.7	12.9	.0216	.365	.365	1	25.00
75	.010	.589	3	1716.9	10823.9	12540.8	1.000	51.3	1717.1	1694.7	26.3	.7	12.9	.0216	.365	.364	2	25.00
75	.010	.589	3	1716.9	10823.5	12540.4	1.000	51.3	1717.1	1694.7	26.3	.7	12.9	.0216	.364	.364	3	25.00
75	.010	.589	3	1716.9	10823.7	12540.6	1.000	51.3	1717.1	1694.7	26.3	.7	12.9	.0216	.364	.364	4	25.00
75	.010	.589	3	1717.1	10823.6	12540.8	1.000	51.3	1717.1	1694.7	26.3	.7	12.9	.0216	.364	.365	5	25.00

76	.010	.599	3	1473.8	10939.5	12413.3	1.000	52.0	1717.0	1694.7	27.0	.7	12.9	.0216	.364	.368	0	25.00
76	.010	.599	3	1474.7	10940.9	12415.6	1.000	52.0	1717.0	1694.7	27.0	.7	12.8	.0216	.368	.369	1	25.00
76	.010	.599	3	1473.4	10941.0	12414.4	1.000	52.0	1717.0	1694.7	27.0	.7	12.8	.0216	.369	.369	2	25.00
76	.010	.599	3	1473.4	10941.1	12414.5	1.000	52.0	1717.0	1694.7	27.0	.7	12.8	.0216	.369	.369	3	25.00
76	.010	.599	3	1473.4	10941.2	12414.6	1.000	52.0	1717.0	1694.7	27.0	.7	12.8	.0216	.369	.368	4	25.00
76	.010	.599	3	1473.4	10940.8	12414.2	1.000	52.0	1717.0	1694.7	27.0	.7	12.7	.0216	.368	.368	5	25.00
77	.010	.609	3	1327.3	11056.0	12383.3	1.000	52.8	1716.8	1694.7	27.8	.7	12.7	.0216	.368	.373	0	25.00
77	.010	.609	3	1327.1	11058.0	12385.1	1.000	52.8	1716.8	1694.7	27.8	.7	12.6	.0216	.373	.372	1	25.00
77	.010	.609	3	1326.0	11057.6	12383.6	1.000	52.8	1716.8	1694.7	27.8	.7	12.6	.0216	.372	.372	2	25.00
77	.010	.609	3	1326.0	11057.7	12383.6	1.000	52.8	1716.8	1694.7	27.8	.7	12.6	.0216	.372	.372	3	25.00
77	.010	.609	3	1326.0	11057.8	12383.7	1.000	52.8	1716.8	1694.7	27.8	.7	12.6	.0216	.372	.373	4	25.00
77	.010	.609	3	1326.0	11057.9	12383.8	1.000	52.8	1716.8	1694.7	27.8	.7	12.6	.0216	.373	.373	5	25.00
78	.010	.619	3	1178.3	11171.2	12349.5	1.000	53.5	1716.7	1694.7	28.5	.7	12.6	.0216	.373	.376	0	25.00
78	.010	.619	3	1178.5	11172.4	12351.0	1.000	53.5	1716.7	1694.7	28.5	.8	12.5	.0216	.376	.376	1	25.00
78	.010	.619	3	1177.2	11172.6	12349.8	1.000	53.5	1716.7	1694.7	28.5	.8	12.5	.0216	.376	.377	2	25.00
78	.010	.619	3	1177.2	11172.7	12349.9	1.000	53.5	1716.7	1694.7	28.5	.8	12.5	.0216	.377	.376	3	25.00
78	.010	.619	3	1177.2	11172.2	12349.4	1.000	53.5	1716.7	1694.7	28.5	.8	12.5	.0216	.376	.376	4	25.00
78	.010	.619	3	1177.2	11172.3	12349.5	1.000	53.5	1716.7	1694.7	28.5	.8	12.5	.0216	.376	.376	5	25.00
79	.010	.629	3	1026.4	11282.3	12308.7	1.000	54.3	1716.6	1694.7	29.3	.8	12.5	.0216	.376	.380	0	25.00
79	.010	.629	3	1027.7	11283.5	12311.2	1.000	54.3	1716.6	1694.7	29.3	.8	12.3	.0216	.380	.380	1	25.00
79	.010	.629	3	1026.5	11283.7	12310.2	1.000	54.3	1716.6	1694.7	29.3	.8	12.3	.0216	.380	.380	2	25.00
79	.010	.629	3	1026.5	11283.8	12310.3	1.000	54.3	1716.6	1694.7	29.3	.8	12.3	.0216	.380	.380	3	25.00
79	.010	.629	3	1026.5	11283.9	12310.4	1.000	54.3	1716.6	1694.7	29.3	.8	12.3	.0216	.380	.380	4	25.00
79	.010	.629	3	1026.5	11284.0	12310.5	1.000	54.3	1716.6	1694.7	29.3	.8	12.3	.0216	.380	.380	5	25.00
80	.010	.639	3	873.6	11391.0	12264.6	1.000	55.1	1716.4	1694.7	30.1	.8	12.3	.0216	.380	.384	0	25.00
80	.010	.639	3	874.9	11392.1	12267.0	1.000	55.1	1716.4	1694.7	30.1	.8	12.2	.0216	.384	.384	1	25.00
80	.010	.639	3	873.7	11392.3	12266.0	1.000	55.1	1716.4	1694.7	30.1	.8	12.2	.0216	.384	.383	2	25.00
80	.010	.639	3	873.7	11391.8	12265.5	1.000	55.1	1716.4	1694.7	30.1	.8	12.2	.0216	.383	.383	3	25.00
80	.010	.639	3	873.7	11391.9	12265.6	1.000	55.1	1716.4	1694.7	30.1	.8	12.2	.0216	.383	.384	4	25.00
80	.010	.639	3	873.7	11392.0	12265.7	1.000	55.1	1716.4	1694.7	30.1	.8	12.2	.0216	.384	.384	5	25.00
81	.010	.649	3	719.1	11495.6	12214.7	1.000	55.8	1716.3	1694.7	30.8	.8	12.2	.0215	.384	.387	0	25.00
81	.010	.649	3	720.3	11496.6	12216.9	1.000	55.8	1716.3	1694.7	30.8	.8	12.1	.0215	.387	.387	1	25.00
81	.010	.649	3	719.1	11496.7	12215.8	1.000	55.8	1716.3	1694.7	30.8	.8	12.1	.0215	.387	.387	2	25.00
81	.010	.649	3	719.1	11496.8	12215.9	1.000	55.8	1716.3	1694.7	30.8	.8	12.1	.0215	.387	.387	3	25.00
81	.010	.649	3	719.1	11496.9	12216.0	1.000	55.8	1716.3	1694.7	30.8	.8	12.1	.0215	.387	.388	4	25.00
81	.010	.649	3	719.1	11497.0	12216.1	1.000	55.8	1716.3	1694.7	30.8	.8	12.1	.0215	.388	.387	5	25.00
82	.010	.659	3	562.9	11597.8	12160.8	1.000	56.6	1716.1	1694.7	31.6	.8	12.1	.0215	.388	.391	0	25.00
82	.010	.659	3	564.2	11598.8	12163.0	1.000	56.6	1716.1	1694.7	31.6	.8	11.9	.0215	.391	.390	1	25.00
82	.010	.659	3	563.0	11598.4	12161.4	1.000	56.6	1716.1	1694.7	31.6	.8	11.9	.0215	.390	.390	2	25.00
82	.010	.659	3	563.0	11598.5	12161.5	1.000	56.6	1716.1	1694.7	31.6	.8	11.9	.0215	.390	.390	3	25.00
82	.010	.659	3	563.0	11598.6	12161.6	1.000	56.6	1716.1	1694.7	31.6	.8	11.9	.0215	.390	.391	4	25.00
82	.010	.659	3	563.0	11598.7	12161.7	1.000	56.6	1716.1	1694.7	31.6	.8	11.9	.0215	.391	.391	5	25.00
83	.010	.669	3	421.6	11695.7	12117.3	1.000	57.4	1716.0	1694.7	32.4	.8	11.9	.0215	.391	.394	0	25.00
83	.010	.669	3	422.0	11696.6	12118.6	1.000	57.4	1716.0	1694.7	32.4	.8	11.8	.0215	.394	.394	1	25.00
83	.010	.669	3	421.6	11696.8	12118.3	1.000	57.4	1716.0	1694.7	32.4	.8	11.8	.0215	.394	.394	2	25.00
83	.010	.669	3	421.6	11696.9	12118.4	1.000	57.4	1716.0	1694.7	32.4	.8	11.8	.0215	.394	.394	3	25.00
83	.010	.669	3	421.6	11696.9	12118.5	1.000	57.4	1716.0	1694.7	32.4	.8	11.8	.0215	.394	.394	4	25.00
83	.010	.669	3	421.6	11696.5	12118.1	1.000	57.4	1716.0	1694.7	32.4	.8	11.8	.0215	.394	.394	5	25.00
84	.010	.679	3	363.0	11788.3	12151.3	1.000	58.2	1715.8	1694.7	33.2	.8	11.8	.0215	.394	.397	0	25.00
84	.010	.679	3	362.9	11789.7	12152.6	1.000	58.2	1715.8	1694.7	33.2	.8	11.7	.0215	.397	.397	1	25.00
84	.010	.679	3	362.5	11789.3	12151.8	1.000	58.2	1715.8	1694.7	33.2	.8	11.7	.0215	.397	.397	2	25.00
84	.010	.679	3	362.5	11789.4	12151.9	1.000	58.2	1715.8	1694.7	33.2	.8	11.7	.0215	.397	.397	3	25.00
84	.010	.679	3	362.5	11789.5	12152.0	1.000	58.2	1715.8	1694.7	33.2	.8	11.7	.0215	.397	.397	4	25.00
84	.010	.679	3	362.5	11789.6	12152.0	1.000	58.2	1715.8	1694.7	33.2	.8	11.7	.0215	.397	.397	5	25.00
85	.010	.689	3	301.8	11874.4	12176.1	1.000	59.0	1715.7	1694.7	34.0	.8	11.7	.0215	.397	.400	0	25.00
85	.010	.689	3	301.8	11875.2	12177.0	1.000	59.0	1715.7	1694.7	34.0	.8	11.5	.0215	.400	.400	1	25.00
85	.010	.689	3	301.4	11875.4	12176.8	1.000	59.0	1715.7	1694.7	34.0	.8	11.5	.0215	.400	.400	2	25.00
85	.010	.689	3	301.4	11874.9	12176.3	1.000	59.0	1715.7	1694.7	34.0	.8	11.5	.0215	.400	.400	3	25.00
85	.010	.689	3	301.4	11875.0	12176.4	1.000	59.0	1715.7	1694.7	34.0	.8	11.5	.0215	.400	.400	4	25.00
85	.010	.689	3	301.4	11875.1	12176.5	1.000	59.0	1715.7	1694.7	34.0	.8	11.5	.0215	.400	.400	5	25.00
86	.010	.699	3	238.0	11951.4	12189.4	1.000	59.8	1715.5	1694.7	34.8	.8	11.5	.0215	.400	.403	0	25.00
86	.010	.699	3	238.3	11952.3	12190.6	1.000	59.8	1715.5	1694.7	34.8	.8	11.4	.0215	.403	.403	1	25.00
86	.010	.699	3	238.0	11952.3	12190.4	1.000	59.8	1715.5	1694.7	34.8	.8	11.4	.0215	.403	.402	2	25.00
86	.010	.699	3	238.0	11951.9	12189.9	1.000	59.8	1715.5	1694.7	34.8	.8	11.4	.0215	.402	.402	3	25.00
86	.010	.699	3	238.0	11951.9	12189.9	1.000	59.8	1715.5	1694.7	34.8	.8	11.4	.0215	.402	.402	4	25.00
86	.010	.699	3	238.0	11952.0	12190.0	1.000	59.8	1715.5	1694.7	34.8	.8	11.4	.0215	.402	.403	5	25.00
87	.010	.709	3	172.3	12019.9	12192.3	1.000	60.6	1715.3	1694.7	35.6	.8	11.4	.0215	.402	.405	0	25.00
87	.010	.709	3	172.7	12020.6	12193.3	1.000	60.6	1715.3	1694.7	35.6	.8	11.3	.0215	.405	.405	1	25.00
87	.010	.709	3	172.4	12020.7	12193.1	1.000	60.6	1715.3	1694.7	35.6	.8	11.3	.0215	.405	.404	2	25.00
87	.010	.709	3	172.4	12020.3	12192.6	1.000	60.6	1715.3	1694.7	35.6	.8	11.3	.0215	.404	.405	3	25.00
87	.010	.709	3	172.4	12020.3	12192.7	1.000	60.6	1715.3	1694.7	35.6	.8	11.3	.0215	.405	.405	4	25.00
87	.010	.709	3	172.4	12020.4	12192.8	1.000	60.6	1715.3	1694.7	35.6	.8	11.3	.0215	.405	.405	5	25.00
88	.010	.719	3	104.6	12079.6	12184.2	1.000	61.4	1715.2	1694.7	36.4	.8	11.3	.0215	.405	.406	0	25.00
88	.010	.719	3	104.9	12079.7	12184.6	1.000	61.4	1715.2	1694.7	36.4	.8	11.1	.0215	.406	.406	1	25.00
88	.010	.719	3	104.6	12079.9	12184.5	1.000	61.4	1715.2	1694.7	36.4	.8	11.1	.0215	.406	.407	2	25.00
88	.010	.719	3	104.6	12079.9	12184.5	1.000	61.4	1715.2	1694.7	36.4	.8	11.1	.0215	.407	.407	3	25.00
88	.010	.719	3	104.6	12080.0	12184.6	1.000	61.4	1715.2	1694.7	36.4	.8	11.1	.0215	.407	.407	4	25.00
88	.010	.719	3	104.6	12080.1	12184.7	1.000	61.4	1715.2	1694.7	36.4	.8	11.1	.0215	.407	.407	5	25.00
89	.010	.729	3	34.7	12130.6	12165.3	1.000	62.2	1715.0	1694.7	37.2	.8	11.1	.0215	.407	.408	0	25.00
89	.010	.729	3	35.0	12130.7	12165.7	1.000	62.2	1715.0	1694.7	37.2	.8	11.0	.0215	.408	.408	1	25.00
89	.010	.729	3	34.8	12130.8	12165.6	1.000	62.2	1715.0	1694.7	37.2	.8	11.0	.0215	.408	.409	2	25.00
89	.010	.729	3	34.8	12130.9	12165.7	1.000	62.2	1715.0	1694.7	37.2	.8	11.0	.0215	.409	.409	3	25.00
89	.010	.729	3	34.8	12131.0	12165.8	1.000	62.2	1715.0	1694.7	37.2	.8	11.0	.0215	.409	.408	4	25.00
89	.010	.729	3	34.8	12130.5	12165.3	1.000	62.2	1715.0	1694.7	37.2	.8	11.0	.0215	.408	.408	5	25.00
90	.010	.739	3	.0	12171.2	12171.2	1.000	63.1	1714.8	1694.7	38.1	.8	11.0	.0214	.408	.410	0	25.00
90	.010	.739	3	.0	12171.9	12171.9	1.000	63.1	1714.8	1694.7	38.1	.8	10.9	.0214	.410	.409	1	25.00
90	.010	.739	3	.0	12171.5	12171.5	1.000	63.1	1714.8	1694.7	38.1	.8	10.8	.0214	.409	.410	2	25.00
90	.010	.739	3	.0	12171.6	12171.6	1.000	63.1	1714.8	1694.7	38.1	.8	10.8	.0214	.410	.410	3	25.00
90	.010	.739	3	.0	12171.6	12171.6	1.000	63.1	1714.8	1694.7	38.1	.8	10.9	.0214	.410	.410	4	25.00

90	.010	.739	3	.0	12171.7	12171.7	1.000	63.1	1714.8	1694.7	38.1	.8	10.9	.0214	.410	.410	5	25.00
91	.010	.749	3	.0	12201.8	12201.8	1.000	63.9	1714.6	1694.7	38.9	.8	10.9	.0214	.410	.411	0	25.00
91	.010	.749	3	.0	12202.0	12202.0	1.000	63.9	1714.6	1694.7	38.9	.8	10.7	.0214	.411	.411	1	25.00
91	.010	.749	3	.0	12202.1	12202.1	1.000	63.9	1714.6	1694.7	38.9	.8	10.7	.0214	.411	.410	2	25.00
91	.010	.749	3	.0	12201.6	12201.6	1.000	63.9	1714.6	1694.7	38.9	.8	10.7	.0214	.410	.410	3	25.00
91	.010	.749	3	.0	12201.7	12201.7	1.000	63.9	1714.6	1694.7	38.9	.8	10.7	.0214	.410	.411	4	25.00
91	.010	.749	3	.0	12201.8	12201.8	1.000	63.9	1714.6	1694.7	38.9	.8	10.7	.0214	.411	.411	5	25.00
92	.010	.759	3	.0	12219.3	12219.3	1.000	64.7	1714.4	1694.7	39.7	.8	10.7	.0214	.411	.411	0	25.00
92	.010	.759	3	.0	12219.5	12219.5	1.000	64.7	1714.4	1694.7	39.7	.8	10.6	.0214	.411	.412	1	25.00
92	.010	.759	3	.0	12219.6	12219.6	1.000	64.7	1714.4	1694.7	39.7	.8	10.6	.0214	.412	.411	2	25.00
92	.010	.759	3	.0	12219.2	12219.2	1.000	64.7	1714.4	1694.7	39.7	.8	10.6	.0214	.411	.411	3	25.00
92	.010	.759	3	.0	12219.3	12219.3	1.000	64.7	1714.4	1694.7	39.7	.8	10.6	.0214	.411	.411	4	25.00
92	.010	.759	3	.0	12219.4	12219.4	1.000	64.7	1714.4	1694.7	39.7	.8	10.6	.0214	.411	.411	5	25.00
93	.010	.769	3	.0	12223.6	12223.6	1.000	65.5	1714.2	1694.7	40.5	.8	10.6	.0214	.411	.411	0	25.00
93	.010	.769	3	.0	12223.5	12223.5	1.000	65.5	1714.2	1694.7	40.5	.8	10.4	.0214	.411	.411	1	25.00
93	.010	.769	3	.0	12223.6	12223.6	1.000	65.5	1714.2	1694.7	40.5	.8	10.4	.0214	.411	.411	2	25.00
93	.010	.769	3	.0	12223.6	12223.6	1.000	65.5	1714.2	1694.7	40.5	.8	10.4	.0214	.411	.411	3	25.00
93	.010	.769	3	.0	12223.7	12223.7	1.000	65.5	1714.2	1694.7	40.5	.8	10.4	.0214	.411	.411	4	25.00
93	.010	.769	3	.0	12223.8	12223.8	1.000	65.5	1714.2	1694.7	40.5	.8	10.4	.0214	.411	.412	5	25.00
94	.010	.779	3	.0	12214.7	12214.7	1.000	66.3	1714.0	1694.7	41.4	.8	10.4	.0214	.411	.411	0	25.00
94	.010	.779	3	.0	12214.6	12214.6	1.000	66.3	1714.0	1694.7	41.4	.8	10.3	.0214	.411	.411	1	25.00
94	.010	.779	3	.0	12214.7	12214.7	1.000	66.3	1714.0	1694.7	41.4	.8	10.3	.0214	.411	.411	2	25.00
94	.010	.779	3	.0	12214.8	12214.8	1.000	66.3	1714.0	1694.7	41.4	.8	10.3	.0214	.411	.411	3	25.00
94	.010	.779	3	.0	12214.4	12214.4	1.000	66.3	1714.0	1694.7	41.4	.8	10.3	.0214	.411	.411	4	25.00
94	.010	.779	3	.0	12214.5	12214.5	1.000	66.3	1714.0	1694.7	41.4	.8	10.3	.0214	.411	.411	5	25.00
95	.010	.789	3	.0	12191.5	12191.5	1.000	67.2	1713.8	1694.7	42.2	.8	10.3	.0214	.411	.410	0	25.00
95	.010	.789	3	.0	12191.4	12191.4	1.000	67.2	1713.8	1694.7	42.2	.8	10.1	.0214	.410	.410	1	25.00
95	.010	.789	3	.0	12191.5	12191.5	1.000	67.2	1713.8	1694.7	42.2	.8	10.1	.0214	.410	.410	2	25.00
95	.010	.789	3	.0	12191.6	12191.6	1.000	67.2	1713.8	1694.7	42.2	.8	10.1	.0214	.410	.411	3	25.00
95	.010	.789	3	.0	12191.7	12191.7	1.000	67.2	1713.8	1694.7	42.2	.8	10.1	.0214	.411	.410	4	25.00
95	.010	.789	3	.0	12191.2	12191.2	1.000	67.2	1713.8	1694.7	42.2	.8	10.1	.0214	.410	.410	5	25.00
96	.010	.799	3	.0	12154.3	12154.3	1.000	68.0	1713.5	1694.7	43.0	.8	10.1	.0214	.410	.409	0	25.00
96	.010	.799	3	.0	12154.4	12154.4	1.000	68.0	1713.5	1694.7	43.0	.8	10.0	.0214	.409	.409	1	25.00
96	.010	.799	3	.0	12154.5	12154.5	1.000	68.0	1713.5	1694.7	43.0	.8	10.0	.0214	.409	.409	2	25.00
96	.010	.799	3	.0	12154.6	12154.6	1.000	68.0	1713.5	1694.7	43.0	.8	10.0	.0214	.409	.408	3	25.00
96	.010	.799	3	.0	12154.2	12154.2	1.000	68.0	1713.5	1694.7	43.0	.8	10.0	.0214	.408	.409	4	25.00
96	.010	.799	3	.0	12154.2	12154.2	1.000	68.0	1713.5	1694.7	43.0	.8	10.0	.0214	.409	.409	5	25.00
97	.010	.809	3	.0	12103.2	12103.2	1.000	68.8	1713.3	1694.7	43.8	.8	10.0	.0214	.409	.407	0	25.00
97	.010	.809	3	.0	12103.0	12103.0	1.000	68.8	1713.3	1694.7	43.8	.8	9.8	.0214	.407	.407	1	25.00
97	.010	.809	3	.0	12103.0	12103.0	1.000	68.8	1713.3	1694.7	43.8	.8	9.8	.0214	.407	.407	2	25.00
97	.010	.809	3	.0	12103.1	12103.1	1.000	68.8	1713.3	1694.7	43.8	.8	9.8	.0214	.407	.407	3	25.00
97	.010	.809	3	.0	12103.2	12103.2	1.000	68.8	1713.3	1694.7	43.8	.8	9.8	.0214	.407	.407	4	25.00
97	.010	.809	3	.0	12103.3	12103.3	1.000	68.8	1713.3	1694.7	43.8	.8	9.8	.0214	.407	.407	5	25.00
98	.010	.819	3	.0	12038.3	12038.3	1.000	69.6	1713.1	1694.7	44.6	.8	9.8	.0214	.407	.405	0	25.00
98	.010	.819	3	.0	12038.2	12038.2	1.000	69.6	1713.1	1694.7	44.6	.8	9.7	.0214	.405	.404	1	25.00
98	.010	.819	3	.0	12037.9	12037.9	1.000	69.6	1713.1	1694.7	44.6	.8	9.7	.0214	.404	.404	2	25.00
98	.010	.819	3	.0	12038.0	12038.0	1.000	69.6	1713.1	1694.7	44.6	.8	9.7	.0214	.404	.404	3	25.00
98	.010	.819	3	.0	12038.1	12038.1	1.000	69.6	1713.1	1694.7	44.6	.8	9.7	.0214	.404	.405	4	25.00
98	.010	.819	3	.0	12038.1	12038.1	1.000	69.6	1713.1	1694.7	44.6	.8	9.7	.0214	.405	.405	5	25.00
99	.010	.829	3	.0	11958.6	11958.6	1.000	70.4	1712.8	1694.7	45.4	.8	9.7	.0213	.405	.402	0	25.00
99	.010	.829	3	.0	11958.8	11958.8	1.000	70.4	1712.8	1694.7	45.4	.8	9.5	.0213	.402	.401	1	25.00
99	.010	.829	3	.0	11958.4	11958.4	1.000	70.4	1712.8	1694.7	45.4	.8	9.5	.0213	.401	.402	2	25.00
99	.010	.829	3	.0	11958.5	11958.5	1.000	70.4	1712.8	1694.7	45.4	.8	9.5	.0213	.402	.402	3	25.00
99	.010	.829	3	.0	11958.6	11958.6	1.000	70.4	1712.8	1694.7	45.4	.8	9.5	.0213	.402	.402	4	25.00
99	.010	.829	3	.0	11958.7	11958.7	1.000	70.4	1712.8	1694.7	45.4	.8	9.5	.0213	.402	.402	5	25.00
100	.010	.839	3	.0	11864.9	11864.9	1.000	71.2	1712.6	1694.7	46.2	.8	9.5	.0213	.402	.398	0	25.00

Step I	Time Step (hr) DTH	Elpse Time (hr) T	Fail Code KG	Spillway Outflow (cfs) QTS	Breach Outflow (cfs) QB	Total Outflow (cfs) QTOT	Sbmrg Crctn Factr SUB	Brech Top Width (ft) BT	Rsrvor W. S. Elev. (ft - MSL) HY	Breach Bottom Elev. (ft - MSL) HC	Brech Bottm Width (ft) BO	Breach Width Incres (ft) PPP	Breach Flow Depth (ft) HP	Brech Manig (n) CNN	Estmte Erosin Depth Incrse (ft) DH	Comput Erosin Depth Incrse (ft) DHH	Itrtn Count KIT	Brech Vrtcl Side Angle (deg) ALG
100	.010	.839	3	.0	11864.9	11864.9	1.000	71.2	1712.6	1694.7	46.2	.8	9.4	.0213	.398	.398	1	25.00
100	.010	.839	3	.0	11865.0	11865.0	1.000	71.2	1712.6	1694.7	46.2	.8	9.4	.0213	.398	.399	2	25.00
100	.010	.839	3	.0	11865.0	11865.0	1.000	71.2	1712.6	1694.7	46.2	.8	9.4	.0213	.399	.399	3	25.00
100	.010	.839	3	.0	11865.1	11865.1	1.000	71.2	1712.6	1694.7	46.2	.8	9.4	.0213	.399	.398	4	25.00
100	.010	.839	3	.0	11864.8	11864.8	1.000	71.2	1712.6	1694.7	46.2	.8	9.4	.0213	.398	.398	5	25.00
101	.010	.849	3	.0	11756.4	11756.4	1.000	72.0	1712.3	1694.7	47.0	.8	9.4	.0213	.398	.394	0	25.00
101	.010	.849	3	.0	11756.6	11756.6	1.000	72.0	1712.3	1694.7	47.0	.8	9.2	.0213	.394	.394	1	25.00
101	.010	.849	3	.0	11756.7	11756.7	1.000	72.0	1712.3	1694.7	47.0	.8	9.2	.0213	.394	.395	2	25.00
101	.010	.849	3	.0	11756.7	11756.7	1.000	72.0	1712.3	1694.7	47.0	.8	9.2	.0213	.395	.395	3	25.00
101	.010	.849	3	.0	11756.8	11756.8	1.000	72.0	1712.3	1694.7	47.0	.8	9.2	.0213	.395	.395	4	25.00
101	.010	.849	3	.0	11756.9	11756.9	1.000	72.0	1712.3	1694.7	47.0	.8	9.2	.0213	.395	.395	5	25.00

Slump Counter (KSLUMP)	2
Depth of Vertical Cut when Slump Occurs (ft, HCK)	22.88
Delay in Erosion as Slump Material is Transported (hr, DELT)	.08
Total Change in Side Angle due to Slump Failure (degree, DEL)	13.00

Step I	Time Step (hr) DTH	Elpse Time (hr) T	Fail Code KG	Spillway Outflow (cfs) QTS	Breach Outflow (cfs) QB	Total Outflow (cfs) QTOT	Sbmrg Crctn Factr SUB	Brech Top Width (ft) BT	Rsrvor W. S. Elev. (ft - MSL) HY	Breach Bottom Elev. (ft - MSL) HC	Brech Bottm Width (ft) BO	Breach Width Incres (ft) PPP	Breach Flow Depth (ft) HP	Brech Manig (n) CNN	Estmte Erosin Depth Incrse (ft) DH	Comput Erosin Depth Incrse (ft) DHH	Itrtn Count KIT	Brech Vrtcl Side Angle (deg) ALG
102	.010	.859	3	.0	11659.3	11659.3	1.000	75.8	1712.0	1694.7	47.0	.0	9.0	.0213	.000	.000	0	28.25
103	.010	.869	3	.0	11450.9	11450.9	1.000	77.8	1711.7	1694.7	47.0	.0	9.1	.0213	.000	.000	0	29.88
104	.010	.879	3	.0	11239.2	11239.2	1.000	79.8	1711.5	1694.7	47.0	.0	8.9	.0213	.000	.000	0	31.50
105	.010	.889	3	.0	11029.7	11029.7	1.000	82.0	1711.2	1694.7	47.0	.0	8.8	.0212	.000	.000	0	33.13
106	.010	.899	3	.0	10822.7	10822.7	1.000	84.2	1710.9	1694.7	47.0	.0	8.6	.0212	.000	.000	0	34.75
107	.010	.909	3	.0	10618.8	10618.8	1.000	86.5	1710.6	1694.7	47.0	.0	8.5	.0212	.000	.000	0	36.38
108	.010	.919	3	.0	10418.3	10418.3	1.000	88.9	1710.3	1694.7	47.0	.0	8.3	.0212	.000	.000	0	38.00
109	.010	.929	3	.0	10125.4	10125.4	1.000	88.9	1710.1	1694.7	47.0	.0	8.2	.0212	.000	.000	0	38.00
110	.010	.939	3	.0	9844.3	9844.3	1.000	88.9	1709.8	1694.7	47.0	.0	8.1	.0212	.000	.286	0	38.00
110	.010	.939	3	.0	9952.7	9952.7	1.000	89.5	1709.8	1694.7	47.6	.6	7.9	.0212	.286	.289	1	38.00
110	.010	.939	3	.0	9951.3	9951.3	1.000	89.5	1709.8	1694.7	47.6	.6	7.9	.0212	.289	.289	2	38.00
110	.010	.939	3	.0	9951.4	9951.4	1.000	89.5	1709.8	1694.7	47.6	.6	7.9	.0212	.289	.289	3	38.00
110	.010	.939	3	.0	9951.4	9951.4	1.000	89.5	1709.8	1694.7	47.6	.6	7.9	.0212	.289	.290	4	38.00
110	.010	.939	3	.0	9951.5	9951.5	1.000	89.5	1709.8	1694.7	47.6	.6	7.9	.0212	.290	.289	5	38.00
111	.010	.949	3	.0	9783.9	9783.9	1.000	90.0	1709.6	1694.7	48.2	.6	7.9	.0212	.290	.284	0	38.00
111	.010	.949	3	.0	9785.8	9785.8	1.000	90.0	1709.6	1694.7	48.2	.6	7.8	.0212	.284	.284	1	38.00
111	.010	.949	3	.0	9785.9	9785.9	1.000	90.0	1709.6	1694.7	48.2	.6	7.8	.0212	.284	.284	2	38.00
111	.010	.949	3	.0	9785.9	9785.9	1.000	90.0	1709.6	1694.7	48.2	.6	7.8	.0212	.284	.284	3	38.00
111	.010	.949	3	.0	9786.0	9786.0	1.000	90.0	1709.6	1694.7	48.2	.6	7.8	.0212	.284	.285	4	38.00
111	.010	.949	3	.0	9786.0	9786.0	1.000	90.0	1709.6	1694.7	48.2	.6	7.8	.0212	.285	.284	5	38.00
112	.010	.959	3	.0	9617.4	9617.4	1.000	90.6	1709.3	1694.7	48.7	.6	7.8	.0211	.285	.279	0	38.00
112	.010	.959	3	.0	9619.7	9619.7	1.000	90.6	1709.3	1694.7	48.7	.6	7.6	.0211	.279	.279	1	38.00
112	.010	.959	3	.0	9619.7	9619.7	1.000	90.6	1709.3	1694.7	48.7	.6	7.6	.0211	.279	.279	2	38.00
112	.010	.959	3	.0	9619.7	9619.7	1.000	90.6	1709.3	1694.7	48.7	.6	7.7	.0211	.279	.280	3	38.00
112	.010	.959	3	.0	9619.8	9619.8	1.000	90.6	1709.3	1694.7	48.7	.6	7.7	.0211	.280	.280	4	38.00
112	.010	.959	3	.0	9619.8	9619.8	1.000	90.6	1709.3	1694.7	48.7	.6	7.7	.0211	.280	.279	5	38.00
113	.010	.969	3	.0	9450.8	9450.8	1.000	91.1	1709.1	1694.7	49.3	.6	7.6	.0211	.280	.274	0	38.00
113	.010	.969	3	.0	9453.2	9453.2	1.000	91.1	1709.1	1694.7	49.3	.5	7.5	.0211	.274	.274	1	38.00
113	.010	.969	3	.0	9453.2	9453.2	1.000	91.1	1709.1	1694.7	49.3	.5	7.5	.0211	.274	.274	2	38.00
113	.010	.969	3	.0	9453.3	9453.3	1.000	91.1	1709.1	1694.7	49.3	.5	7.5	.0211	.274	.275	3	38.00
113	.010	.969	3	.0	9453.3	9453.3	1.000	91.1	1709.1	1694.7	49.3	.5	7.5	.0211	.275	.275	4	38.00
113	.010	.969	3	.0	9453.3	9453.3	1.000	91.1	1709.1	1694.7	49.3	.5	7.5	.0211	.275	.274	5	38.00
114	.010	.979	3	.0	9284.1	9284.1	1.000	91.7	1708.9	1694.7	49.8	.5	7.5	.0211	.275	.269	0	38.00
114	.010	.979	3	.0	9286.7	9286.7	1.000	91.7	1708.9	1694.7	49.8	.5	7.4	.0211	.269	.269	1	38.00
114	.010	.979	3	.0	9286.7	9286.7	1.000	91.7	1708.9	1694.7	49.8	.5	7.4	.0211	.269	.269	2	38.00
114	.010	.979	3	.0	9286.8	9286.8	1.000	91.7	1708.9	1694.7	49.8	.5	7.4	.0211	.269	.270	3	38.00
114	.010	.979	3	.0	9286.8	9286.8	1.000	91.7	1708.9	1694.7	49.8	.5	7.4	.0211	.270	.270	4	38.00
114	.010	.979	3	.0	9286.8	9286.8	1.000	91.7	1708.9	1694.7	49.8	.5	7.4	.0211	.270	.269	5	38.00
115	.010	.989	3	.0	9117.9	9117.9	1.000	92.2	1708.6	1694.7	50.3	.5	7.4	.0211	.270	.264	0	38.00
115	.010	.989	3	.0	9120.6	9120.6	1.000	92.2	1708.6	1694.7	50.3	.5	7.3	.0211	.264	.264	1	38.00
115	.010	.989	3	.0	9120.6	9120.6	1.000	92.2	1708.6	1694.7	50.3	.5	7.3	.0211	.264	.265	2	38.00
115	.010	.989	3	.0	9120.7	9120.7	1.000	92.2	1708.6	1694.7	50.3	.5	7.3	.0211	.265	.265	3	38.00
115	.010	.989	3	.0	9120.7	9120.7	1.000	92.2	1708.6	1694.7	50.3	.5	7.3	.0211	.265	.264	4	38.00
115	.010	.989	3	.0	9120.5	9120.5	1.000	92.2	1708.6	1694.7	50.3	.5	7.2	.0211	.264	.264	5	38.00
116	.010	.999	3	.0	8952.1	8952.1	1.000	92.7	1708.4	1694.7	50.9	.5	7.2	.0211	.264	.259	0	38.00
116	.010	.999	3	.0	8955.4	8955.4	1.000	92.7	1708.4	1694.7	50.8	.5	7.1	.0211	.259	.259	1	38.00
116	.010	.999	3	.0	8955.3	8955.3	1.000	92.7	1708.4	1694.7	50.8	.5	7.1	.0211	.259	.260	2	38.00
116	.010	.999	3	.0	8955.3	8955.3	1.000	92.7	1708.4	1694.7	50.8	.5	7.1	.0211	.260	.260	3	38.00
116	.010	.999	3	.0	8955.4	8955.4	1.000	92.7	1708.4	1694.7	50.8	.5	7.1	.0211	.260	.259	4	38.00
116	.010	.999	3	.0	8955.2	8955.2	1.000	92.7	1708.4	1694.7	50.8	.5	7.1	.0211	.259	.259	5	38.00
117	.010	1.009	3	.0	8788.1	8788.1	1.000	93.2	1708.2	1694.7	51.4	.5	7.1	.0211	.259	.254	0	38.00
117	.010	1.009	3	.0	8791.4	8791.4	1.000	93.2	1708.2	1694.7	51.4	.5	7.0	.0211	.254	.255	1	38.00
117	.010	1.009	3	.0	8791.4	8791.4	1.000	93.2	1708.2	1694.7	51.4	.5	7.0	.0211	.255	.255	2	38.00
117	.010	1.009	3	.0	8791.4	8791.4	1.000	93.2	1708.2	1694.7	51.4	.5	7.0	.0211	.255	.255	3	38.00
117	.010	1.009	3	.0	8791.5	8791.5	1.000	93.2	1708.2	1694.7	51.4	.5	7.0	.0211	.255	.255	4	38.00
117	.010	1.009	3	.0	8791.5	8791.5	1.000	93.2	1708.2	1694.7	51.4	.5	7.0	.0211	.255	.254	5	38.00
118	.010	1.019	3	.0	8626.2	8626.2	1.000	93.7	1708.0	1694.7	51.9	.5	7.0	.0211	.255	.250	0	38.00
118	.010	1.019	3	.0	8629.4	8629.4	1.000	93.7	1708.0	1694.7	51.9	.5	6.9	.0211	.250	.250	1	38.00
118	.010	1.019	3	.0	8629.4	8629.4	1.000	93.7	1708.0	1694.7	51.9	.5	6.9	.0211	.250	.250	2	38.00

118	.010	1.019	3	.0	8629.4	8629.4	1.000	93.7	1708.0	1694.7	51.9	.5	6.9	.0211	.250	.250	3 38.00
118	.010	1.019	3	.0	8629.5	8629.5	1.000	93.7	1708.0	1694.7	51.9	.5	6.9	.0211	.250	.250	4 38.00
118	.010	1.019	3	.0	8629.5	8629.5	1.000	93.7	1708.0	1694.7	51.9	.5	6.9	.0211	.250	.249	5 38.00
119	.010	1.029	3	.0	8466.1	8466.1	1.000	94.2	1707.7	1694.7	52.4	.5	6.9	.0210	.250	.245	0 38.00
119	.010	1.029	3	.0	8469.5	8469.5	1.000	94.2	1707.7	1694.7	52.3	.5	6.8	.0210	.245	.244	1 38.00
119	.010	1.029	3	.0	8469.4	8469.4	1.000	94.2	1707.7	1694.7	52.3	.5	6.8	.0210	.244	.245	2 38.00
119	.010	1.029	3	.0	8469.7	8469.7	1.000	94.2	1707.7	1694.7	52.3	.5	6.8	.0210	.245	.245	3 38.00
119	.010	1.029	3	.0	8469.7	8469.7	1.000	94.2	1707.7	1694.7	52.3	.5	6.8	.0210	.245	.245	4 38.00
119	.010	1.029	3	.0	8469.6	8469.6	1.000	94.2	1707.7	1694.7	52.3	.5	6.8	.0210	.245	.245	5 38.00
120	.010	1.039	3	.0	8308.5	8308.5	1.000	94.7	1707.5	1694.7	52.8	.5	6.8	.0210	.245	.240	0 38.00
120	.010	1.039	3	.0	8311.9	8311.9	1.000	94.7	1707.5	1694.7	52.8	.5	6.6	.0210	.240	.241	1 38.00
120	.010	1.039	3	.0	8312.2	8312.2	1.000	94.7	1707.5	1694.7	52.8	.5	6.7	.0210	.241	.241	2 38.00
120	.010	1.039	3	.0	8312.1	8312.1	1.000	94.7	1707.5	1694.7	52.8	.5	6.6	.0210	.241	.240	3 38.00
120	.010	1.039	3	.0	8312.1	8312.1	1.000	94.7	1707.5	1694.7	52.8	.5	6.6	.0210	.240	.240	4 38.00
120	.010	1.039	3	.0	8312.0	8312.0	1.000	94.7	1707.5	1694.7	52.8	.5	6.6	.0210	.240	.240	5 38.00
121	.010	1.049	3	.0	8153.4	8153.4	1.000	95.2	1707.3	1694.7	53.3	.5	6.6	.0210	.240	.235	0 38.00
121	.010	1.049	3	.0	8157.1	8157.1	1.000	95.2	1707.3	1694.7	53.3	.5	6.5	.0210	.235	.236	1 38.00
121	.010	1.049	3	.0	8157.3	8157.3	1.000	95.2	1707.3	1694.7	53.3	.5	6.5	.0210	.236	.236	2 38.00
121	.010	1.049	3	.0	8157.2	8157.2	1.000	95.2	1707.3	1694.7	53.3	.5	6.5	.0210	.236	.236	3 38.00
121	.010	1.049	3	.0	8157.2	8157.2	1.000	95.2	1707.3	1694.7	53.3	.5	6.5	.0210	.236	.235	4 38.00
121	.010	1.049	3	.0	8157.1	8157.1	1.000	95.2	1707.3	1694.7	53.3	.5	6.5	.0210	.235	.235	5 38.00
122	.010	1.059	3	.0	8001.5	8001.5	1.000	95.6	1707.1	1694.7	53.8	.5	6.5	.0210	.235	.231	0 38.00
122	.010	1.059	3	.0	8005.6	8005.6	1.000	95.6	1707.1	1694.7	53.8	.5	6.4	.0210	.231	.231	1 38.00
122	.010	1.059	3	.0	8005.5	8005.5	1.000	95.6	1707.1	1694.7	53.8	.5	6.4	.0210	.231	.231	2 38.00
122	.010	1.059	3	.0	8005.4	8005.4	1.000	95.6	1707.1	1694.7	53.8	.5	6.4	.0210	.231	.231	3 38.00
122	.010	1.059	3	.0	8005.4	8005.4	1.000	95.6	1707.1	1694.7	53.8	.5	6.4	.0210	.231	.231	4 38.00
122	.010	1.059	3	.0	8005.3	8005.3	1.000	95.6	1707.1	1694.7	53.8	.5	6.4	.0210	.231	.232	5 38.00
123	.010	1.069	3	.0	7852.7	7852.7	1.000	96.1	1706.9	1694.7	54.2	.5	6.4	.0210	.231	.227	0 38.00
123	.010	1.069	3	.0	7856.9	7856.9	1.000	96.1	1706.9	1694.7	54.2	.5	6.3	.0210	.227	.226	1 38.00
123	.010	1.069	3	.0	7856.8	7856.8	1.000	96.1	1706.9	1694.7	54.2	.5	6.3	.0210	.226	.226	2 38.00
123	.010	1.069	3	.0	7856.8	7856.8	1.000	96.1	1706.9	1694.7	54.2	.5	6.3	.0210	.226	.227	3 38.00
123	.010	1.069	3	.0	7857.0	7857.0	1.000	96.1	1706.9	1694.7	54.2	.5	6.3	.0210	.227	.227	4 38.00
123	.010	1.069	3	.0	7857.0	7857.0	1.000	96.1	1706.9	1694.7	54.2	.5	6.3	.0210	.227	.227	5 38.00
124	.010	1.079	3	.0	7708.0	7708.0	1.000	96.5	1706.7	1694.7	54.7	.5	6.3	.0210	.227	.222	0 38.00
124	.010	1.079	3	.0	7711.9	7711.9	1.000	96.5	1706.7	1694.7	54.7	.4	6.2	.0210	.222	.223	1 38.00
124	.010	1.079	3	.0	7712.0	7712.0	1.000	96.5	1706.7	1694.7	54.7	.4	6.2	.0210	.223	.223	2 38.00
124	.010	1.079	3	.0	7712.0	7712.0	1.000	96.5	1706.7	1694.7	54.7	.4	6.2	.0210	.223	.222	3 38.00
124	.010	1.079	3	.0	7711.9	7711.9	1.000	96.5	1706.7	1694.7	54.7	.4	6.2	.0210	.222	.222	4 38.00
124	.010	1.079	3	.0	7711.9	7711.9	1.000	96.5	1706.7	1694.7	54.7	.4	6.2	.0210	.222	.222	5 38.00
125	.010	1.089	3	.0	7566.4	7566.4	1.000	97.0	1706.5	1694.7	55.1	.4	6.2	.0209	.222	.218	0 38.00
125	.010	1.089	3	.0	7570.7	7570.7	1.000	97.0	1706.5	1694.7	55.1	.4	6.1	.0209	.218	.218	1 38.00
125	.010	1.089	3	.0	7570.7	7570.7	1.000	97.0	1706.5	1694.7	55.1	.4	6.1	.0209	.218	.218	2 38.00
125	.010	1.089	3	.0	7570.6	7570.6	1.000	97.0	1706.5	1694.7	55.1	.4	6.1	.0209	.218	.218	3 38.00
125	.010	1.089	3	.0	7570.6	7570.6	1.000	97.0	1706.5	1694.7	55.1	.4	6.1	.0209	.218	.218	4 38.00
125	.010	1.089	3	.0	7570.5	7570.5	1.000	97.0	1706.5	1694.7	55.1	.4	6.1	.0209	.218	.219	5 38.00
126	.010	1.099	3	.0	7428.6	7428.6	1.000	97.4	1706.3	1694.7	55.5	.4	6.1	.0209	.218	.214	0 38.00
126	.010	1.099	3	.0	7433.1	7433.1	1.000	97.4	1706.3	1694.7	55.5	.4	6.0	.0209	.214	.213	1 38.00
126	.010	1.099	3	.0	7432.9	7432.9	1.000	97.4	1706.3	1694.7	55.5	.4	6.0	.0209	.213	.214	2 38.00
126	.010	1.099	3	.0	7433.1	7433.1	1.000	97.4	1706.3	1694.7	55.5	.4	6.0	.0209	.214	.214	3 38.00
126	.010	1.099	3	.0	7433.1	7433.1	1.000	97.4	1706.3	1694.7	55.5	.4	6.0	.0209	.214	.214	4 38.00
126	.010	1.099	3	.0	7433.0	7433.0	1.000	97.4	1706.3	1694.7	55.5	.4	6.0	.0209	.214	.214	5 38.00
127	.010	1.109	3	.0	7295.2	7295.2	1.000	97.8	1706.2	1694.7	55.9	.4	6.0	.0209	.214	.210	0 38.00
127	.010	1.109	3	.0	7299.6	7299.6	1.000	97.8	1706.2	1694.7	55.9	.4	5.9	.0209	.210	.210	1 38.00
127	.010	1.109	3	.0	7299.5	7299.5	1.000	97.8	1706.2	1694.7	55.9	.4	5.9	.0209	.210	.210	2 38.00
127	.010	1.109	3	.0	7299.4	7299.4	1.000	97.8	1706.2	1694.7	55.9	.4	5.9	.0209	.210	.210	3 38.00
127	.010	1.109	3	.0	7299.4	7299.4	1.000	97.8	1706.2	1694.7	55.9	.4	5.9	.0209	.210	.210	4 38.00
127	.010	1.109	3	.0	7299.6	7299.6	1.000	97.8	1706.2	1694.7	55.9	.4	5.9	.0209	.210	.210	5 38.00
128	.010	1.119	3	.0	7165.7	7165.7	1.000	98.2	1706.0	1694.7	56.4	.4	5.9	.0209	.210	.206	0 38.00
128	.010	1.119	3	.0	7169.9	7169.9	1.000	98.2	1706.0	1694.7	56.4	.4	5.8	.0209	.206	.206	1 38.00
128	.010	1.119	3	.0	7170.1	7170.1	1.000	98.2	1706.0	1694.7	56.4	.4	5.8	.0209	.206	.206	2 38.00
128	.010	1.119	3	.0	7170.0	7170.0	1.000	98.2	1706.0	1694.7	56.4	.4	5.8	.0209	.206	.206	3 38.00
128	.010	1.119	3	.0	7169.9	7169.9	1.000	98.2	1706.0	1694.7	56.4	.4	5.8	.0209	.206	.206	4 38.00
128	.010	1.119	3	.0	7169.9	7169.9	1.000	98.2	1706.0	1694.7	56.4	.4	5.8	.0209	.206	.206	5 38.00
129	.010	1.129	3	.0	7039.8	7039.8	1.000	98.6	1705.8	1694.7	56.8	.4	5.8	.0209	.206	.202	0 38.00
129	.010	1.129	3	.0	7044.4	7044.4	1.000	98.6	1705.8	1694.7	56.8	.4	5.7	.0209	.202	.202	1 38.00
129	.010	1.129	3	.0	7044.3	7044.3	1.000	98.6	1705.8	1694.7	56.8	.4	5.7	.0209	.202	.203	2 38.00
129	.010	1.129	3	.0	7044.4	7044.4	1.000	98.6	1705.8	1694.7	56.8	.4	5.7	.0209	.203	.203	3 38.00
129	.010	1.129	3	.0	7044.4	7044.4	1.000	98.6	1705.8	1694.7	56.8	.4	5.7	.0209	.203	.202	4 38.00
129	.010	1.129	3	.0	7044.4	7044.4	1.000	98.6	1705.8	1694.7	56.8	.4	5.7	.0209	.202	.202	5 38.00
130	.010	1.139	3	.0	6918.3	6918.3	1.000	99.0	1705.7	1694.7	57.2	.4	5.7	.0209	.202	.199	0 38.00
130	.010	1.139	3	.0	6922.9	6922.9	1.000	99.0	1705.7	1694.7	57.2	.4	5.6	.0209	.199	.198	1 38.00
130	.010	1.139	3	.0	6922.7	6922.7	1.000	99.0	1705.7	1694.7	57.2	.4	5.6	.0209	.198	.199	2 38.00
130	.010	1.139	3	.0	6923.0	6923.0	1.000	99.0	1705.7	1694.7	57.2	.4	5.7	.0209	.199	.199	3 38.00
130	.010	1.139	3	.0	6922.8	6922.8	1.000	99.0	1705.7	1694.7	57.2	.4	5.6	.0209	.199	.199	4 38.00
130	.010	1.139	3	.0	6922.8	6922.8	1.000	99.0	1705.7	1694.7	57.2	.4	5.6	.0209	.199	.199	5 38.00
131	.010	1.149	3	.0	6800.8	6800.8	1.000	99.4	1705.5	1694.7	57.6	.4	5.6	.0209	.199	.195	0 38.00
131	.010	1.149	3	.0	6805.4	6805.4	1.000	99.4	1705.5	1694.7	57.5	.4	5.6	.0209	.195	.195	1 38.00
131	.010	1.149	3	.0	6805.2	6805.2	1.000	99.4	1705.5	1694.7	57.5	.4	5.6	.0209	.195	.195	2 38.00
131	.010	1.149	3	.0	6805.2	6805.2	1.000	99.4	1705.5	1694.7	57.5	.4	5.6	.0209	.195	.196	3 38.00
131	.010	1.149	3	.0	6805.3	6805.3	1.000	99.4	1705.5	1694.7	57.5	.4	5.6	.0209	.196	.195	4 38.00
131	.010	1.149	3	.0	6805.3	6805.3	1.000	99.4	1705.5	1694.7	57.5	.4	5.6	.0209	.195	.195	5 38.00
132	.010	1.159	3	.0	6687.0	6687.0	1.000	99.8	1705.3	1694.7	57.9	.4	5.6	.0209	.195	.192	0 38.00
132	.010	1.159	3	.0	6691.7	6691.7	1.000	99.8	1705.3	1694.7	57.9	.4	5.5	.0209	.192	.192	1 38.00
132	.010	1.159	3	.0	6691.6	6691.6	1.000	99.8	1705.3	1694.7	57.9	.4	5.5	.0209	.192	.192	2 38.00
132	.010	1.159	3	.0	6691.7	6691.7	1.000	99.8	1705.3	1694.7	57.9	.4	5.5	.0209	.192	.192	3 38.00
132	.010	1.159	3	.0	6691.7	6691.7	1.000	99.8	1705.3	1694.7	57.9	.4	5.5	.0209	.192	.192	4 38.00
132	.010	1.159	3	.0	6691.7	6691.7	1.000	99.8	1705.3	1694.7	57.9	.4	5.5	.0209	.192	.192	5 38.00
133	.010	1.169	3	.0	6577.1	6577.1	1.000	100.2	1705.2	1694.7	58.3	.4	5.5	.0208	.192	.188	0 38.00
133	.010	1.169	3	.0	6581.9	6581.9	1.000	100.2	1705.2	1694.7	58.3	.4	5.4	.0208	.188	.188	1 38.00

133	.010	1.169	3	.0	6581.7	6581.7	1.000	100.2	1705.2	1694.7	58.3	.4	5.4	.0208	.188	.189	2	38.00
133	.010	1.169	3	.0	6581.9	6581.9	1.000	100.2	1705.2	1694.7	58.3	.4	5.4	.0208	.189	.189	3	38.00
133	.010	1.169	3	.0	6581.8	6581.8	1.000	100.2	1705.2	1694.7	58.3	.4	5.4	.0208	.189	.189	4	38.00
133	.010	1.169	3	.0	6581.8	6581.8	1.000	100.2	1705.2	1694.7	58.3	.4	5.4	.0208	.189	.188	5	38.00
134	.010	1.179	3	.0	6470.9	6470.9	1.000	100.6	1705.0	1694.7	58.7	.4	5.4	.0208	.189	.185	0	38.00
134	.010	1.179	3	.0	6475.6	6475.6	1.000	100.6	1705.1	1694.7	58.7	.4	5.3	.0208	.185	.186	1	38.00
134	.010	1.179	3	.0	6475.7	6475.7	1.000	100.6	1705.1	1694.7	58.7	.4	5.3	.0208	.186	.186	2	38.00
134	.010	1.179	3	.0	6475.6	6475.6	1.000	100.6	1705.1	1694.7	58.7	.4	5.3	.0208	.186	.185	3	38.00
134	.010	1.179	3	.0	6475.6	6475.6	1.000	100.6	1705.1	1694.7	58.7	.4	5.3	.0208	.185	.185	4	38.00
134	.010	1.179	3	.0	6475.6	6475.6	1.000	100.6	1705.1	1694.7	58.7	.4	5.3	.0208	.185	.185	5	38.00
135	.010	1.189	3	.0	6368.2	6368.2	1.000	100.9	1704.9	1694.7	59.0	.4	5.3	.0208	.185	.183	0	38.00
135	.010	1.189	3	.0	6373.2	6373.2	1.000	100.9	1704.9	1694.7	59.0	.4	5.3	.0208	.183	.182	1	38.00
135	.010	1.189	3	.0	6373.0	6373.0	1.000	100.9	1704.9	1694.7	59.0	.4	5.3	.0208	.182	.182	2	38.00
135	.010	1.189	3	.0	6373.0	6373.0	1.000	100.9	1704.9	1694.7	59.0	.4	5.2	.0208	.182	.182	3	38.00
135	.010	1.189	3	.0	6372.9	6372.9	1.000	100.9	1704.9	1694.7	59.0	.4	5.2	.0208	.182	.182	4	38.00
135	.010	1.189	3	.0	6372.9	6372.9	1.000	100.9	1704.9	1694.7	59.0	.4	5.2	.0208	.182	.183	5	38.00
136	.010	1.199	3	.0	6268.8	6268.8	1.000	101.3	1704.8	1694.7	59.4	.4	5.3	.0208	.182	.179	0	38.00
136	.010	1.199	3	.0	6273.9	6273.9	1.000	101.3	1704.8	1694.7	59.4	.4	5.2	.0208	.179	.179	1	38.00
136	.010	1.199	3	.0	6273.7	6273.7	1.000	101.3	1704.8	1694.7	59.4	.4	5.2	.0208	.179	.180	2	38.00
136	.010	1.199	3	.0	6273.8	6273.8	1.000	101.3	1704.8	1694.7	59.4	.4	5.2	.0208	.180	.180	3	38.00
136	.010	1.199	3	.0	6273.8	6273.8	1.000	101.3	1704.8	1694.7	59.4	.4	5.2	.0208	.180	.180	4	38.00
136	.010	1.199	3	.0	6273.8	6273.8	1.000	101.3	1704.8	1694.7	59.4	.4	5.2	.0208	.180	.179	5	38.00
137	.010	1.209	3	.0	6172.9	6172.9	1.000	101.6	1704.6	1694.7	59.8	.4	5.2	.0208	.180	.177	0	38.00
137	.010	1.209	3	.0	6178.1	6178.1	1.000	101.6	1704.6	1694.7	59.8	.4	5.1	.0208	.177	.177	1	38.00
137	.010	1.209	3	.0	6177.8	6177.8	1.000	101.6	1704.6	1694.7	59.8	.4	5.1	.0208	.177	.177	2	38.00
137	.010	1.209	3	.0	6177.8	6177.8	1.000	101.6	1704.6	1694.7	59.8	.4	5.1	.0208	.177	.176	3	38.00
137	.010	1.209	3	.0	6177.7	6177.7	1.000	101.6	1704.6	1694.7	59.8	.4	5.1	.0208	.176	.176	4	38.00
137	.010	1.209	3	.0	6177.7	6177.7	1.000	101.6	1704.6	1694.7	59.8	.4	5.1	.0208	.176	.177	5	38.00
138	.010	1.219	3	.0	6079.7	6079.7	1.000	102.0	1704.5	1694.7	60.1	.4	5.1	.0208	.176	.174	0	38.00
138	.010	1.219	3	.0	6085.0	6085.0	1.000	102.0	1704.5	1694.7	60.1	.3	5.0	.0208	.174	.174	1	38.00
138	.010	1.219	3	.0	6084.9	6084.9	1.000	102.0	1704.5	1694.7	60.1	.3	5.1	.0208	.174	.174	2	38.00
138	.010	1.219	3	.0	6084.9	6084.9	1.000	102.0	1704.5	1694.7	60.1	.3	5.1	.0208	.174	.174	3	38.00
138	.010	1.219	3	.0	6084.8	6084.8	1.000	102.0	1704.5	1694.7	60.1	.3	5.0	.0208	.174	.174	4	38.00
138	.010	1.219	3	.0	6084.8	6084.8	1.000	102.0	1704.5	1694.7	60.1	.3	5.0	.0208	.174	.174	5	38.00
139	.010	1.229	3	.0	5989.6	5989.6	1.000	102.3	1704.4	1694.7	60.4	.3	5.0	.0208	.174	.171	0	38.00
139	.010	1.229	3	.0	5994.9	5994.9	1.000	102.3	1704.4	1694.7	60.4	.3	5.0	.0208	.171	.171	1	38.00
139	.010	1.229	3	.0	5994.6	5994.6	1.000	102.3	1704.4	1694.7	60.4	.3	5.0	.0208	.171	.171	2	38.00
139	.010	1.229	3	.0	5994.6	5994.6	1.000	102.3	1704.4	1694.7	60.4	.3	5.0	.0208	.171	.171	3	38.00
139	.010	1.229	3	.0	5994.6	5994.6	1.000	102.3	1704.4	1694.7	60.4	.3	5.0	.0208	.171	.171	4	38.00
139	.010	1.229	3	.0	5994.7	5994.7	1.000	102.3	1704.4	1694.7	60.4	.3	5.0	.0208	.171	.171	5	38.00
140	.010	1.239	3	.0	5902.1	5902.1	1.000	102.7	1704.3	1694.7	60.8	.3	5.0	.0208	.171	.168	0	38.00
140	.010	1.239	3	.0	5907.4	5907.4	1.000	102.7	1704.3	1694.7	60.8	.3	4.9	.0208	.168	.169	1	38.00
140	.010	1.239	3	.0	5907.2	5907.2	1.000	102.7	1704.3	1694.7	60.8	.3	4.9	.0208	.169	.169	2	38.00
140	.010	1.239	3	.0	5907.2	5907.2	1.000	102.7	1704.3	1694.7	60.8	.3	4.9	.0208	.169	.168	3	38.00
140	.010	1.239	3	.0	5907.2	5907.2	1.000	102.7	1704.3	1694.7	60.8	.3	4.9	.0208	.168	.168	4	38.00
140	.010	1.239	3	.0	5907.2	5907.2	1.000	102.7	1704.3	1694.7	60.8	.3	4.9	.0208	.168	.169	5	38.00
141	.010	1.249	3	.0	5816.7	5816.7	1.000	103.0	1704.1	1694.7	61.1	.3	4.9	.0207	.168	.166	0	38.00
141	.010	1.249	3	.0	5822.2	5822.2	1.000	103.0	1704.2	1694.7	61.1	.3	4.9	.0207	.166	.166	1	38.00
141	.010	1.249	3	.0	5822.1	5822.1	1.000	103.0	1704.2	1694.7	61.1	.3	4.9	.0207	.166	.166	2	38.00
141	.010	1.249	3	.0	5822.0	5822.0	1.000	103.0	1704.2	1694.7	61.1	.3	4.9	.0207	.166	.166	3	38.00
141	.010	1.249	3	.0	5822.0	5822.0	1.000	103.0	1704.2	1694.7	61.1	.3	4.9	.0207	.166	.166	4	38.00
141	.010	1.249	3	.0	5822.0	5822.0	1.000	103.0	1704.2	1694.7	61.1	.3	4.9	.0207	.166	.166	5	38.00
142	.010	1.259	3	.0	5733.6	5733.6	1.000	103.3	1704.0	1694.7	61.4	.3	4.9	.0207	.166	.163	0	38.00
142	.010	1.259	3	.0	5739.2	5739.2	1.000	103.3	1704.0	1694.7	61.4	.3	4.8	.0207	.163	.163	1	38.00
142	.010	1.259	3	.0	5739.0	5739.0	1.000	103.3	1704.0	1694.7	61.4	.3	4.8	.0207	.163	.164	2	38.00
142	.010	1.259	3	.0	5739.1	5739.1	1.000	103.3	1704.0	1694.7	61.4	.3	4.8	.0207	.164	.164	3	38.00
142	.010	1.259	3	.0	5739.1	5739.1	1.000	103.3	1704.0	1694.7	61.4	.3	4.8	.0207	.164	.164	4	38.00
142	.010	1.259	3	.0	5739.0	5739.0	1.000	103.3	1704.0	1694.7	61.4	.3	4.8	.0207	.164	.163	5	38.00
143	.010	1.269	3	.0	5652.5	5652.5	1.000	103.6	1703.9	1694.7	61.8	.3	4.8	.0207	.164	.161	0	38.00
143	.010	1.269	3	.0	5658.2	5658.2	1.000	103.6	1703.9	1694.7	61.8	.3	4.7	.0207	.161	.161	1	38.00
143	.010	1.269	3	.0	5657.9	5657.9	1.000	103.6	1703.9	1694.7	61.8	.3	4.7	.0207	.161	.161	2	38.00
143	.010	1.269	3	.0	5658.1	5658.1	1.000	103.6	1703.9	1694.7	61.8	.3	4.7	.0207	.161	.161	3	38.00
143	.010	1.269	3	.0	5658.0	5658.0	1.000	103.6	1703.9	1694.7	61.8	.3	4.7	.0207	.161	.161	4	38.00
143	.010	1.269	3	.0	5658.0	5658.0	1.000	103.6	1703.9	1694.7	61.8	.3	4.7	.0207	.161	.161	5	38.00
144	.010	1.279	3	.0	5573.2	5573.2	1.000	104.0	1703.8	1694.7	62.1	.3	4.7	.0207	.161	.159	0	38.00
144	.010	1.279	3	.0	5579.1	5579.1	1.000	104.0	1703.8	1694.7	62.1	.3	4.7	.0207	.159	.159	1	38.00
144	.010	1.279	3	.0	5578.7	5578.7	1.000	104.0	1703.8	1694.7	62.1	.3	4.7	.0207	.159	.158	2	38.00
144	.010	1.279	3	.0	5578.7	5578.7	1.000	104.0	1703.8	1694.7	62.1	.3	4.7	.0207	.158	.159	3	38.00
144	.010	1.279	3	.0	5578.8	5578.8	1.000	104.0	1703.8	1694.7	62.1	.3	4.7	.0207	.159	.159	4	38.00
144	.010	1.279	3	.0	5578.8	5578.8	1.000	104.0	1703.8	1694.7	62.1	.3	4.7	.0207	.159	.159	5	38.00
145	.010	1.289	3	.0	5495.4	5495.4	1.000	104.3	1703.7	1694.7	62.4	.3	4.7	.0207	.159	.156	0	38.00
145	.010	1.289	3	.0	5501.4	5501.4	1.000	104.3	1703.7	1694.7	62.4	.3	4.6	.0207	.156	.156	1	38.00
145	.010	1.289	3	.0	5501.2	5501.2	1.000	104.3	1703.7	1694.7	62.4	.3	4.6	.0207	.156	.156	2	38.00
145	.010	1.289	3	.0	5501.2	5501.2	1.000	104.3	1703.7	1694.7	62.4	.3	4.6	.0207	.156	.157	3	38.00
145	.010	1.289	3	.0	5501.3	5501.3	1.000	104.3	1703.7	1694.7	62.4	.3	4.6	.0207	.157	.157	4	38.00
145	.010	1.289	3	.0	5501.2	5501.2	1.000	104.3	1703.7	1694.7	62.4	.3	4.6	.0207	.157	.156	5	38.00
146	.010	1.299	3	.0	5418.9	5418.9	1.000	104.6	1703.6	1694.7	62.7	.3	4.6	.0207	.157	.154	0	38.00
146	.010	1.299	3	.0	5425.2	5425.2	1.000	104.6	1703.6	1694.7	62.7	.3	4.6	.0207	.154	.154	1	38.00
146	.010	1.299	3	.0	5425.0	5425.0	1.000	104.6	1703.6	1694.7	62.7	.3	4.6	.0207	.154	.154	2	38.00
146	.010	1.299	3	.0	5425.0	5425.0	1.000	104.6	1703.6	1694.7	62.7	.3	4.6	.0207	.154	.154	3	38.00
146	.010	1.299	3	.0	5424.9	5424.9	1.000	104.6	1703.6	1694.7	62.7	.3	4.6	.0207	.154	.154	4	38.00
146	.010	1.299	3	.0	5424.9	5424.9	1.000	104.6	1703.6	1694.7	62.7	.3	4.6	.0207	.154	.154	5	38.00
147	.010	1.309	3	.0	5343.6	5343.6	1.000	104.9	1703.5	1694.7	63.0	.3	4.6	.0207	.154	.152	0	38.00
147	.010	1.309	3	.0	5350.3	5350.3	1.000	104.9	1703.5	1694.7	63.0	.3	4.5	.0207	.152	.152	1	38.00
147	.010	1.309	3	.0	5350.0	5350.0	1.000	104.9	1703.5	1694.7	63.0	.3	4.5	.0207	.152	.152	2	38.00
147	.010	1.309	3	.0	5350.0	5350.0	1.000	104.9	1703.5	1694.7	63.0	.3	4.5	.0207	.152	.152	3	38.00
147	.010	1.309	3	.0	5350.0	5350.0	1.000	104.9	1703.5	1694.7	63.0	.3	4.5	.0207	.152	.152	4	38.00
147	.010	1.309	3	.0	5349.9	5349.9	1.000	104.9	1703.5	1694.7	63.0	.3	4.5	.0207	.152	.152	5	38.00
148	.010	1.319	3	.0	5269.5	5269.5	1.000	105.2	1703.4	1694.7	63.3	.3	4.5	.0207	.152	.149	0	38.00

148	.010	1.319	3	.0	5276.5	5276.5	1.000	105.2	1703.4	1694.7	63.3	.3	4.5	.0207	.149	.150	1	38.00
148	.010	1.319	3	.0	5276.1	5276.1	1.000	105.2	1703.4	1694.7	63.3	.3	4.5	.0207	.150	.150	2	38.00
148	.010	1.319	3	.0	5276.1	5276.1	1.000	105.2	1703.4	1694.7	63.3	.3	4.5	.0207	.150	.150	3	38.00
148	.010	1.319	3	.0	5276.0	5276.0	1.000	105.2	1703.4	1694.7	63.3	.3	4.5	.0207	.150	.150	4	38.00
148	.010	1.319	3	.0	5276.0	5276.0	1.000	105.2	1703.4	1694.7	63.3	.3	4.5	.0207	.150	.149	5	38.00
149	.010	1.329	3	.0	5196.3	5196.3	1.000	105.5	1703.3	1694.7	63.6	.3	4.5	.0207	.150	.147	0	38.00
149	.010	1.329	3	.0	5203.6	5203.6	1.000	105.5	1703.3	1694.7	63.6	.3	4.4	.0207	.147	.148	1	38.00
149	.010	1.329	3	.0	5203.2	5203.2	1.000	105.5	1703.3	1694.7	63.6	.3	4.4	.0207	.148	.148	2	38.00
149	.010	1.329	3	.0	5203.2	5203.2	1.000	105.5	1703.3	1694.7	63.6	.3	4.4	.0207	.148	.147	3	38.00
149	.010	1.329	3	.0	5203.2	5203.2	1.000	105.5	1703.3	1694.7	63.6	.3	4.4	.0207	.147	.147	4	38.00
149	.010	1.329	3	.0	5203.2	5203.2	1.000	105.5	1703.3	1694.7	63.6	.3	4.4	.0207	.147	.147	5	38.00
150	.010	1.339	3	.0	5123.8	5123.8	1.000	105.8	1703.2	1694.7	63.9	.3	4.4	.0207	.147	.145	0	38.00

Step I	Time Step (hr) DTH	Elpse Time (hr) T	Fail Code KG	Spillway Outflow (cfs) QTS	Breach Outflow (cfs) QB	Total Outflow (cfs) QTOT	Sbmrg Crctn Factr SUB	Brech Top Width (ft) BT	Rsrvor W. S. Elev. (ft - MSL) HY	Breach Bottom Elev. (ft - MSL) HC	Brech Bottm Width (ft) BO	Breach Width Incres (ft) PPP	Breach Flow Depth (ft) HP	Brech Manig (n) CNN	Estmte Erosin Depth Incrse (ft) DH	Comput Erosin Depth Incrse (ft) DHH	Itrtn Count KIT	Brech Vrtcl Side Angle (deg) ALG
150	.010	1.339	3	.0	5131.6	5131.6	1.000	105.8	1703.2	1694.7	63.9	.3	4.4	.0207	.145	.146	1	38.00
150	.010	1.339	3	.0	5131.1	5131.1	1.000	105.8	1703.2	1694.7	63.9	.3	4.4	.0207	.146	.145	2	38.00
150	.010	1.339	3	.0	5131.1	5131.1	1.000	105.8	1703.2	1694.7	63.9	.3	4.4	.0207	.145	.145	3	38.00
150	.010	1.339	3	.0	5131.0	5131.0	1.000	105.8	1703.2	1694.7	63.9	.3	4.4	.0207	.145	.145	4	38.00
150	.010	1.339	3	.0	5131.0	5131.0	1.000	105.8	1703.2	1694.7	63.9	.3	4.4	.0207	.145	.146	5	38.00
151	.010	1.349	3	.0	5052.0	5052.0	1.000	106.1	1703.1	1694.7	64.2	.3	4.4	.0207	.145	.143	0	38.00
151	.010	1.349	3	.0	5060.3	5060.3	1.000	106.1	1703.1	1694.7	64.2	.3	4.3	.0207	.143	.143	1	38.00
151	.010	1.349	3	.0	5059.7	5059.7	1.000	106.1	1703.1	1694.7	64.2	.3	4.3	.0207	.143	.143	2	38.00
151	.010	1.349	3	.0	5059.7	5059.7	1.000	106.1	1703.1	1694.7	64.2	.3	4.3	.0207	.143	.143	3	38.00
151	.010	1.349	3	.0	5059.6	5059.6	1.000	106.1	1703.1	1694.7	64.2	.3	4.3	.0207	.143	.143	4	38.00
151	.010	1.349	3	.0	5059.6	5059.6	1.000	106.1	1703.1	1694.7	64.2	.3	4.3	.0207	.143	.144	5	38.00
152	.010	1.359	3	.0	4980.9	4980.9	1.000	106.3	1703.0	1694.7	64.5	.3	4.3	.0207	.143	.141	0	38.00
152	.010	1.359	3	.0	4989.7	4989.7	1.000	106.3	1703.0	1694.7	64.5	.3	4.3	.0207	.141	.141	1	38.00
152	.010	1.359	3	.0	4988.9	4988.9	1.000	106.3	1703.0	1694.7	64.5	.3	4.3	.0207	.141	.141	2	38.00
152	.010	1.359	3	.0	4989.0	4989.0	1.000	106.3	1703.0	1694.7	64.5	.3	4.3	.0207	.141	.141	3	38.00
152	.010	1.359	3	.0	4989.0	4989.0	1.000	106.3	1703.0	1694.7	64.5	.3	4.3	.0207	.141	.142	4	38.00
152	.010	1.359	3	.0	4989.1	4989.1	1.000	106.3	1703.0	1694.7	64.5	.3	4.3	.0207	.142	.141	5	38.00
153	.010	1.369	3	.0	4910.3	4910.3	1.000	106.6	1702.9	1694.7	64.7	.3	4.3	.0207	.142	.139	0	38.00
153	.010	1.369	3	.0	4919.7	4919.7	1.000	106.6	1702.9	1694.7	64.7	.3	4.2	.0207	.139	.139	1	38.00
153	.010	1.369	3	.0	4918.8	4918.8	1.000	106.6	1702.9	1694.7	64.7	.3	4.2	.0207	.139	.139	2	38.00
153	.010	1.369	3	.0	4918.9	4918.9	1.000	106.6	1702.9	1694.7	64.7	.3	4.2	.0207	.139	.139	3	38.00
153	.010	1.369	3	.0	4919.0	4919.0	1.000	106.6	1702.9	1694.7	64.7	.3	4.2	.0207	.139	.139	4	38.00
153	.010	1.369	3	.0	4919.0	4919.0	1.000	106.6	1702.9	1694.7	64.7	.3	4.2	.0207	.139	.139	5	38.00
154	.010	1.379	3	.0	4840.1	4840.1	1.000	106.9	1702.8	1694.7	65.0	.3	4.2	.0206	.139	.137	0	38.00
154	.010	1.379	3	.0	4850.2	4850.2	1.000	106.9	1702.8	1694.7	65.0	.3	4.2	.0206	.137	.137	1	38.00
154	.010	1.379	3	.0	4849.1	4849.1	1.000	106.9	1702.8	1694.7	65.0	.3	4.2	.0206	.137	.137	2	38.00
154	.010	1.379	3	.0	4849.2	4849.2	1.000	106.9	1702.8	1694.7	65.0	.3	4.2	.0206	.137	.137	3	38.00
154	.010	1.379	3	.0	4849.3	4849.3	1.000	106.9	1702.8	1694.7	65.0	.3	4.2	.0206	.137	.137	4	38.00
154	.010	1.379	3	.0	4849.3	4849.3	1.000	106.9	1702.8	1694.7	65.0	.3	4.2	.0206	.137	.137	5	38.00
155	.010	1.389	3	.0	4770.1	4770.1	1.000	107.2	1702.7	1694.7	65.3	.3	4.2	.0206	.137	.135	0	38.00
155	.010	1.389	3	.0	4781.1	4781.1	1.000	107.2	1702.7	1694.7	65.3	.3	4.1	.0206	.135	.135	1	38.00
155	.010	1.389	3	.0	4779.9	4779.9	1.000	107.2	1702.7	1694.7	65.3	.3	4.1	.0206	.135	.135	2	38.00
155	.010	1.389	3	.0	4780.1	4780.1	1.000	107.2	1702.7	1694.7	65.3	.3	4.1	.0206	.135	.135	3	38.00
155	.010	1.389	3	.0	4780.1	4780.1	1.000	107.2	1702.7	1694.7	65.3	.3	4.1	.0206	.135	.135	4	38.00
155	.010	1.389	3	.0	4780.1	4780.1	1.000	107.2	1702.7	1694.7	65.3	.3	4.1	.0206	.135	.135	5	38.00
156	.010	1.399	3	.0	4700.3	4700.3	1.000	107.4	1702.6	1694.7	65.6	.3	4.1	.0206	.135	.133	0	38.00
156	.010	1.399	3	.0	4712.4	4712.4	1.000	107.4	1702.6	1694.7	65.5	.3	4.1	.0206	.133	.133	1	38.00
156	.010	1.399	3	.0	4711.1	4711.1	1.000	107.4	1702.6	1694.7	65.5	.3	4.1	.0206	.133	.133	2	38.00
156	.010	1.399	3	.0	4711.2	4711.2	1.000	107.4	1702.6	1694.7	65.5	.3	4.1	.0206	.133	.133	3	38.00
156	.010	1.399	3	.0	4711.2	4711.2	1.000	107.4	1702.6	1694.7	65.5	.3	4.1	.0206	.133	.133	4	38.00
156	.010	1.399	3	.0	4711.1	4711.1	1.000	107.4	1702.6	1694.7	65.5	.3	4.1	.0206	.133	.133	5	38.00
157	.010	1.409	3	.0	4630.8	4630.8	1.000	107.7	1702.5	1694.7	65.8	.3	4.1	.0206	.133	.131	0	38.00
157	.010	1.409	3	.0	4644.1	4644.1	1.000	107.7	1702.5	1694.7	65.8	.3	4.0	.0206	.131	.131	1	38.00
157	.010	1.409	3	.0	4642.5	4642.5	1.000	107.7	1702.5	1694.7	65.8	.3	4.0	.0206	.131	.131	2	38.00
157	.010	1.409	3	.0	4642.7	4642.7	1.000	107.7	1702.5	1694.7	65.8	.3	4.0	.0206	.131	.131	3	38.00
157	.010	1.409	3	.0	4642.7	4642.7	1.000	107.7	1702.5	1694.7	65.8	.3	4.0	.0206	.131	.131	4	38.00
157	.010	1.409	3	.0	4642.7	4642.7	1.000	107.7	1702.5	1694.7	65.8	.3	4.0	.0206	.131	.131	5	38.00
158	.010	1.419	3	.0	4561.3	4561.3	1.000	107.9	1702.4	1694.7	66.1	.3	4.0	.0206	.131	.129	0	38.00
158	.010	1.419	3	.0	4576.2	4576.2	1.000	107.9	1702.4	1694.7	66.1	.3	4.0	.0206	.129	.129	1	38.00
158	.010	1.419	3	.0	4574.2	4574.2	1.000	107.9	1702.4	1694.7	66.1	.3	4.0	.0206	.129	.129	2	38.00
158	.010	1.419	3	.0	4574.5	4574.5	1.000	107.9	1702.4	1694.7	66.1	.3	4.0	.0206	.129	.129	3	38.00
158	.010	1.419	3	.0	4574.4	4574.4	1.000	107.9	1702.4	1694.7	66.1	.3	4.0	.0206	.129	.129	4	38.00
158	.010	1.419	3	.0	4574.4	4574.4	1.000	107.9	1702.4	1694.7	66.1	.3	4.0	.0206	.129	.129	5	38.00
159	.010	1.429	3	.0	4491.8	4491.8	1.000	108.2	1702.3	1694.7	66.3	.3	4.0	.0206	.129	.127	0	38.00
159	.010	1.429	3	.0	4508.8	4508.8	1.000	108.2	1702.4	1694.7	66.3	.3	3.9	.0206	.127	.127	1	38.00
159	.010	1.429	3	.0	4506.1	4506.1	1.000	108.2	1702.4	1694.7	66.3	.3	3.9	.0206	.127	.127	2	38.00
159	.010	1.429	3	.0	4506.5	4506.5	1.000	108.2	1702.4	1694.7	66.3	.3	3.9	.0206	.127	.127	3	38.00
159	.010	1.429	3	.0	4506.5	4506.5	1.000	108.2	1702.4	1694.7	66.3	.3	3.9	.0206	.127	.127	4	38.00
159	.010	1.429	3	.0	4506.5	4506.5	1.000	108.2	1702.4	1694.7	66.3	.3	3.9	.0206	.127	.127	5	38.00
160	.010	1.439	3	.0	4422.0	4422.0	1.000	108.5	1702.2	1694.7	66.6	.3	3.9	.0206	.127	.125	0	38.00

160	.010	1.439	3	.0	4441.7	4441.7	1.000	108.4	1702.3	1694.7	66.6	.2	3.9	.0206	.125	.125	1	38.00
160	.010	1.439	3	.0	4438.2	4438.2	1.000	108.4	1702.3	1694.7	66.6	.3	3.9	.0206	.125	.125	2	38.00
160	.010	1.439	3	.0	4438.8	4438.8	1.000	108.4	1702.3	1694.7	66.6	.3	3.9	.0206	.125	.125	3	38.00
160	.010	1.439	3	.0	4438.7	4438.7	1.000	108.4	1702.3	1694.7	66.6	.2	3.9	.0206	.125	.125	4	38.00
160	.010	1.439	3	.0	4438.7	4438.7	1.000	108.4	1702.3	1694.7	66.6	.2	3.9	.0206	.125	.125	5	38.00
161	.010	1.449	3	.0	4351.8	4351.8	1.000	108.7	1702.1	1694.7	66.8	.2	3.9	.0206	.125	.123	0	38.00
161	.010	1.449	3	.0	4375.3	4375.3	1.000	108.7	1702.2	1694.7	66.8	.2	3.8	.0206	.123	.123	1	38.00
161	.010	1.449	3	.0	4370.3	4370.3	1.000	108.7	1702.2	1694.7	66.8	.2	3.9	.0206	.123	.123	2	38.00
161	.010	1.449	3	.0	4371.3	4371.3	1.000	108.7	1702.2	1694.7	66.8	.2	3.9	.0206	.123	.123	3	38.00
161	.010	1.449	3	.0	4371.2	4371.2	1.000	108.7	1702.2	1694.7	66.8	.2	3.8	.0206	.123	.123	4	38.00
161	.010	1.449	3	.0	4371.2	4371.2	1.000	108.7	1702.2	1694.7	66.8	.2	3.8	.0206	.123	.123	5	38.00
162	.010	1.459	3	.0	4280.9	4280.9	1.000	108.9	1702.1	1694.7	67.1	.2	3.8	.0206	.123	.120	0	38.00
162	.010	1.459	3	.0	4309.7	4309.7	1.000	108.9	1702.1	1694.7	67.1	.2	3.8	.0206	.120	.121	1	38.00
162	.010	1.459	3	.0	4302.5	4302.5	1.000	108.9	1702.1	1694.7	67.1	.2	3.8	.0206	.121	.121	2	38.00
162	.010	1.459	3	.0	4304.2	4304.2	1.000	108.9	1702.1	1694.7	67.1	.2	3.8	.0206	.121	.121	3	38.00
162	.010	1.459	3	.0	4303.8	4303.8	1.000	108.9	1702.1	1694.7	67.1	.2	3.8	.0206	.121	.121	4	38.00
162	.010	1.459	3	.0	4303.8	4303.8	1.000	108.9	1702.1	1694.7	67.1	.2	3.8	.0206	.121	.121	5	38.00
163	.010	1.469	3	.0	4210.0	4210.0	1.000	109.2	1702.0	1694.7	67.3	.2	3.8	.0206	.121	.118	0	38.00
163	.010	1.469	3	.0	4248.5	4248.5	1.000	109.2	1702.0	1694.7	67.3	.2	3.7	.0206	.118	.119	1	38.00
163	.010	1.469	3	.0	4233.3	4233.3	1.000	109.2	1702.0	1694.7	67.3	.2	3.8	.0206	.119	.119	2	38.00
163	.010	1.469	3	.0	4239.0	4239.0	1.000	109.2	1702.0	1694.7	67.3	.2	3.8	.0206	.119	.119	3	38.00
163	.010	1.469	3	.0	4236.7	4236.7	1.000	109.2	1702.0	1694.7	67.3	.2	3.8	.0206	.119	.119	4	38.00
163	.010	1.469	3	.0	4237.7	4237.7	1.000	109.2	1702.0	1694.7	67.3	.2	3.8	.0206	.119	.119	5	38.00
164	.010	1.479	3	.0	4152.8	4152.8	1.000	109.4	1701.9	1694.7	67.5	.2	3.8	.0206	.119	.117	0	38.00
164	.010	1.479	3	.0	4188.1	4188.1	1.000	109.4	1701.9	1694.7	67.5	.2	3.7	.0206	.117	.118	1	38.00
164	.010	1.479	3	.0	4173.6	4173.6	1.000	109.4	1701.9	1694.7	67.5	.2	3.7	.0206	.118	.117	2	38.00
164	.010	1.479	3	.0	4179.6	4179.6	1.000	109.4	1701.9	1694.7	67.5	.2	3.7	.0206	.117	.117	3	38.00
164	.010	1.479	3	.0	4177.0	4177.0	1.000	109.4	1701.9	1694.7	67.5	.2	3.7	.0206	.117	.117	4	38.00
164	.010	1.479	3	.0	4178.1	4178.1	1.000	109.4	1701.9	1694.7	67.5	.2	3.7	.0206	.117	.117	5	38.00
165	.010	1.489	3	.0	4101.8	4101.8	1.000	109.6	1701.8	1694.7	67.8	.2	3.7	.0206	.117	.115	0	38.00
165	.010	1.489	3	.0	4133.6	4133.6	1.000	109.6	1701.8	1694.7	67.8	.2	3.7	.0206	.115	.116	1	38.00
165	.010	1.489	3	.0	4120.4	4120.4	1.000	109.6	1701.8	1694.7	67.8	.2	3.7	.0206	.116	.116	2	38.00
165	.010	1.489	3	.0	4125.9	4125.9	1.000	109.6	1701.8	1694.7	67.8	.2	3.7	.0206	.116	.116	3	38.00
165	.010	1.489	3	.0	4123.6	4123.6	1.000	109.6	1701.8	1694.7	67.8	.2	3.7	.0206	.116	.116	4	38.00
165	.010	1.489	3	.0	4124.6	4124.6	1.000	109.6	1701.8	1694.7	67.8	.2	3.7	.0206	.116	.115	5	38.00
166	.010	1.499	3	.0	4046.2	4046.2	1.000	109.9	1701.7	1694.7	68.0	.2	3.7	.0205	.116	.113	0	38.00
166	.010	1.499	3	.0	4079.2	4079.2	1.000	109.9	1701.8	1694.7	68.0	.2	3.6	.0205	.113	.114	1	38.00
166	.010	1.499	3	.0	4065.4	4065.4	1.000	109.9	1701.8	1694.7	68.0	.2	3.7	.0205	.114	.114	2	38.00
166	.010	1.499	3	.0	4071.2	4071.2	1.000	109.9	1701.8	1694.7	68.0	.2	3.6	.0205	.114	.114	3	38.00
166	.010	1.499	3	.0	4068.8	4068.8	1.000	109.9	1701.8	1694.7	68.0	.2	3.6	.0205	.114	.114	4	38.00
166	.010	1.499	3	.0	4069.8	4069.8	1.000	109.9	1701.8	1694.7	68.0	.2	3.6	.0205	.114	.114	5	38.00
167	.010	1.509	3	.0	3988.5	3988.5	1.000	110.1	1701.7	1694.7	68.2	.2	3.6	.0205	.114	.112	0	38.00
167	.010	1.509	3	.0	4023.0	4023.0	1.000	110.1	1701.7	1694.7	68.2	.2	3.6	.0205	.112	.113	1	38.00
167	.010	1.509	3	.0	4008.5	4008.5	1.000	110.1	1701.7	1694.7	68.2	.2	3.6	.0205	.113	.112	2	38.00
167	.010	1.509	3	.0	4014.5	4014.5	1.000	110.1	1701.7	1694.7	68.2	.2	3.6	.0205	.112	.112	3	38.00
167	.010	1.509	3	.0	4012.1	4012.1	1.000	110.1	1701.7	1694.7	68.2	.2	3.6	.0205	.112	.112	4	38.00
167	.010	1.509	3	.0	4013.0	4013.0	1.000	110.1	1701.7	1694.7	68.2	.2	3.6	.0205	.112	.112	5	38.00
168	.010	1.519	3	.0	3931.9	3931.9	1.000	110.3	1701.6	1694.7	68.4	.2	3.6	.0205	.112	.110	0	38.00
168	.010	1.519	3	.0	3966.6	3966.6	1.000	110.3	1701.6	1694.7	68.4	.2	3.5	.0205	.110	.111	1	38.00
168	.010	1.519	3	.0	3951.8	3951.8	1.000	110.3	1701.6	1694.7	68.4	.2	3.6	.0205	.111	.111	2	38.00
168	.010	1.519	3	.0	3958.1	3958.1	1.000	110.3	1701.6	1694.7	68.4	.2	3.6	.0205	.111	.111	3	38.00
168	.010	1.519	3	.0	3955.5	3955.5	1.000	110.3	1701.6	1694.7	68.4	.2	3.6	.0205	.111	.110	4	38.00
168	.010	1.519	3	.0	3956.6	3956.6	1.000	110.3	1701.6	1694.7	68.4	.2	3.6	.0205	.110	.111	5	38.00
169	.010	1.529	3	.0	3876.1	3876.1	1.000	110.5	1701.5	1694.7	68.7	.2	3.6	.0205	.110	.108	0	38.00
169	.010	1.529	3	.0	3910.7	3910.7	1.000	110.5	1701.5	1694.7	68.6	.2	3.5	.0205	.108	.109	1	38.00
169	.010	1.529	3	.0	3895.9	3895.9	1.000	110.5	1701.5	1694.7	68.7	.2	3.5	.0205	.109	.109	2	38.00
169	.010	1.529	3	.0	3902.2	3902.2	1.000	110.5	1701.5	1694.7	68.7	.2	3.5	.0205	.109	.109	3	38.00
169	.010	1.529	3	.0	3899.5	3899.5	1.000	110.5	1701.5	1694.7	68.7	.2	3.5	.0205	.109	.109	4	38.00
169	.010	1.529	3	.0	3900.7	3900.7	1.000	110.5	1701.5	1694.7	68.7	.2	3.5	.0205	.109	.109	5	38.00
170	.010	1.539	3	.0	3819.9	3819.9	1.000	110.7	1701.4	1694.7	68.9	.2	3.5	.0205	.109	.107	0	38.00
170	.010	1.539	3	.0	3855.1	3855.1	1.000	110.7	1701.5	1694.7	68.9	.2	3.5	.0205	.107	.108	1	38.00
170	.010	1.539	3	.0	3839.9	3839.9	1.000	110.7	1701.4	1694.7	68.9	.2	3.5	.0205	.108	.107	2	38.00
170	.010	1.539	3	.0	3846.4	3846.4	1.000	110.7	1701.5	1694.7	68.9	.2	3.5	.0205	.107	.107	3	38.00
170	.010	1.539	3	.0	3843.6	3843.6	1.000	110.7	1701.5	1694.7	68.9	.2	3.5	.0205	.107	.107	4	38.00
170	.010	1.539	3	.0	3844.9	3844.9	1.000	110.7	1701.5	1694.7	68.9	.2	3.5	.0205	.107	.107	5	38.00
171	.010	1.549	3	.0	3763.6	3763.6	1.000	111.0	1701.3	1694.7	69.1	.2	3.5	.0205	.107	.105	0	38.00
171	.010	1.549	3	.0	3799.1	3799.1	1.000	111.0	1701.4	1694.7	69.1	.2	3.4	.0205	.105	.106	1	38.00
171	.010	1.549	3	.0	3783.7	3783.7	1.000	111.0	1701.4	1694.7	69.1	.2	3.5	.0205	.106	.106	2	38.00
171	.010	1.549	3	.0	3790.4	3790.4	1.000	111.0	1701.4	1694.7	69.1	.2	3.5	.0205	.106	.106	3	38.00
171	.010	1.549	3	.0	3787.5	3787.5	1.000	111.0	1701.4	1694.7	69.1	.2	3.4	.0205	.106	.105	4	38.00
171	.010	1.549	3	.0	3788.8	3788.8	1.000	111.0	1701.4	1694.7	69.1	.2	3.4	.0205	.105	.106	5	38.00
172	.010	1.559	3	.0	3707.3	3707.3	1.000	111.2	1701.3	1694.7	69.3	.2	3.5	.0205	.105	.103	0	38.00
172	.010	1.559	3	.0	3743.2	3743.2	1.000	111.2	1701.3	1694.7	69.3	.2	3.4	.0205	.103	.105	1	38.00
172	.010	1.559	3	.0	3727.5	3727.5	1.000	111.2	1701.3	1694.7	69.3	.2	3.4	.0205	.105	.104	2	38.00
172	.010	1.559	3	.0	3734.3	3734.3	1.000	111.2	1701.3	1694.7	69.3	.2	3.4	.0205	.104	.104	3	38.00
172	.010	1.559	3	.0	3731.3	3731.3	1.000	111.2	1701.3	1694.7	69.3	.2	3.4	.0205	.104	.104	4	38.00
172	.010	1.559	3	.0	3732.7	3732.7	1.000	111.2	1701.3	1694.7	69.3	.2	3.4	.0205	.104	.104	5	38.00
173	.010	1.569	3	.0	3651.2	3651.2	1.000	111.4	1701.2	1694.7	69.5	.2	3.4	.0205	.104	.102	0	38.00
173	.010	1.569	3	.0	3687.4	3687.4	1.000	111.4	1701.2	1694.7	69.5	.2	3.4	.0205	.102	.103	1	38.00
173	.010	1.569	3	.0	3671.5	3671.5	1.000	111.4	1701.2	1694.7	69.5	.2	3.4	.0205	.103	.102	2	38.00
173	.010	1.569	3	.0	3678.4	3678.4	1.000	111.4	1701.2	1694.7	69.5	.2	3.4	.0205	.102	.102	3	38.00
173	.010	1.569	3	.0	3675.4	3675.4	1.000	111.4	1701.2	1694.7	69.5	.2	3.4	.0205	.102	.102	4	38.00
173	.010	1.569	3	.0	3676.8	3676.8	1.000	111.4	1701.2	1694.7	69.5	.2	3.4	.0205	.102	.103	5	38.00
174	.010	1.579	3	.0	3594.9	3594.9	1.000	111.6	1701.1	1694.7	69.7	.2	3.4	.0205	.102	.100	0	38.00
174	.010	1.579	3	.0	3631.5	3631.5	1.000	111.6	1701.2	1694.7	69.7	.2	3.3	.0205	.100	.101	1	38.00
174	.010	1.579	3	.0	3615.3	3615.3	1.000	111.6	1701.1	1694.7	69.7	.2	3.3	.0205	.101	.100	2	38.00
174	.010	1.579	3	.0	3622.5	3622.5	1.000	111.6	1701.2	1694.7	69.7	.2	3.3	.0205	.100	.100	3	38.00
174	.010	1.579	3	.0	3619.2	3619.2	1.000	111.6	1701.1	1694.7	69.7	.2	3.3	.0205	.100	.101	4	38.00
174	.010	1.579	3	.0	3620.7	3620.7	1.000	111.6	1701.2	1694.7	69.7	.2	3.3	.0205	.101	.101	5	38.00

175	.010	1.589	3	.0	3538.7	3538.7	1.000	111.8	1701.0	1694.7	69.9	.2	3.3	.0205	.101	.098	0	38.00
175	.010	1.589	3	.0	3575.8	3575.8	1.000	111.8	1701.1	1694.7	69.9	.2	3.3	.0205	.098	.099	1	38.00
175	.010	1.589	3	.0	3559.2	3559.2	1.000	111.8	1701.1	1694.7	69.9	.2	3.3	.0205	.099	.098	2	38.00
175	.010	1.589	3	.0	3566.5	3566.5	1.000	111.8	1701.1	1694.7	69.9	.2	3.3	.0205	.098	.099	3	38.00
175	.010	1.589	3	.0	3563.2	3563.2	1.000	111.8	1701.1	1694.7	69.9	.2	3.3	.0205	.099	.099	4	38.00
175	.010	1.589	3	.0	3564.7	3564.7	1.000	111.8	1701.1	1694.7	69.9	.2	3.3	.0205	.099	.099	5	38.00
176	.010	1.599	3	.0	3482.5	3482.5	1.000	112.0	1701.0	1694.7	70.1	.2	3.3	.0205	.099	.096	0	38.00
176	.010	1.599	3	.0	3519.9	3519.9	1.000	112.0	1701.0	1694.7	70.1	.2	3.2	.0205	.096	.098	1	38.00
176	.010	1.599	3	.0	3503.0	3503.0	1.000	112.0	1701.0	1694.7	70.1	.2	3.3	.0205	.098	.098	2	38.00
176	.010	1.599	3	.0	3510.7	3510.7	1.000	112.0	1701.0	1694.7	70.1	.2	3.3	.0205	.098	.098	3	38.00
176	.010	1.599	3	.0	3507.2	3507.2	1.000	112.0	1701.0	1694.7	70.1	.2	3.3	.0205	.098	.097	4	38.00
176	.010	1.599	3	.0	3508.8	3508.8	1.000	112.0	1701.0	1694.7	70.1	.2	3.3	.0205	.097	.097	5	38.00
177	.010	1.609	3	.0	3426.3	3426.3	1.000	112.2	1700.9	1694.7	70.3	.2	3.3	.0205	.097	.095	0	38.00
177	.010	1.609	3	.0	3464.2	3464.2	1.000	112.1	1700.9	1694.7	70.3	.2	3.2	.0205	.095	.096	1	38.00
177	.010	1.609	3	.0	3446.9	3446.9	1.000	112.2	1700.9	1694.7	70.3	.2	3.2	.0205	.096	.096	2	38.00
177	.010	1.609	3	.0	3454.8	3454.8	1.000	112.2	1700.9	1694.7	70.3	.2	3.2	.0205	.096	.096	3	38.00
177	.010	1.609	3	.0	3451.2	3451.2	1.000	112.2	1700.9	1694.7	70.3	.2	3.2	.0205	.096	.095	4	38.00
177	.010	1.609	3	.0	3452.8	3452.8	1.000	112.2	1700.9	1694.7	70.3	.2	3.2	.0205	.095	.096	5	38.00
178	.010	1.619	3	.0	3370.1	3370.1	1.000	112.3	1700.8	1694.7	70.5	.2	3.2	.0205	.095	.093	0	38.00
178	.010	1.619	3	.0	3408.3	3408.3	1.000	112.3	1700.9	1694.7	70.5	.2	3.2	.0205	.093	.094	1	38.00
178	.010	1.619	3	.0	3390.8	3390.8	1.000	112.3	1700.8	1694.7	70.5	.2	3.2	.0205	.094	.094	2	38.00
178	.010	1.619	3	.0	3398.9	3398.9	1.000	112.3	1700.9	1694.7	70.5	.2	3.2	.0205	.094	.095	3	38.00
178	.010	1.619	3	.0	3395.2	3395.2	1.000	112.3	1700.8	1694.7	70.5	.2	3.2	.0205	.095	.094	4	38.00
178	.010	1.619	3	.0	3396.8	3396.8	1.000	112.3	1700.8	1694.7	70.5	.2	3.2	.0205	.094	.094	5	38.00
179	.010	1.629	3	.0	3314.0	3314.0	1.000	112.5	1700.7	1694.7	70.6	.2	3.2	.0205	.094	.091	0	38.00
179	.010	1.629	3	.0	3352.5	3352.5	1.000	112.5	1700.8	1694.7	70.6	.2	3.1	.0205	.091	.093	1	38.00
179	.010	1.629	3	.0	3334.6	3334.6	1.000	112.5	1700.8	1694.7	70.6	.2	3.2	.0205	.093	.093	2	38.00
179	.010	1.629	3	.0	3343.0	3343.0	1.000	112.5	1700.8	1694.7	70.6	.2	3.2	.0205	.093	.093	3	38.00
179	.010	1.629	3	.0	3339.1	3339.1	1.000	112.5	1700.8	1694.7	70.6	.2	3.2	.0205	.093	.092	4	38.00
179	.010	1.629	3	.0	3340.8	3340.8	1.000	112.5	1700.8	1694.7	70.6	.2	3.1	.0205	.092	.092	5	38.00
180	.010	1.639	3	.0	3257.8	3257.8	1.000	112.7	1700.7	1694.7	70.8	.2	3.1	.0205	.092	.090	0	38.00
180	.010	1.639	3	.0	3296.8	3296.8	1.000	112.7	1700.7	1694.7	70.8	.2	3.1	.0205	.090	.091	1	38.00
180	.010	1.639	3	.0	3278.6	3278.6	1.000	112.7	1700.7	1694.7	70.8	.2	3.1	.0205	.091	.091	2	38.00
180	.010	1.639	3	.0	3287.1	3287.1	1.000	112.7	1700.7	1694.7	70.8	.2	3.1	.0205	.091	.091	3	38.00
180	.010	1.639	3	.0	3283.1	3283.1	1.000	112.7	1700.7	1694.7	70.8	.2	3.1	.0205	.091	.090	4	38.00
180	.010	1.639	3	.0	3284.9	3284.9	1.000	112.7	1700.7	1694.7	70.8	.2	3.1	.0205	.090	.091	5	38.00
181	.010	1.649	3	.0	3201.7	3201.7	1.000	112.9	1700.6	1694.7	71.0	.2	3.1	.0205	.090	.088	0	38.00
181	.010	1.649	3	.0	3241.0	3241.0	1.000	112.9	1700.6	1694.7	71.0	.2	3.1	.0205	.088	.089	1	38.00
181	.010	1.649	3	.0	3222.6	3222.6	1.000	112.9	1700.6	1694.7	71.0	.2	3.1	.0205	.089	.089	2	38.00
181	.010	1.649	3	.0	3231.2	3231.2	1.000	112.9	1700.6	1694.7	71.0	.2	3.1	.0205	.089	.090	3	38.00
181	.010	1.649	3	.0	3227.2	3227.2	1.000	112.9	1700.6	1694.7	71.0	.2	3.1	.0205	.090	.089	4	38.00
181	.010	1.649	3	.0	3229.0	3229.0	1.000	112.9	1700.6	1694.7	71.0	.2	3.1	.0205	.089	.089	5	38.00
182	.010	1.659	3	.0	3145.5	3145.5	1.000	113.1	1700.5	1694.7	71.2	.2	3.1	.0205	.089	.087	0	38.00
182	.010	1.659	3	.0	3185.3	3185.3	1.000	113.1	1700.6	1694.7	71.2	.2	3.0	.0205	.087	.088	1	38.00
182	.010	1.659	3	.0	3166.4	3166.4	1.000	113.1	1700.5	1694.7	71.2	.2	3.0	.0205	.088	.088	2	38.00
182	.010	1.659	3	.0	3175.3	3175.3	1.000	113.1	1700.5	1694.7	71.2	.2	3.0	.0205	.088	.088	3	38.00
182	.010	1.659	3	.0	3171.1	3171.1	1.000	113.1	1700.5	1694.7	71.2	.2	3.0	.0205	.088	.087	4	38.00
182	.010	1.659	3	.0	3173.0	3173.0	1.000	113.1	1700.5	1694.7	71.2	.2	3.0	.0205	.087	.087	5	38.00
183	.010	1.669	3	.0	3089.4	3089.4	1.000	113.2	1700.4	1694.7	71.4	.2	3.0	.0205	.087	.085	0	38.00
183	.010	1.669	3	.0	3129.6	3129.6	1.000	113.2	1700.5	1694.7	71.3	.2	3.0	.0205	.085	.086	1	38.00
183	.010	1.669	3	.0	3110.3	3110.3	1.000	113.2	1700.5	1694.7	71.3	.2	3.0	.0205	.086	.085	2	38.00
183	.010	1.669	3	.0	3119.5	3119.5	1.000	113.2	1700.5	1694.7	71.3	.2	3.0	.0205	.085	.086	3	38.00
183	.010	1.669	3	.0	3115.1	3115.1	1.000	113.2	1700.5	1694.7	71.4	.2	3.0	.0205	.086	.086	4	38.00
183	.010	1.669	3	.0	3117.2	3117.2	1.000	113.2	1700.5	1694.7	71.3	.2	3.0	.0205	.086	.086	5	38.00
184	.010	1.679	3	.0	3033.1	3033.1	1.000	113.4	1700.4	1694.7	71.5	.2	3.0	.0205	.086	.084	0	38.00
184	.010	1.679	3	.0	3073.8	3073.8	1.000	113.4	1700.4	1694.7	71.5	.2	3.0	.0205	.084	.085	1	38.00
184	.010	1.679	3	.0	3054.3	3054.3	1.000	113.4	1700.4	1694.7	71.5	.2	3.0	.0205	.085	.084	2	38.00
184	.010	1.679	3	.0	3063.6	3063.6	1.000	113.4	1700.4	1694.7	71.5	.2	3.0	.0205	.084	.085	3	38.00
184	.010	1.679	3	.0	3059.2	3059.2	1.000	113.4	1700.4	1694.7	71.5	.2	3.0	.0205	.085	.084	4	38.00
184	.010	1.679	3	.0	3061.2	3061.2	1.000	113.4	1700.4	1694.7	71.5	.2	3.0	.0205	.084	.084	5	38.00
185	.010	1.689	3	.0	2977.0	2977.0	1.000	113.6	1700.3	1694.7	71.7	.2	3.0	.0205	.084	.082	0	38.00
185	.010	1.689	3	.0	3018.1	3018.1	1.000	113.6	1700.3	1694.7	71.7	.2	2.9	.0205	.082	.083	1	38.00
185	.010	1.689	3	.0	2998.2	2998.2	1.000	113.6	1700.3	1694.7	71.7	.2	2.9	.0205	.083	.082	2	38.00
185	.010	1.689	3	.0	3007.7	3007.7	1.000	113.6	1700.3	1694.7	71.7	.2	2.9	.0205	.082	.082	3	38.00
185	.010	1.689	3	.0	3003.1	3003.1	1.000	113.6	1700.3	1694.7	71.7	.2	2.9	.0205	.082	.083	4	38.00
185	.010	1.689	3	.0	3005.4	3005.4	1.000	113.6	1700.3	1694.7	71.7	.2	2.9	.0205	.083	.083	5	38.00
186	.010	1.699	3	.0	2920.8	2920.8	1.000	113.7	1700.2	1694.7	71.8	.2	2.9	.0205	.083	.080	0	38.00
186	.010	1.699	3	.0	2962.5	2962.5	1.000	113.7	1700.3	1694.7	71.8	.2	2.9	.0205	.080	.081	1	38.00
186	.010	1.699	3	.0	2942.1	2942.1	1.000	113.7	1700.2	1694.7	71.8	.2	2.9	.0205	.081	.081	2	38.00
186	.010	1.699	3	.0	2952.0	2952.0	1.000	113.7	1700.2	1694.7	71.8	.2	2.9	.0205	.081	.081	3	38.00
186	.010	1.699	3	.0	2947.2	2947.2	1.000	113.7	1700.2	1694.7	71.8	.2	2.9	.0205	.081	.081	4	38.00
186	.010	1.699	3	.0	2949.5	2949.5	1.000	113.7	1700.2	1694.7	71.8	.2	2.9	.0205	.081	.081	5	38.00
187	.010	1.709	3	.0	2864.6	2864.6	1.000	113.9	1700.1	1694.7	72.0	.2	2.9	.0205	.081	.078	0	38.00
187	.010	1.709	3	.0	2906.8	2906.8	1.000	113.9	1700.2	1694.7	72.0	.2	2.8	.0205	.078	.080	1	38.00
187	.010	1.709	3	.0	2886.0	2886.0	1.000	113.9	1700.2	1694.7	72.0	.2	2.9	.0205	.080	.079	2	38.00
187	.010	1.709	3	.0	2896.2	2896.2	1.000	113.9	1700.2	1694.7	72.0	.2	2.9	.0205	.079	.079	3	38.00
187	.010	1.709	3	.0	2891.2	2891.2	1.000	113.9	1700.2	1694.7	72.0	.2	2.9	.0205	.079	.080	4	38.00
187	.010	1.709	3	.0	2893.6	2893.6	1.000	113.9	1700.2	1694.7	72.0	.2	2.9	.0205	.080	.080	5	38.00
188	.010	1.719	3	.0	2808.5	2808.5	1.000	114.0	1700.1	1694.7	72.2	.2	2.9	.0205	.080	.077	0	38.00
188	.010	1.719	3	.0	2851.0	2851.0	1.000	114.0	1700.1	1694.7	72.2	.2	2.8	.0205	.077	.078	1	38.00
188	.010	1.719	3	.0	2829.9	2829.9	1.000	114.0	1700.1	1694.7	72.2	.2	2.8	.0205	.078	.078	2	38.00
188	.010	1.719	3	.0	2840.4	2840.4	1.000	114.0	1700.1	1694.7	72.2	.2	2.8	.0205	.078	.078	3	38.00
188	.010	1.719	3	.0	2835.1	2835.1	1.000	114.0	1700.1	1694.7	72.2	.2	2.8	.0205	.078	.078	4	38.00
188	.010	1.719	3	.0	2837.8	2837.8	1.000	114.0	1700.1	1694.7	72.2	.2	2.8	.0205	.078	.078	5	38.00
189	.010	1.729	3	.0	2752.3	2752.3	1.000	114.2	1700.0	1694.7	72.3	.2	2.8	.0205	.078	.075	0	38.00
189	.010	1.729	3	.0	2795.5	2795.5	1.000	114.2	1700.0	1694.7	72.3	.2	2.8	.0205	.075	.077	1	38.00
189	.010	1.729	3	.0	2773.8	2773.8	1.000	114.2	1700.0	1694.7	72.3	.2	2.8	.0205	.077	.076	2	38.00
189	.010	1.729	3	.0	2784.6	2784.6	1.000	114.2	1700.0	1694.7	72.3	.2	2.8	.0205	.076	.076	3	38.00
189	.010	1.729	3	.0	2779.2	2779.2	1.000	114.2	1700.0	1694.7	72.3	.2	2.8	.0205	.076	.076	4	38.00

189	.010	1.729	3	.0	2781.9	2781.9	1.000	114.2	1700.0	1694.7	72.3	.2	2.8	.0205	.076	.076	5	38.00
190	.010	1.739	3	.0	2696.1	2696.1	1.000	114.3	1699.9	1694.7	72.5	.2	2.8	.0205	.076	.074	0	38.00
190	.010	1.739	3	.0	2739.8	2739.8	1.000	114.3	1700.0	1694.7	72.5	.1	2.7	.0205	.074	.075	1	38.00
190	.010	1.739	3	.0	2717.7	2717.7	1.000	114.3	1699.9	1694.7	72.5	.1	2.7	.0205	.075	.074	2	38.00
190	.010	1.739	3	.0	2728.8	2728.8	1.000	114.3	1699.9	1694.7	72.5	.1	2.7	.0205	.074	.075	3	38.00
190	.010	1.739	3	.0	2723.3	2723.3	1.000	114.3	1699.9	1694.7	72.5	.1	2.8	.0205	.075	.074	4	38.00
190	.010	1.739	3	.0	2726.0	2726.0	1.000	114.3	1699.9	1694.7	72.5	.1	2.7	.0205	.074	.074	5	38.00
191	.010	1.749	3	.0	2640.0	2640.0	1.000	114.5	1699.8	1694.7	72.6	.1	2.7	.0205	.074	.072	0	38.00
191	.010	1.749	3	.0	2684.1	2684.1	1.000	114.5	1699.9	1694.7	72.6	.1	2.7	.0205	.072	.073	1	38.00
191	.010	1.749	3	.0	2661.7	2661.7	1.000	114.5	1699.9	1694.7	72.6	.1	2.7	.0205	.073	.073	2	38.00
191	.010	1.749	3	.0	2673.0	2673.0	1.000	114.5	1699.9	1694.7	72.6	.1	2.7	.0205	.073	.073	3	38.00
191	.010	1.749	3	.0	2667.2	2667.2	1.000	114.5	1699.9	1694.7	72.6	.1	2.7	.0205	.073	.073	4	38.00
191	.010	1.749	3	.0	2670.2	2670.2	1.000	114.5	1699.9	1694.7	72.6	.1	2.7	.0205	.073	.073	5	38.00
192	.010	1.759	3	.0	2583.8	2583.8	1.000	114.6	1699.7	1694.7	72.8	.1	2.7	.0205	.073	.070	0	38.00
192	.010	1.759	3	.0	2628.5	2628.5	1.000	114.6	1699.8	1694.7	72.7	.1	2.6	.0205	.070	.072	1	38.00
192	.010	1.759	3	.0	2605.6	2605.6	1.000	114.6	1699.8	1694.7	72.7	.1	2.7	.0205	.072	.071	2	38.00
192	.010	1.759	3	.0	2617.3	2617.3	1.000	114.6	1699.8	1694.7	72.7	.1	2.7	.0205	.071	.071	3	38.00
192	.010	1.759	3	.0	2611.3	2611.3	1.000	114.6	1699.8	1694.7	72.7	.1	2.7	.0205	.071	.072	4	38.00
192	.010	1.759	3	.0	2614.4	2614.4	1.000	114.6	1699.8	1694.7	72.7	.1	2.7	.0205	.072	.071	5	38.00
193	.010	1.769	3	.0	2527.7	2527.7	1.000	114.8	1699.7	1694.7	72.9	.1	2.7	.0205	.072	.069	0	38.00
193	.010	1.769	3	.0	2572.9	2572.9	1.000	114.8	1699.7	1694.7	72.9	.1	2.6	.0205	.069	.070	1	38.00
193	.010	1.769	3	.0	2549.5	2549.5	1.000	114.8	1699.7	1694.7	72.9	.1	2.6	.0205	.070	.069	2	38.00
193	.010	1.769	3	.0	2561.6	2561.6	1.000	114.8	1699.7	1694.7	72.9	.1	2.6	.0205	.069	.070	3	38.00
193	.010	1.769	3	.0	2555.3	2555.3	1.000	114.8	1699.7	1694.7	72.9	.1	2.6	.0205	.070	.069	4	38.00
193	.010	1.769	3	.0	2558.5	2558.5	1.000	114.8	1699.7	1694.7	72.9	.1	2.6	.0205	.069	.070	5	38.00
194	.010	1.779	3	.0	2471.4	2471.4	1.000	114.9	1699.6	1694.7	73.0	.1	2.6	.0205	.069	.067	0	38.00
194	.010	1.779	3	.0	2517.3	2517.3	1.000	114.9	1699.7	1694.7	73.0	.1	2.6	.0205	.067	.068	1	38.00
194	.010	1.779	3	.0	2493.3	2493.3	1.000	114.9	1699.6	1694.7	73.0	.1	2.6	.0205	.068	.068	2	38.00
194	.010	1.779	3	.0	2505.7	2505.7	1.000	114.9	1699.6	1694.7	73.0	.1	2.6	.0205	.068	.068	3	38.00
194	.010	1.779	3	.0	2499.3	2499.3	1.000	114.9	1699.6	1694.7	73.0	.1	2.6	.0205	.068	.068	4	38.00
194	.010	1.779	3	.0	2502.7	2502.7	1.000	114.9	1699.6	1694.7	73.0	.1	2.6	.0205	.068	.068	5	38.00
195	.010	1.789	3	.0	2415.3	2415.3	1.000	115.0	1699.5	1694.7	73.2	.1	2.6	.0205	.068	.066	0	38.00
195	.010	1.789	3	.0	2461.7	2461.7	1.000	115.0	1699.6	1694.7	73.2	.1	2.5	.0205	.066	.067	1	38.00
195	.010	1.789	3	.0	2437.2	2437.2	1.000	115.0	1699.5	1694.7	73.2	.1	2.6	.0205	.067	.066	2	38.00
195	.010	1.789	3	.0	2450.0	2450.0	1.000	115.0	1699.6	1694.7	73.2	.1	2.5	.0205	.066	.067	3	38.00
195	.010	1.789	3	.0	2443.3	2443.3	1.000	115.0	1699.5	1694.7	73.2	.1	2.6	.0205	.067	.066	4	38.00
195	.010	1.789	3	.0	2446.8	2446.8	1.000	115.0	1699.6	1694.7	73.2	.1	2.5	.0205	.066	.066	5	38.00
196	.010	1.799	3	.0	2359.2	2359.2	1.000	115.2	1699.4	1694.7	73.3	.1	2.6	.0205	.066	.064	0	38.00
196	.010	1.799	3	.0	2406.1	2406.1	1.000	115.2	1699.5	1694.7	73.3	.1	2.5	.0205	.064	.065	1	38.00
196	.010	1.799	3	.0	2381.1	2381.1	1.000	115.2	1699.5	1694.7	73.3	.1	2.5	.0205	.065	.065	2	38.00
196	.010	1.799	3	.0	2394.4	2394.4	1.000	115.2	1699.5	1694.7	73.3	.1	2.5	.0205	.065	.065	3	38.00
196	.010	1.799	3	.0	2387.3	2387.3	1.000	115.2	1699.5	1694.7	73.3	.1	2.5	.0205	.065	.065	4	38.00
196	.010	1.799	3	.0	2391.1	2391.1	1.000	115.2	1699.5	1694.7	73.3	.1	2.5	.0205	.065	.065	5	38.00
197	.010	1.809	3	.0	2303.0	2303.0	1.000	115.3	1699.4	1694.7	73.4	.1	2.5	.0205	.065	.062	0	38.00
197	.010	1.809	3	.0	2350.7	2350.7	1.000	115.3	1699.4	1694.7	73.4	.1	2.5	.0205	.062	.064	1	38.00
197	.010	1.809	3	.0	2325.0	2325.0	1.000	115.3	1699.4	1694.7	73.4	.1	2.5	.0205	.064	.063	2	38.00
197	.010	1.809	3	.0	2338.7	2338.7	1.000	115.3	1699.4	1694.7	73.4	.1	2.5	.0205	.063	.063	3	38.00
197	.010	1.809	3	.0	2331.4	2331.4	1.000	115.3	1699.4	1694.7	73.4	.1	2.5	.0205	.063	.063	4	38.00
197	.010	1.809	3	.0	2335.3	2335.3	1.000	115.3	1699.4	1694.7	73.4	.1	2.5	.0205	.063	.063	5	38.00
198	.010	1.819	3	.0	2246.7	2246.7	1.000	115.4	1699.3	1694.7	73.5	.1	2.5	.0205	.063	.061	0	38.00
198	.010	1.819	3	.0	2295.1	2295.1	1.000	115.4	1699.3	1694.7	73.5	.1	2.4	.0205	.061	.062	1	38.00
198	.010	1.819	3	.0	2268.8	2268.8	1.000	115.4	1699.3	1694.7	73.5	.1	2.5	.0205	.062	.061	2	38.00
198	.010	1.819	3	.0	2282.9	2282.9	1.000	115.4	1699.3	1694.7	73.5	.1	2.4	.0205	.061	.062	3	38.00
198	.010	1.819	3	.0	2275.3	2275.3	1.000	115.4	1699.3	1694.7	73.5	.1	2.4	.0205	.062	.062	4	38.00
198	.010	1.819	3	.0	2279.4	2279.4	1.000	115.4	1699.3	1694.7	73.5	.1	2.4	.0205	.062	.062	5	38.00
199	.010	1.829	3	.0	2190.6	2190.6	1.000	115.5	1699.2	1694.7	73.7	.1	2.4	.0205	.062	.059	0	38.00
199	.010	1.829	3	.0	2239.5	2239.5	1.000	115.5	1699.3	1694.7	73.7	.1	2.4	.0205	.059	.060	1	38.00
199	.010	1.829	3	.0	2212.8	2212.8	1.000	115.5	1699.2	1694.7	73.7	.1	2.4	.0205	.060	.060	2	38.00
199	.010	1.829	3	.0	2227.2	2227.2	1.000	115.5	1699.2	1694.7	73.7	.1	2.4	.0205	.060	.060	3	38.00
199	.010	1.829	3	.0	2219.4	2219.4	1.000	115.5	1699.2	1694.7	73.7	.1	2.4	.0205	.060	.060	4	38.00
199	.010	1.829	3	.0	2223.7	2223.7	1.000	115.5	1699.2	1694.7	73.7	.1	2.4	.0205	.060	.060	5	38.00
200	.010	1.839	3	.0	2134.4	2134.4	1.000	115.7	1699.1	1694.7	73.8	.1	2.4	.0205	.060	.058	0	38.00

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PROJECT TITLE : Ftn Hills ADMP
PROJECT NUMBER : #63 10/17/1996

Step I	Time Step (hr) DTH	Elpse Time (hr) T	Fail Code KG	Spillway Outflow (cfs) QTS	Breach Outflow (cfs) QB	Total Outflow (cfs) QTOT	Sbmrg Crctn Factr SUB	Brech Top Width (ft) BT	Rsrvor W. S. Elev. (ft - MSL) HY	Breach Bottom Elev. (ft - MSL) HC	Brech Bottm Width (ft) BO	Breach Width Incres (ft) PPP	Breach Flow Depth (ft) HP	Brech Manig (n) CNN	Estmte Erosin Depth Incrse (ft) DH	Comput Erosin Depth Incrse (ft) DHH	Itrtn Count KIT	Brech Vrtcl Side Angle (deg) ALG
200	.010	1.839	3	.0	2184.1	2184.1	1.000	115.6	1699.2	1694.7	73.8	.1	2.3	.0205	.058	.059	1	38.00
200	.010	1.839	3	.0	2156.6	2156.6	1.000	115.6	1699.1	1694.7	73.8	.1	2.4	.0205	.059	.058	2	38.00
200	.010	1.839	3	.0	2171.7	2171.7	1.000	115.6	1699.2	1694.7	73.8	.1	2.4	.0205	.058	.058	3	38.00
200	.010	1.839	3	.0	2163.4	2163.4	1.000	115.6	1699.2	1694.7	73.8	.1	2.4	.0205	.058	.058	4	38.00
200	.010	1.839	3	.0	2167.9	2167.9	1.000	115.6	1699.2	1694.7	73.8	.1	2.4	.0205	.058	.058	5	38.00
201	.010	1.849	3	.0	2078.2	2078.2	1.000	115.8	1699.0	1694.7	73.9	.1	2.4	.0205	.058	.056	0	38.00
201	.010	1.849	3	.0	2128.5	2128.5	1.000	115.8	1699.1	1694.7	73.9	.1	2.3	.0205	.056	.057	1	38.00
201	.010	1.849	3	.0	2100.5	2100.5	1.000	115.8	1699.1	1694.7	73.9	.1	2.3	.0205	.057	.057	2	38.00
201	.010	1.849	3	.0	2116.0	2116.0	1.000	115.8	1699.1	1694.7	73.9	.1	2.3	.0205	.057	.057	3	38.00
201	.010	1.849	3	.0	2107.4	2107.4	1.000	115.8	1699.1	1694.7	73.9	.1	2.3	.0205	.057	.057	4	38.00

201	.010	1.849	3	.0	2112.1	2112.1	1.000	115.8	1699.1	1694.7	73.9	.1	2.3	.0205	.057	.057	5	38.00
202	.010	1.859	3	.0	2022.0	2022.0	1.000	115.9	1699.0	1694.7	74.0	.1	2.3	.0205	.057	.054	0	38.00
202	.010	1.859	3	.0	2073.0	2073.0	1.000	115.9	1699.0	1694.7	74.0	.1	2.3	.0205	.054	.055	1	38.00
202	.010	1.859	3	.0	2044.4	2044.4	1.000	115.9	1699.0	1694.7	74.0	.1	2.3	.0205	.055	.055	2	38.00
202	.010	1.859	3	.0	2060.3	2060.3	1.000	115.9	1699.0	1694.7	74.0	.1	2.3	.0205	.055	.055	3	38.00
202	.010	1.859	3	.0	2051.4	2051.4	1.000	115.9	1699.0	1694.7	74.0	.1	2.3	.0205	.055	.055	4	38.00
202	.010	1.859	3	.0	2056.4	2056.4	1.000	115.9	1699.0	1694.7	74.0	.1	2.3	.0205	.055	.055	5	38.00
203	.010	1.869	3	.0	1965.8	1965.8	1.000	116.0	1698.9	1694.7	74.1	.1	2.3	.0205	.055	.052	0	38.00
203	.010	1.869	3	.0	2017.6	2017.6	1.000	116.0	1698.9	1694.7	74.1	.1	2.2	.0205	.052	.054	1	38.00
203	.010	1.869	3	.0	1988.2	1988.2	1.000	116.0	1698.9	1694.7	74.1	.1	2.3	.0205	.054	.053	2	38.00
203	.010	1.869	3	.0	2004.7	2004.7	1.000	116.0	1698.9	1694.7	74.1	.1	2.2	.0205	.053	.054	3	38.00
203	.010	1.869	3	.0	1995.4	1995.4	1.000	116.0	1698.9	1694.7	74.1	.1	2.3	.0205	.054	.053	4	38.00
203	.010	1.869	3	.0	2000.6	2000.6	1.000	116.0	1698.9	1694.7	74.1	.1	2.2	.0205	.053	.053	5	38.00
204	.010	1.879	3	.0	1909.4	1909.4	1.000	116.1	1698.8	1694.7	74.2	.1	2.2	.0205	.053	.051	0	38.00
204	.010	1.879	3	.0	1962.1	1962.1	1.000	116.1	1698.9	1694.7	74.2	.1	2.2	.0205	.051	.053	1	38.00
204	.010	1.879	3	.0	1931.9	1931.9	1.000	116.1	1698.8	1694.7	74.2	.1	2.2	.0205	.053	.052	2	38.00
204	.010	1.879	3	.0	1949.2	1949.2	1.000	116.1	1698.8	1694.7	74.2	.1	2.2	.0205	.052	.052	3	38.00
204	.010	1.879	3	.0	1939.3	1939.3	1.000	116.1	1698.8	1694.7	74.2	.1	2.2	.0205	.052	.052	4	38.00
204	.010	1.879	3	.0	1944.9	1944.9	1.000	116.1	1698.8	1694.7	74.2	.1	2.2	.0205	.052	.052	5	38.00
205	.010	1.889	3	.0	1853.3	1853.3	1.000	116.2	1698.7	1694.7	74.3	.1	2.2	.0205	.052	.049	0	38.00
205	.010	1.889	3	.0	1906.8	1906.8	1.000	116.2	1698.8	1694.7	74.3	.1	2.1	.0205	.049	.051	1	38.00
205	.010	1.889	3	.0	1875.9	1875.9	1.000	116.2	1698.7	1694.7	74.3	.1	2.2	.0205	.051	.050	2	38.00
205	.010	1.889	3	.0	1893.6	1893.6	1.000	116.2	1698.8	1694.7	74.3	.1	2.2	.0205	.050	.051	3	38.00
205	.010	1.889	3	.0	1883.4	1883.4	1.000	116.2	1698.8	1694.7	74.3	.1	2.2	.0205	.051	.050	4	38.00
205	.010	1.889	3	.0	1889.2	1889.2	1.000	116.2	1698.8	1694.7	74.3	.1	2.2	.0205	.050	.050	5	38.00
206	.010	1.899	3	.0	1796.9	1796.9	1.000	116.3	1698.6	1694.7	74.4	.1	2.2	.0205	.050	.048	0	38.00
206	.010	1.899	3	.0	1851.4	1851.4	1.000	116.3	1698.7	1694.7	74.4	.1	2.1	.0205	.048	.049	1	38.00
206	.010	1.899	3	.0	1819.5	1819.5	1.000	116.3	1698.7	1694.7	74.4	.1	2.1	.0205	.049	.048	2	38.00
206	.010	1.899	3	.0	1838.0	1838.0	1.000	116.3	1698.7	1694.7	74.4	.1	2.1	.0205	.048	.049	3	38.00
206	.010	1.899	3	.0	1827.2	1827.2	1.000	116.3	1698.7	1694.7	74.4	.1	2.1	.0205	.049	.049	4	38.00
206	.010	1.899	3	.0	1833.5	1833.5	1.000	116.3	1698.7	1694.7	74.4	.1	2.1	.0205	.049	.049	5	38.00
207	.010	1.909	3	.0	1740.8	1740.8	1.000	116.4	1698.5	1694.7	74.5	.1	2.1	.0206	.049	.046	0	38.00
207	.010	1.909	3	.0	1796.0	1796.0	1.000	116.4	1698.6	1694.7	74.5	.1	2.1	.0206	.046	.048	1	38.00
207	.010	1.909	3	.0	1763.4	1763.4	1.000	116.4	1698.6	1694.7	74.5	.1	2.1	.0206	.048	.047	2	38.00
207	.010	1.909	3	.0	1782.5	1782.5	1.000	116.4	1698.6	1694.7	74.5	.1	2.1	.0206	.047	.047	3	38.00
207	.010	1.909	3	.0	1771.2	1771.2	1.000	116.4	1698.6	1694.7	74.5	.1	2.1	.0206	.047	.047	4	38.00
207	.010	1.909	3	.0	1777.9	1777.9	1.000	116.4	1698.6	1694.7	74.5	.1	2.1	.0206	.047	.047	5	38.00
208	.010	1.919	3	.0	1684.3	1684.3	1.000	116.5	1698.5	1694.7	74.6	.1	2.1	.0206	.047	.044	0	38.00
208	.010	1.919	3	.0	1740.7	1740.7	1.000	116.5	1698.5	1694.7	74.6	.1	2.0	.0206	.044	.046	1	38.00
208	.010	1.919	3	.0	1707.1	1707.1	1.000	116.5	1698.5	1694.7	74.6	.1	2.1	.0206	.046	.045	2	38.00
208	.010	1.919	3	.0	1727.0	1727.0	1.000	116.5	1698.5	1694.7	74.6	.1	2.0	.0206	.045	.045	3	38.00
208	.010	1.919	3	.0	1715.1	1715.1	1.000	116.5	1698.5	1694.7	74.6	.1	2.0	.0206	.045	.045	4	38.00
208	.010	1.919	3	.0	1722.1	1722.1	1.000	116.5	1698.5	1694.7	74.6	.1	2.0	.0206	.045	.046	5	38.00
209	.010	1.929	3	.0	1628.0	1628.0	1.000	116.6	1698.4	1694.7	74.7	.1	2.1	.0206	.045	.043	0	38.00
209	.010	1.929	3	.0	1685.4	1685.4	1.000	116.5	1698.5	1694.7	74.7	.1	2.0	.0206	.043	.044	1	38.00
209	.010	1.929	3	.0	1650.7	1650.7	1.000	116.6	1698.4	1694.7	74.7	.1	2.0	.0206	.044	.043	2	38.00
209	.010	1.929	3	.0	1671.5	1671.5	1.000	116.5	1698.4	1694.7	74.7	.1	2.0	.0206	.043	.044	3	38.00
209	.010	1.929	3	.0	1659.0	1659.0	1.000	116.6	1698.4	1694.7	74.7	.1	2.0	.0206	.044	.044	4	38.00
209	.010	1.929	3	.0	1666.5	1666.5	1.000	116.6	1698.4	1694.7	74.7	.1	2.0	.0206	.044	.044	5	38.00
210	.010	1.939	3	.0	1571.7	1571.7	1.000	116.6	1698.3	1694.7	74.8	.1	2.0	.0206	.044	.041	0	38.00
210	.010	1.939	3	.0	1630.1	1630.1	1.000	116.6	1698.4	1694.7	74.8	.1	1.9	.0206	.041	.043	1	38.00
210	.010	1.939	3	.0	1594.4	1594.4	1.000	116.6	1698.3	1694.7	74.8	.1	2.0	.0206	.043	.042	2	38.00
210	.010	1.939	3	.0	1616.0	1616.0	1.000	116.6	1698.4	1694.7	74.8	.1	2.0	.0206	.042	.043	3	38.00
210	.010	1.939	3	.0	1602.9	1602.9	1.000	116.6	1698.3	1694.7	74.8	.1	2.0	.0206	.043	.042	4	38.00
210	.010	1.939	3	.0	1610.8	1610.8	1.000	116.6	1698.3	1694.7	74.8	.1	2.0	.0206	.042	.042	5	38.00
211	.010	1.949	3	.0	1515.4	1515.4	1.000	116.7	1698.2	1694.7	74.8	.1	2.0	.0206	.042	.040	0	38.00
211	.010	1.949	3	.0	1574.9	1574.9	1.000	116.7	1698.3	1694.7	74.8	.1	1.9	.0206	.040	.041	1	38.00
211	.010	1.949	3	.0	1538.1	1538.1	1.000	116.7	1698.2	1694.7	74.8	.1	1.9	.0206	.041	.040	2	38.00
211	.010	1.949	3	.0	1560.6	1560.6	1.000	116.7	1698.3	1694.7	74.8	.1	1.9	.0206	.040	.041	3	38.00
211	.010	1.949	3	.0	1546.7	1546.7	1.000	116.7	1698.2	1694.7	74.8	.1	1.9	.0206	.041	.040	4	38.00
211	.010	1.949	3	.0	1555.3	1555.3	1.000	116.7	1698.3	1694.7	74.8	.1	1.9	.0206	.040	.041	5	38.00
212	.010	1.959	3	.0	1458.9	1458.9	1.000	116.8	1698.1	1694.7	74.9	.1	1.9	.0206	.040	.038	0	38.00
212	.010	1.959	3	.0	1519.8	1519.8	1.000	116.8	1698.2	1694.7	74.9	.1	1.9	.0206	.038	.040	1	38.00
212	.010	1.959	3	.0	1481.6	1481.6	1.000	116.8	1698.1	1694.7	74.9	.1	1.9	.0206	.040	.038	2	38.00
212	.010	1.959	3	.0	1505.2	1505.2	1.000	116.8	1698.2	1694.7	74.9	.1	1.9	.0206	.038	.039	3	38.00
212	.010	1.959	3	.0	1490.6	1490.6	1.000	116.8	1698.2	1694.7	74.9	.1	1.9	.0206	.039	.039	4	38.00
212	.010	1.959	3	.0	1499.6	1499.6	1.000	116.8	1698.2	1694.7	74.9	.1	1.9	.0206	.039	.039	5	38.00
213	.010	1.969	3	.0	1402.5	1402.5	1.000	116.9	1698.0	1694.7	75.0	.1	1.9	.0207	.039	.036	0	38.00
213	.010	1.969	3	.0	1464.5	1464.5	1.000	116.9	1698.1	1694.7	75.0	.1	1.8	.0207	.036	.038	1	38.00
213	.010	1.969	3	.0	1425.2	1425.2	1.000	116.9	1698.1	1694.7	75.0	.1	1.9	.0207	.038	.037	2	38.00
213	.010	1.969	3	.0	1449.8	1449.8	1.000	116.9	1698.1	1694.7	75.0	.1	1.8	.0207	.037	.038	3	38.00
213	.010	1.969	3	.0	1434.3	1434.3	1.000	116.9	1698.1	1694.7	75.0	.1	1.8	.0207	.038	.037	4	38.00
213	.010	1.969	3	.0	1444.1	1444.1	1.000	116.9	1698.1	1694.7	75.0	.1	1.8	.0207	.037	.038	5	38.00
214	.010	1.979	3	.0	1346.0	1346.0	1.000	116.9	1697.9	1694.7	75.1	.1	1.8	.0207	.037	.035	0	38.00
214	.010	1.979	3	.0	1409.6	1409.6	1.000	116.9	1698.0	1694.7	75.1	.1	1.8	.0207	.035	.037	1	38.00
214	.010	1.979	3	.0	1368.7	1368.7	1.000	116.9	1698.0	1694.7	75.1	.1	1.8	.0207	.037	.035	2	38.00
214	.010	1.979	3	.0	1394.7	1394.7	1.000	116.9	1698.0	1694.7	75.1	.1	1.8	.0207	.035	.036	3	38.00
214	.010	1.979	3	.0	1378.1	1378.1	1.000	116.9	1698.0	1694.7	75.1	.1	1.8	.0207	.036	.036	4	38.00
214	.010	1.979	3	.0	1388.6	1388.6	1.000	116.9	1698.0	1694.7	75.1	.1	1.8	.0207	.036	.036	5	38.00
215	.010	1.989	3	.0	1289.3	1289.3	1.000	117.0	1697.8	1694.7	75.1	.1	1.8	.0207	.036	.033	0	38.00
215	.010	1.989	3	.0	1354.5	1354.5	1.000	117.0	1697.9	1694.7	75.1	.1	1.7	.0207	.033	.035	1	38.00
215	.010	1.989	3	.0	1312.2	1312.2	1.000	117.0	1697.9	1694.7	75.1	.1	1.8	.0207	.035	.034	2	38.00
215	.010	1.989	3	.0	1339.4	1339.4	1.000	117.0	1697.9	1694.7	75.1	.1	1.7	.0207	.034	.035	3	38.00
215	.010	1.989	3	.0	1321.8	1321.8	1.000	117.0	1697.9	1694.7	75.1	.1	1.8	.0207	.035	.034	4	38.00
215	.010	1.989	3	.0	1333.0	1333.0	1.000	117.0	1697.9	1694.7	75.1	.1	1.7	.0207	.034	.034	5	38.00
216	.010	1.999	3	.0	1232.8	1232.8	1.000	117.1	1697.7	1694.7	75.2	.1	1.8	.0207	.034	.032	0	38.00
216	.010	1.999	3	.0	1299.6	1299.6	1.000	117.1	1697.9	1694.7	75.2	.1	1.7	.0207	.032	.033	1	38.00
216	.010	1.999	3	.0	1255.6	1255.6	1.000	117.1	1697.8	1694.7	75.2	.1	1.7	.0207	.033	.032	2	38.00
216	.010	1.999	3	.0	1284.1	1284.1	1.000	117.1	1697.8	1694.7	75.2	.1	1.7	.0207	.032	.033	3	38.00

216	.010	1.999	3	.0	1265.4	1265.4	1.000	117.1	1697.8	1694.7	75.2	.1	1.7	.0207	.033	.032	4 38.00
216	.010	1.999	3	.0	1277.6	1277.6	1.000	117.1	1697.8	1694.7	75.2	.1	1.7	.0207	.032	.033	5 38.00

SUMMARY OF OUTPUT RESULTS :

GENERAL RESULTS :

Total Number of Iterations	0
Time of Breach Failure (hr, TFHI)	.72
Total Time-Steps Used (I)	217
Total Elapsed Time (hr, T)	2.009
Outflow Hydrograph Rising Limb Duration (hr, TRS)	.339
Time at which Significant Rise in Outflow Begins (hr, TB)	.336
Dam Top Elevation (ft MSL, HU)	1721.50
Outflow at Time Zero (cfs, QO)	.0
Simplified Time of Breach Failure (hr, TFH)	.544

TFH - Time of failure (hr) which is a linear equivalent of the outflow hydrograph rising limb duration (TRS) obtained by using the simplified dam-break discharge equation.

TFHI - Time of failure (hr) which is a linear equivalent of the outflow hydrograph rising limb duration (TRS) obtained by integrating breach outflow (QB) versus time from T=0 to T=Peak Outflow (TP).

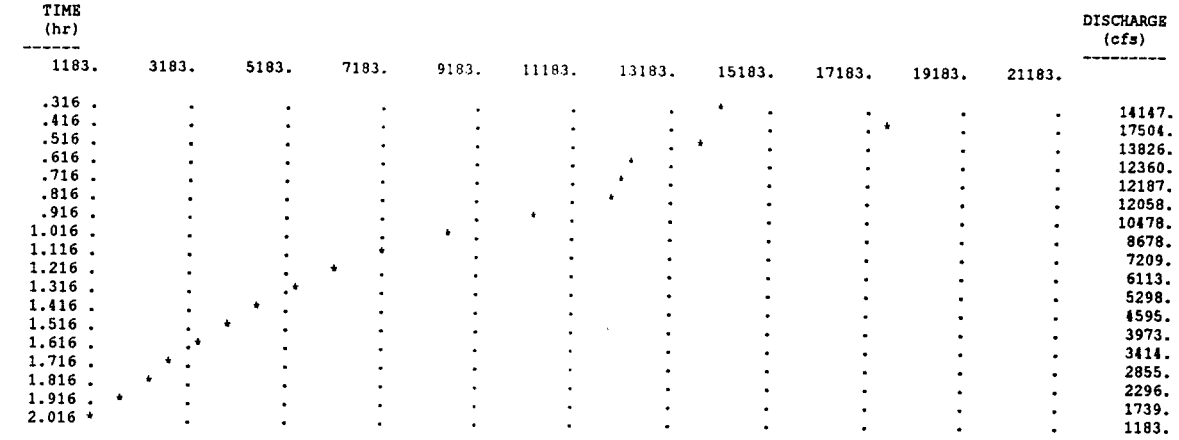
OUTPUT RESULTS AT TIME OF PEAK OUTFLOW :

Elapsed Time (hr, TP)	.349
Spillway Outflow (cfs)	9763.
Breach Outflow (cfs, QBP)	12224.
Total Outflow (cfs, QP)	21987.
Breach Top Width (ft, BRW)	65.5
Breach Bottom Width (ft, BO)	40.5
Breach Side Slope Relative to Vertical (degrees, Z)	25.00

OUTPUT RESULTS AT END OF BREACH ANALYSIS :

Breach Depth (ft, BRD)	26.8
Breach Bottom Elevation (ft MSL, HC)	1694.7
Breach Side Slope Relative to Vertical (degrees, AGL)	38.00
Reservoir Water Surface Elevation (ft MSL, HY)	1697.8

OUTPUT HYDROGRAPH PLOT :



END OF OUTPUT

B O S S D A M B R K (tm)

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Version : 3.00
Serial Number : 20568

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PROGRAM ORIGIN :

Boss Dambrk (tm) is an enhanced version of Professor D. L. Fread's 1991 NWS DAMBRK program.

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PROJECT DESCRIPTION :

PROJECT TITLE : Ftn Hills ADMP
PROJECT NUMBER : # 63
DESCRIPTION : IDA Analysis: No Dam Failure (0.26PMF)
ENGINEER : CCC
DATE OF RUN : 10/17/1996
TIME OF RUN : 12:54 pm

INPUT DATA SUMMARY :

INPUT CONTROL PARAMETERS :

Problem Specification Option	7	
Number of Dynamic Routing Reaches (KKN)	9	
Type of Reservoir Routing (KUI)	0	(storage routing)
Number of multiple dams/bridges (MULDAM)	0	
No. of Reservoir Inflow Hydrograph Points (ITEH)	28	
No. of Informational Cross-Sections (NPRT)	11	
Flood-Plain Routing (KFLP)	0	(no)

SEQUENTIAL CROSS-SECTION NUMBERS (NPT) :

1	52	59	63	66	70	74	79
84	87	90					

BOUNDARY CONDITIONS :

Hydrograph Time Intervals (DHF, hr)	0.00
Routing Period (TEH, hr)	0.83
Breach Development Exponent (BREX)	1.00
Mud/Debris Flow Parameter (MUD)	0
Dry Bed Routing Parameter (IWF)	0
Hydraulic Radius Computation Parameter (KPRES)	1 (R=A/P)
Landslide Simulation (KSL)	0 (none)
Critical Flow Froude Number (DFR)	0.950

INFLOW HYDROGRAPH DESCRIPTION :

Time Elapsed TI(K) (hr)	Upstream Inflow QI(K) (cfs)
0.00	6481.0
0.02	7426.0
0.03	8371.0
0.05	9316.0
0.07	10261.0
0.08	11205.0
0.10	11674.0
0.12	12143.0
0.13	12613.0
0.15	13082.0
0.17	13551.0
0.25	13734.0
0.33	12783.0
0.42	11328.0
0.50	9861.0
0.58	8526.0
0.67	7267.0
0.75	6216.0
0.83	5433.0
0.92	4722.0
1.00	4103.0
1.08	3609.0
1.17	3189.0
1.25	2825.0
1.33	2524.0
1.42	2283.0
1.50	2118.0
1.58	2000.0

SUMMARY OF PROGRAM CONTROL PARAMETERS :

Problem Specification Option (KKN, KUI, MULDAM, IDAM)	7	
Number of Cross-Sections Entered (NS)	11	
Number of Top Widths Entered (NCS)	8	
Number of Cross-Sectional Hydrographs to Plot (NTT)	6	
Flow Type Parameter (KSUPC)	3	(mixed flow)
Number of Lateral Inflow Hydrographs (LQ)	0	
Number of Points in Gate Control Curve (KCG)	0	

CROSS-SECTIONS WHERE HYDROGRAPH REQUESTED :
(maximum allowed = 6)

1 2 4 6 8 11

CHANNEL-VALLEY BOUNDARY CONDITIONS :

Max Discharge at Downstream End (QMAXD, cfs)	0.0
Max Lateral Outflow due to Flood Wave (QLL, cfs/ft)	0.0000
Initial Time-Step Size (DTHM, hr)	0.0000
Time at which Dam Starts to Fail (TFI, hr)	0.0000
Theta Weighting Factor (F1I)	1.000
Stage Convergence Criterion (EPSY, ft)	0.000
Downstream Boundary Type Paramter (YDN)	0.00
Slope of Channel Downstream of Dam (SOM, ft/mi)	0.0000

CROSS-SECTION NUMBER : 1

Cross-Section Location (XS(I), mi) 0.000

Flooding Elevation (FSTG(I), ft MSL) 0.000

DOWNSTREAM REACH NUMBER : 1

Reach Contraction-Expansion Coefficient (FKC) 0.000

Minimum Distance Between Interpolated Cross-Sections (DXM, mi) 0.002

CROSS-SECTION and REACH DESCRIPTION :

Elevation HS(K,I) (ft MSL)	Channel Top Width BS(K,I) (ft)	Channel Manning n CM(K,I)	Storage Top Width BSS(K,I) (ft)
1694.70	0.0	0.0550	0.0
1694.80	38.0	0.0550	0.0
1698.00	43.2	0.0550	0.0
1705.00	54.1	0.0550	0.0
1710.00	62.0	0.0550	0.0
1715.00	69.8	0.0550	0.0
1721.50	80.0	0.0550	0.0
1726.00	87.1	0.0550	0.0

CROSS-SECTION NUMBER : 2

Cross-Section Location (XS(I), mi) 0.102

Flooding Elevation (FSTG(I), ft MSL) 1690.000

DOWNSTREAM REACH NUMBER : 2

Reach Contraction-Expansion Coefficient (FKC) -0.070

Minimum Distance Between Interpolated Cross-Sections (DXM, mi) 0.010

CROSS-SECTION and REACH DESCRIPTION :

Elevation HS(K,I) (ft MSL)	Channel Top Width BS(K,I) (ft)	Channel Manning n CM(K,I)	Storage Top Width BSS(K,I) (ft)
1684.80	0.0	0.0500	0.0
1687.00	31.9	0.0500	0.0
1689.00	84.7	0.0500	0.0
1691.00	100.5	0.0500	0.0
1693.00	158.5	0.0500	0.0
1695.00	271.8	0.0500	0.0
1699.00	311.0	0.0500	0.0
1702.00	460.0	0.0500	0.0

CROSS-SECTION NUMBER : 3

Cross-Section Location (XS(I), mi) 0.259

Flooding Elevation (FSTG(I), ft MSL) 1678.000

DOWNSTREAM REACH NUMBER : 3

Reach Contraction-Expansion Coefficient (FKC) 0.100

Minimum Distance Between Interpolated Cross-Sections (DXM, mi) 0.031

CROSS-SECTION and REACH DESCRIPTION :

Elevation HS(K,I) (ft MSL)	Channel Top Width BS(K,I) (ft)	Channel Manning n CM(K,I)	Storage Top Width BSS(K,I) (ft)
1673.70	0.0	0.0940	0.0
1675.00	83.7	0.0940	0.0
1677.00	123.0	0.0940	0.0
1678.00	217.0	0.0940	0.0
1684.00	390.9	0.0940	0.0
1687.00	485.4	0.0940	0.0
1691.00	624.7	0.0940	0.0
1695.00	814.6	0.0940	0.0

CROSS-SECTION NUMBER : 4

Cross-Section Location (XS(I), mi) 0.382

Flooding Elevation (FSTG(I), ft MSL) 1668.000

DOWNSTREAM REACH NUMBER : 4

Reach Contraction-Expansion Coefficient (FKC) -0.300

Minimum Distance Between Interpolated Cross-Sections (DXM, mi) 0.050

CROSS-SECTION and REACH DESCRIPTION :

Elevation HS(K,I) (ft MSL)	Channel Top Width BS(K,I) (ft)	Channel Manning n CM(K,I)	Storage Top Width BSS(K,I) (ft)
1660.00	0.0	0.0950	0.0
1663.00	85.5	0.0950	0.0
1667.00	108.5	0.0950	0.0
1669.00	256.4	0.0950	0.0
1672.00	489.5	0.0950	0.0
1675.00	659.2	0.0950	0.0
1678.00	765.0	0.0950	0.0
1680.00	915.0	0.0950	0.0

CROSS-SECTION NUMBER : 5

Cross-Section Location (XS(I), mi) 0.562

Flooding Elevation (FSTG(I), ft MSL) 1646.000

DOWNSTREAM REACH NUMBER : 5

Reach Contraction-Expansion Coefficient (FKC) 0.100

Minimum Distance Between Interpolated Cross-Sections (DXM, mi) 0.050

CROSS-SECTION and REACH DESCRIPTION :

Elevation HS(K,I) (ft MSL)	Channel Top Width BS(K,I) (ft)	Channel Manning n CM(K,I)	Storage Top Width BSS(K,I) (ft)
1640.90	0.0	0.0960	0.0
1645.00	76.6	0.0960	0.0
1647.00	156.0	0.0960	0.0
1650.00	279.3	0.0960	0.0
1653.00	406.3	0.0960	0.0
1656.00	564.3	0.0960	0.0
1659.00	775.0	0.0960	0.0
1662.00	900.0	0.0960	0.0

CROSS-SECTION NUMBER : 6

Cross-Section Location (XS(I), mi) 0.795

Flooding Elevation (FSTG(I), ft MSL) 1622.000

DOWNSTREAM REACH NUMBER : 6

Reach Contraction-Expansion Coefficient (FKC) -0.300

Minimum Distance Between Interpolated Cross-Sections (DXM, mi) 0.050

CROSS-SECTION and REACH DESCRIPTION :

Elevation HS(K,I) (ft MSL)	Channel Top Width BS(K,I) (ft)	Channel Manning n CM(K,I)	Storage Top Width BSS(K,I) (ft)
1617.80	0.0	0.0910	0.0
1621.00	98.1	0.0910	0.0
1625.00	129.6	0.0910	0.0
1629.00	199.1	0.0910	0.0
1632.00	343.0	0.0910	0.0
1635.00	425.0	0.0910	0.0
1638.00	487.0	0.0910	0.0
1641.00	628.3	0.0910	0.0

CROSS-SECTION NUMBER : 7

Cross-Section Location (XS(I), mi) 0.996

Flooding Elevation (FSTG(I), ft MSL) 1610.000

DOWNSTREAM REACH NUMBER : 7

Reach Contraction-Expansion Coefficient (FKC) -0.300

Minimum Distance Between Interpolated Cross-Sections (DXM, mi) 0.050

CROSS-SECTION and REACH DESCRIPTION :

Elevation HS(K,I) (ft MSL)	Channel Top Width BS(K,I) (ft)	Channel Manning n CM(K,I)	Storage Top Width BSS(K,I) (ft)
1602.30	0.0	0.0920	0.0
1605.00	100.8	0.0920	0.0
1610.00	139.4	0.0920	0.0
1614.00	179.7	0.0920	0.0
1616.00	263.8	0.0920	0.0
1619.00	420.7	0.0920	0.0
1622.00	470.9	0.0920	0.0
1626.00	536.1	0.0920	0.0

CROSS-SECTION NUMBER : 8

Cross-Section Location (XS(I), mi) 1.245

Flooding Elevation (FSTG(I), ft MSL) 1594.000

DOWNSTREAM REACH NUMBER : 8

Reach Contraction-Expansion Coefficient (FKC) -0.300

Minimum Distance Between Interpolated Cross-Sections (DXM, mi) 0.050

CROSS-SECTION and REACH DESCRIPTION :

Elevation HS(K,I) (ft MSL)	Channel Top Width BS(K,I) (ft)	Channel Manning n CM(K,I)	Storage Top Width BSS(K,I) (ft)
1587.00	0.0	0.0960	0.0
1590.00	98.2	0.0960	0.0
1593.00	116.2	0.0960	0.0
1595.00	196.2	0.0960	0.0
1598.00	340.0	0.0960	0.0
1600.00	505.0	0.0960	0.0
1603.00	615.0	0.0960	0.0
1607.00	842.5	0.0960	0.0

CROSS-SECTION NUMBER : 9

Cross-Section Location (XS(I), mi) 1.499

Flooding Elevation (FSTG(I), ft MSL) 1570.000

DOWNSTREAM REACH NUMBER : 9

Reach Contraction-Expansion Coefficient (FKC) -0.300

Minimum Distance Between Interpolated Cross-Sections (DXM, mi) 0.034

CROSS-SECTION and REACH DESCRIPTION :

Elevation HS(K,I) (ft MSL)	Channel Top Width BS(K,I) (ft)	Channel Manning n CM(K,I)	Storage Top Width BSS(K,I) (ft)
1565.30	0.0	0.1210	0.0
1567.00	152.7	0.1210	0.0
1571.00	209.7	0.1210	0.0
1576.00	230.2	0.1210	0.0
1578.00	425.0	0.1210	0.0
1581.00	760.0	0.1210	0.0
1583.00	895.0	0.1210	0.0
1586.00	985.0	0.1210	0.0

CROSS-SECTION NUMBER : 10

Cross-Section Location (XS(I), mi) 1.602

Flooding Elevation (FSTG(I), ft MSL) 1560.000

DOWNSTREAM REACH NUMBER : 10

Reach Contraction-Expansion Coefficient (FKC) -0.300

Minimum Distance Between Interpolated Cross-Sections (DXM, mi) 0.035

CROSS-SECTION and REACH DESCRIPTION :

Elevation HS(K,I) (ft MSL)	Channel Top Width BS(K,I) (ft)	Channel Manning n CM(K,I)	Storage Top Width BSS(K,I) (ft)
1559.90	0.0	0.1170	0.0
1561.00	100.5	0.1170	0.0
1564.00	495.5	0.1170	0.0
1567.00	680.5	0.1170	0.0
1570.00	895.5	0.1170	0.0
1573.00	1003.0	0.1170	0.0
1576.00	1193.6	0.1170	0.0
1580.00	1265.0	0.1170	0.0

CROSS-SECTION NUMBER : 11

Cross-Section Location (XS(I), mi) 1.708

Flooding Elevation (FSTG(I), ft MSL) 1560.000

CROSS-SECTION DESCRIPTION :

Elevation HS(K,I) (ft MSL)	Channel Top Width BS(K,I) (ft)	Storage Top Width BSS(K,I) (ft)
1551.90	0.0	0.0
1553.00	53.8	0.0
1556.00	196.3	0.0
1559.00	387.9	0.0
1562.00	709.5	0.0
1565.00	855.0	0.0
1568.00	1170.0	0.0
1570.00	1210.0	0.0

DISTANCE BETWEEN INTERPOLATED CROSS-SECTIONS (DXM) THAT WILL BE USED IN COMPUTATIONS :

Down Stream Reach Number I=1,NS1	Interp. Cross Section Distance DXM(I) (mi)
1	0.0020
2	0.0100
3	0.0310
4	0.0500
5	0.0500
6	0.0500
7	0.0500
8	0.0500
9	0.0340
10	0.0350

Total number of cross-sections (original+interpolated) 98

Maximum number of cross-sections allowed 2000

OUTPUT DATA SUMMARY :

CROSS-SECTION and REACH SUMMARY :

Cross Section Number	Cross Section Location (mi)	Bottom Elevation (ft MSL)	Reach Number	Reach Length (mi)	Reach Slope (ft/mi)
1	0.000	1694.700			
2	0.102	1684.800	1	0.102	97.058
3	0.259	1673.700	2	0.157	70.701
4	0.382	1660.000	3	0.123	111.382
5	0.562	1640.900	4	0.180	106.111
6	0.795	1617.800	5	0.233	99.142
7	0.996	1602.300	6	0.201	77.114
8	1.245	1587.000	7	0.249	61.446
9	1.499	1565.300	8	0.254	85.433
10	1.602	1559.900	9	0.103	52.427
11	1.708	1551.900	10	0.106	75.472

SLOPE INFORMATION FOR CROSS-SECTION REACHES :

Reach Section Number I	Water Surface Elevation YQ (ft MSL)	Hydraulic Depth DA (ft)	Reach Bottom Slope SO (ft/m)	Dynamic Slope DS (ft/m)	Total Slope SOT (ft/m)	Critical Slope SC (ft/m)	Manning n CMN
1	1689.75	0.26	97.06	0.86	97.91	362.82	0.055
1	1690.90	0.53	97.06	1.10	98.16	287.97	0.055
1	1693.50	2.22	97.06	1.87	98.93	178.64	0.055
1	1698.00	5.23	97.06	2.61	99.66	134.15	0.055
1	1701.50	6.16	97.06	2.78	99.84	127.05	0.055
1	1705.00	6.20	97.06	2.79	99.84	126.78	0.055
1	1710.25	9.64	97.06	3.32	100.38	109.43	0.055
1	1714.00	9.69	97.06	3.33	100.39	109.24	0.055
2	1679.25	0.39	70.70	1.04	71.74	264.13	0.050
2	1681.00	0.77	70.70	1.33	72.03	209.64	0.050
2	1683.00	1.99	70.70	1.88	72.58	153.11	0.050
2	1684.50	2.42	70.70	2.03	72.73	143.40	0.050
2	1688.50	5.19	70.70	2.71	73.41	111.19	0.050
2	1691.00	6.07	70.70	2.88	73.58	105.53	0.050
2	1695.00	8.53	70.70	3.29	73.99	94.21	0.050
2	1698.50	9.43	70.70	3.42	74.12	91.12	0.050
3	1666.85	0.54	111.38	1.67	113.05	835.62	0.094
3	1669.00	1.08	111.38	2.12	113.51	663.24	0.094
3	1672.00	3.36	111.38	3.17	114.55	454.35	0.094
3	1673.50	2.77	111.38	2.96	114.34	484.34	0.094
3	1678.00	4.83	111.38	3.61	115.00	402.42	0.094
3	1681.00	6.37	111.38	3.99	115.37	367.01	0.094
3	1684.50	8.38	111.38	4.41	115.79	334.93	0.094
3	1687.50	9.37	111.38	4.59	115.97	322.72	0.094
4	1650.45	0.88	106.11	2.04	108.15	725.20	0.095
4	1654.00	1.76	106.11	2.60	108.71	575.58	0.095
4	1657.00	3.42	106.11	3.29	109.40	461.02	0.095
4	1659.50	3.59	106.11	3.35	109.46	453.80	0.095
4	1662.50	4.54	106.11	3.64	109.75	419.54	0.095
4	1665.50	5.93	106.11	4.01	110.12	384.03	0.095
4	1668.50	7.40	106.11	4.34	110.45	356.62	0.095
4	1671.00	8.59	106.11	4.58	110.69	339.34	0.095
5	1629.35	0.90	99.14	2.14	101.29	735.37	0.096
5	1633.00	1.80	99.14	2.73	101.87	583.66	0.096
5	1636.00	3.51	99.14	3.46	102.60	467.02	0.096
5	1639.50	4.83	99.14	3.87	103.01	419.71	0.096
5	1642.50	5.54	99.14	4.07	103.21	400.96	0.096
5	1645.50	6.83	99.14	4.38	103.52	373.93	0.096
5	1648.50	8.03	99.14	4.64	103.79	354.32	0.096
5	1651.50	9.37	99.14	4.91	104.05	336.57	0.096
6	1610.05	0.74	77.11	2.14	79.26	706.03	0.091
6	1613.00	1.47	77.11	2.72	79.84	560.37	0.091
6	1617.50	5.01	77.11	4.19	81.30	372.53	0.091
6	1621.50	6.98	77.11	4.71	81.82	333.63	0.091
6	1624.00	6.43	77.11	4.57	81.69	342.92	0.091
6	1627.00	7.19	77.11	4.76	81.87	330.38	0.091
6	1630.00	9.17	77.11	5.19	82.31	304.62	0.091
6	1633.50	10.71	77.11	5.49	82.60	289.26	0.091
7	1594.65	0.71	61.45	2.39	63.83	729.86	0.092
7	1597.50	1.42	61.45	3.03	64.48	579.29	0.092
7	1601.50	4.72	61.45	4.60	66.04	388.63	0.092
7	1604.50	5.74	61.45	4.92	66.37	364.08	0.092
7	1607.00	5.64	61.45	4.89	66.34	366.19	0.092
7	1609.50	5.70	61.45	4.91	66.36	364.86	0.092
7	1612.50	7.64	61.45	5.45	66.89	330.95	0.092
7	1616.50	9.59	61.45	5.90	67.35	306.75	0.092
8	1576.15	0.55	85.43	1.94	87.38	864.97	0.096
8	1578.50	1.10	85.43	2.47	87.90	686.53	0.096
8	1582.00	4.06	85.43	3.89	89.32	444.79	0.096
8	1585.50	6.42	85.43	4.58	90.01	381.90	0.096
8	1588.00	5.48	85.43	4.33	89.76	402.41	0.096
8	1590.50	5.39	85.43	4.30	89.73	404.75	0.096
8	1593.00	6.72	85.43	4.65	90.09	375.98	0.096
8	1596.50	8.69	85.43	5.10	90.53	345.12	0.096
9	1562.60	0.37	52.43	2.69	55.11	1576.84	0.121
9	1564.00	0.73	52.43	3.40	55.83	1251.53	0.121
9	1567.50	2.56	52.43	5.22	57.65	824.32	0.121
9	1571.50	5.13	52.43	6.64	59.06	653.87	0.121
9	1574.00	5.82	52.43	6.94	59.36	626.70	0.121
9	1577.00	6.98	52.43	7.39	59.82	589.80	0.121
9	1579.50	8.26	52.43	7.84	60.26	557.59	0.121
9	1583.00	11.11	52.43	8.69	61.12	505.22	0.121
10	1555.90	0.27	75.47	1.97	77.44	1620.95	0.117
10	1557.00	0.55	75.47	2.49	77.96	1286.50	0.117
10	1560.00	1.96	75.47	3.85	79.32	842.65	0.117
10	1563.00	3.74	75.47	4.81	80.28	679.14	0.117
10	1566.00	4.99	75.47	5.32	80.79	616.94	0.117
10	1569.00	7.10	75.47	6.02	81.49	548.32	0.117
10	1572.00	8.26	75.47	6.34	81.82	521.37	0.117
10	1575.00	10.84	75.47	6.98	82.45	476.27	0.117

Number of Intermediate Cross-Sections (NN(NS)) 98

Number of Time Steps (NNU) 28

INITIAL CONDITIONS TABLE :

Cross Section Number I	Cross Section Location XI (mi)	Normal Flow Water Elevation YN (ft MSL)	Normal Flow Depth DEPN (ft)	Critical Flow Water Elevation YC (ft MSL)	Critical Flow Depth DEPC (ft)	Froude Indicator (0 = sub) (1 = sup) IFR	Iteration Count for Computing Nrml Dpth ITN	Iteration Count for Computing Crtl Dpth ITC
1	0.000	1704.91	10.21	1703.80	9.10	0	12	12
2	0.002	1704.61	10.11	1703.55	9.04	0	12	12
3	0.004	1704.33	10.02	1703.30	8.99	0	12	12
4	0.006	1704.05	9.93	1703.06	8.94	0	12	12
5	0.008	1703.78	9.85	1702.81	8.89	0	12	12
6	0.010	1703.51	9.78	1702.57	8.84	0	12	12
7	0.012	1703.25	9.72	1702.33	8.80	0	12	12
8	0.014	1702.99	9.65	1702.10	8.76	0	12	12
9	0.016	1702.73	9.58	1701.86	8.72	0	12	12
10	0.018	1702.48	9.53	1701.63	8.68	0	12	12
11	0.020	1702.24	9.48	1701.39	8.64	0	12	12
12	0.022	1701.99	9.43	1701.16	8.60	0	12	12
13	0.024	1701.75	9.38	1700.94	8.57	0	12	12
14	0.026	1701.51	9.34	1700.71	8.53	0	12	12
15	0.028	1701.29	9.30	1700.49	8.51	0	12	12
16	0.030	1701.06	9.27	1700.26	8.48	0	12	12
17	0.032	1700.83	9.24	1700.04	8.45	0	12	12
18	0.034	1700.61	9.21	1699.82	8.42	0	12	12
19	0.036	1700.39	9.19	1699.60	8.40	0	12	12
20	0.038	1700.17	9.16	1699.38	8.37	0	12	12
21	0.040	1699.96	9.15	1699.16	8.35	0	12	12
22	0.042	1699.75	9.12	1698.95	8.32	0	12	12
23	0.044	1699.54	9.11	1698.73	8.30	0	12	12
24	0.046	1699.33	9.09	1698.52	8.28	0	12	12
25	0.048	1699.12	9.08	1698.31	8.26	0	12	12
26	0.050	1698.92	9.07	1698.09	8.24	0	12	12
27	0.052	1698.72	9.07	1697.89	8.23	0	12	12
28	0.054	1698.52	9.06	1697.69	8.23	0	12	12
29	0.056	1698.31	9.05	1697.49	8.23	0	12	12
30	0.058	1698.12	9.05	1697.30	8.23	0	12	12
31	0.060	1697.92	9.05	1697.11	8.23	0	12	12
32	0.062	1697.72	9.04	1696.91	8.23	0	12	12
33	0.064	1697.52	9.04	1696.72	8.23	0	12	12
34	0.066	1697.33	9.03	1696.53	8.24	0	12	12
35	0.068	1697.13	9.03	1696.34	8.24	0	12	12
36	0.070	1696.94	9.03	1696.15	8.24	0	12	12
37	0.072	1696.74	9.03	1695.95	8.24	0	12	12
38	0.074	1696.54	9.03	1695.77	8.25	0	12	12
39	0.076	1696.34	9.02	1695.57	8.25	0	12	12
40	0.078	1696.14	9.01	1695.38	8.25	0	12	12
41	0.080	1695.95	9.01	1695.19	8.25	0	12	12
42	0.082	1695.75	9.01	1694.99	8.25	0	12	12
43	0.084	1695.54	9.00	1694.79	8.25	0	12	12
44	0.086	1695.34	8.99	1694.60	8.24	0	12	12
45	0.088	1695.14	8.98	1694.40	8.24	0	12	12
46	0.090	1694.93	8.97	1694.20	8.23	0	12	12
47	0.092	1694.75	8.98	1694.00	8.23	0	12	12
48	0.094	1694.59	9.02	1693.79	8.22	0	12	12
49	0.096	1694.42	9.03	1693.59	8.21	0	12	12

Cross Section Number I	Cross Section Location XI (mi)	Normal Flow Water Elevation YN (ft MSL)	Normal Flow Depth DEPN (ft)	Critical Flow Water Elevation YC (ft MSL)	Critical Flow Depth DEPC (ft)	Froude Indicator (0 = sub) (1 = sup) IFR	Iteration Count for Computing Nrml Dpth ITN	Iteration Count for Computing Crtl Dpth ITC
50	0.098	1694.24	9.05	1693.38	8.19	0	12	12
51	0.100	1694.04	9.05	1693.18	8.18	0	12	12
52	0.102	1694.07	9.27	1692.96	8.16	0	12	12
53	0.112	1692.96	8.90	1691.95	7.89	0	12	12
54	0.123	1691.84	8.52	1690.96	7.64	0	12	12
55	0.133	1690.84	8.26	1689.99	7.41	0	12	12
56	0.144	1689.86	8.02	1689.03	7.19	0	12	12
57	0.154	1688.90	7.80	1688.08	6.98	0	12	12
58	0.165	1687.95	7.59	1687.15	6.79	0	12	12
59	0.175	1687.01	7.39	1686.23	6.61	0	12	12
60	0.186	1686.08	7.20	1685.31	6.43	0	12	12
61	0.196	1685.16	7.02	1684.41	6.27	0	12	12
62	0.207	1684.25	6.85	1683.51	6.11	0	12	12
63	0.217	1683.35	6.69	1682.62	5.96	0	12	12
64	0.228	1682.45	6.53	1681.73	5.81	0	12	12
65	0.238	1681.55	6.37	1680.85	5.67	0	12	12
66	0.249	1680.66	6.22	1679.97	5.53	0	12	12
67	0.259	1680.78	7.08	1679.10	5.40	0	12	12
68	0.290	1678.07	7.79	1676.36	6.08	0	12	12
69	0.320	1675.39	8.54	1673.60	6.75	0	12	12
70	0.351	1672.74	9.32	1670.69	7.27	0	12	12
71	0.382	1670.22	10.22	1667.38	7.38	0	12	12
72	0.442	1663.61	9.98	1661.19	7.56	0	12	12
73	0.502	1657.01	9.75	1654.82	7.55	0	12	12
74	0.562	1650.59	9.69	1648.43	7.53	0	12	12
75	0.620	1644.89	9.76	1642.54	7.42	0	12	12
76	0.678	1639.11	9.76	1636.58	7.23	0	12	12
77	0.737	1633.27	9.70	1630.53	6.95	0	12	12
78	0.795	1627.67	9.87	1624.49	6.69	0	12	12
79	0.845	1623.66	9.73	1620.52	6.60	0	12	12
80	0.895	1619.64	9.59	1616.56	6.51	0	12	12
81	0.946	1615.62	9.44	1612.59	6.41	0	12	12
82	0.996	1612.17	9.87	1608.62	6.32	0	12	12
83	1.046	1609.27	10.03	1605.62	6.38	0	12	12
84	1.096	1606.37	10.19	1602.61	6.43	0	12	12
85	1.145	1603.68	10.56	1599.60	6.48	0	12	12
86	1.195	1600.60	10.54	1596.67	6.61	0	12	12
87	1.245	1596.90	9.90	1593.84	6.84	0	12	12
88	1.296	1592.06	9.40	1588.80	6.14	0	12	12
89	1.347	1586.80	8.48	1584.00	5.68	0	12	12
90	1.397	1581.83	7.85	1579.27	5.29	0	12	12
91	1.448	1576.97	7.33	1574.57	4.93	0	12	12
92	1.499	1573.95	8.65	1569.90	4.60	0	12	12
93	1.533	1571.35	7.85	1567.98	4.48	0	12	12
94	1.568	1568.80	7.10	1565.92	4.22	0	12	12
95	1.602	1565.82	5.92	1563.79	3.89	0	12	12
96	1.637	1563.68	6.45	1561.43	4.20	0	12	12
97	1.673	1561.75	7.18	1559.21	4.64	0	12	12
98	1.708	1560.22	8.32	1557.30	5.40	0	12	12

SUMMARY OF INITIAL DOWNSTREAM BOUNDARY CONDITIONS :

Cross-section Number at Downstream End of Model (IN)	98
Initial Water Surface Elev. at Downstream End (YNN, ft MSL)	1561.054
Initial Flow Depth at Downstream End (DEP, ft)	9.154

COMPUTED STEP BACKWATER TABLE :

Cross Section Number I	Cross Section Location X (mi)	Flow QIL (cfs)	Backwater Water Surface Elevation YIL (ft MSL)	Backwater Water Depth DEP (ft)	Iteration Count for Computing Backwater ITB
96	1.637	6481.0	1564.232	6.999	3
95	1.602	6481.0	1566.124	6.224	3
94	1.568	6481.0	1568.377	6.677	3
93	1.533	6481.0	1570.823	7.323	3
92	1.499	6481.0	1573.268	7.968	3
91	1.448	6481.0	1576.501	6.861	3
90	1.397	6481.0	1581.730	7.750	2
89	1.347	6481.0	1586.516	8.196	4
88	1.296	6481.0	1591.680	9.020	4
87	1.245	6481.0	1596.736	9.736	4
86	1.195	6481.0	1600.513	10.453	4
85	1.145	6481.0	1603.641	10.521	4
84	1.096	6481.0	1606.608	10.428	4
83	1.046	6481.0	1609.440	10.200	4
82	0.996	6481.0	1612.300	10.000	3
81	0.946	6481.0	1615.542	9.367	3
80	0.895	6481.0	1619.579	9.529	3
79	0.845	6481.0	1623.599	9.674	3
78	0.795	6481.0	1627.617	9.817	3
77	0.737	6481.0	1633.197	9.622	3
76	0.678	6481.0	1639.157	9.807	3
75	0.620	6481.0	1644.923	9.798	4
74	0.562	6481.0	1650.642	9.742	3
73	0.502	6481.0	1656.862	9.596	3
72	0.442	6481.0	1663.620	9.987	3
71	0.382	6481.0	1670.155	10.155	4
70	0.351	6481.0	1673.165	9.740	4
69	0.320	6481.0	1675.759	8.909	4
68	0.290	6481.0	1678.414	8.139	4
67	0.259	6481.0	1681.105	7.405	3
66	0.249	6481.0	1681.211	6.771	4
65	0.238	6481.0	1681.504	6.324	4
64	0.228	6481.0	1682.192	6.272	4
63	0.217	6481.0	1683.091	6.431	4
62	0.207	6481.0	1683.977	6.577	5
61	0.196	6481.0	1684.873	6.733	5
60	0.186	6481.0	1685.773	6.893	5
59	0.175	6481.0	1686.681	7.061	5
58	0.165	6481.0	1687.596	7.236	5
57	0.154	6481.0	1688.520	7.420	5
56	0.144	6481.0	1689.453	7.613	5
55	0.133	6481.0	1690.398	7.818	5
54	0.123	6481.0	1691.355	8.035	5
53	0.112	6481.0	1692.328	8.268	5
52	0.102	6481.0	1693.418	8.618	5
51	0.100	6481.0	1693.531	8.537	6

Cross Section Number I	Cross Section Location X (mi)	Flow QIL (cfs)	Backwater Water Surface Elevation YIL (ft MSL)	Backwater Water Depth DEP (ft)	Iteration Count for Computing Backwater ITB
50	0.098	6481.0	1693.688	8.500	6
49	0.096	6481.0	1693.872	8.490	6
48	0.094	6481.0	1694.076	8.499	6
47	0.092	6481.0	1694.284	8.513	6
46	0.090	6481.0	1694.491	8.527	6
45	0.088	6481.0	1694.697	8.538	6
44	0.086	6481.0	1694.901	8.548	6
43	0.084	6481.0	1695.102	8.555	6
42	0.082	6481.0	1695.303	8.562	6
41	0.080	6481.0	1695.501	8.566	6
40	0.078	6481.0	1695.699	8.569	6
39	0.076	6481.0	1695.895	8.571	6
38	0.074	6481.0	1696.089	8.571	6
37	0.072	6481.0	1696.282	8.571	6
36	0.070	6481.0	1696.475	8.569	6
35	0.068	6481.0	1696.666	8.566	6
34	0.066	6481.0	1696.856	8.562	6
33	0.064	6481.0	1697.046	8.558	6
32	0.062	6481.0	1697.235	8.553	6
31	0.060	6481.0	1697.424	8.547	6
30	0.058	6481.0	1697.612	8.541	6
29	0.056	6481.0	1697.799	8.535	6
28	0.054	6481.0	1697.987	8.528	6
27	0.052	6481.0	1698.175	8.522	6
26	0.050	6481.0	1698.364	8.517	6
25	0.048	6481.0	1698.552	8.511	6
24	0.046	6481.0	1698.740	8.505	6
23	0.044	6481.0	1698.933	8.504	6
22	0.042	6481.0	1699.134	8.510	6
21	0.040	6481.0	1699.338	8.521	6
20	0.038	6481.0	1699.543	8.531	6
19	0.036	6481.0	1699.749	8.543	6
18	0.034	6481.0	1699.953	8.553	7
17	0.032	6481.0	1700.163	8.568	7
16	0.030	6481.0	1700.368	8.580	7
15	0.028	6481.0	1700.579	8.596	7
14	0.026	6481.0	1700.783	8.607	7
13	0.024	6481.0	1701.012	8.641	7
12	0.022	6481.0	1701.167	8.602	13
11	0.020	6481.0	1701.560	8.801	6
10	0.018	6481.0	1701.631	8.679	13
9	0.016	6481.0	1701.937	8.790	7
8	0.014	6481.0	1702.100	8.759	13
7	0.012	6481.0	1702.333	8.798	13
6	0.010	6481.0	1702.573	8.844	13
5	0.008	6481.0	1702.812	8.889	13
4	0.006	6481.0	1703.058	8.940	13
3	0.004	6481.0	1703.303	8.991	13
2	0.002	6481.0	1703.548	9.042	13
1	0.000	6481.0	1703.800	9.100	13

INITIAL CONDITIONS :

Interp. Cross-Section I	Initial Water Elevation YI(I) (ft MSL)	Initial Flow QDI(I) (cfs)
1	1703.80	6481.0
2	1703.55	6481.0
3	1703.30	6481.0
4	1703.06	6481.0
5	1702.81	6481.0
6	1702.57	6481.0
7	1702.33	6481.0
8	1702.10	6481.0
9	1701.94	6481.0
10	1701.63	6481.0
11	1701.56	6481.0
12	1701.17	6481.0
13	1701.01	6481.0
14	1700.78	6481.0
15	1700.58	6481.0
16	1700.37	6481.0
17	1700.16	6481.0
18	1699.95	6481.0
19	1699.75	6481.0
20	1699.54	6481.0
21	1699.34	6481.0
22	1699.13	6481.0
23	1698.93	6481.0
24	1698.74	6481.0
25	1698.55	6481.0
26	1698.36	6481.0
27	1698.18	6481.0
28	1697.99	6481.0
29	1697.80	6481.0
30	1697.61	6481.0
31	1697.42	6481.0
32	1697.24	6481.0
33	1697.05	6481.0
34	1696.86	6481.0
35	1696.67	6481.0
36	1696.48	6481.0
37	1696.28	6481.0
38	1696.09	6481.0
39	1695.89	6481.0
40	1695.70	6481.0
41	1695.50	6481.0
42	1695.30	6481.0
43	1695.10	6481.0
44	1694.90	6481.0
45	1694.70	6481.0
46	1694.49	6481.0

INITIAL CONDITIONS :

Interp. Cross-Section I	Initial Water Elevation YI(I) (ft MSL)	Initial Flow QDI(I) (cfs)
47	1694.28	6481.0
48	1694.08	6481.0
49	1693.87	6481.0
50	1693.69	6481.0
51	1693.53	6481.0
52	1693.42	6481.0
53	1692.33	6481.0
54	1691.36	6481.0
55	1690.40	6481.0
56	1689.45	6481.0
57	1688.52	6481.0
58	1687.60	6481.0
59	1686.68	6481.0
60	1685.77	6481.0
61	1684.87	6481.0
62	1683.98	6481.0
63	1683.09	6481.0
64	1682.19	6481.0
65	1681.50	6481.0
66	1681.21	6481.0
67	1681.10	6481.0
68	1678.41	6481.0
69	1675.76	6481.0
70	1673.16	6481.0
71	1670.15	6481.0
72	1663.62	6481.0
73	1656.86	6481.0
74	1650.64	6481.0
75	1644.92	6481.0
76	1639.16	6481.0
77	1633.20	6481.0
78	1627.62	6481.0
79	1623.60	6481.0
80	1619.58	6481.0
81	1615.54	6481.0
82	1612.30	6481.0
83	1609.44	6481.0
84	1606.61	6481.0
85	1603.64	6481.0
86	1600.51	6481.0
87	1596.74	6481.0
88	1591.68	6481.0
89	1586.52	6481.0
90	1581.73	6481.0
91	1576.50	6481.0
92	1573.27	6481.0
93	1570.82	6481.0

INITIAL CONDITIONS :

Interp. Cross-Section I	Initial Water Elevation YI(I) (ft MSL)	Initial Flow QDI(I) (cfs)
94	1568.38	6481.0
95	1566.12	6481.0
96	1564.23	6481.0
97	1562.60	6481.0
98	1561.05	6481.0

DAM OUTFLOW HYDROGRAPH TIME PARAMETERS :

Time to Failure (TFH, hr)	0.250
Time to Start of Rising Limb of Hydrograph (TFO, hr)	0.000
Time to Peak (TP, hr)	0.250
Time Step Size (DTHI, hr)	0.013

ROUTING COMPLETED :

Number of Time Steps Used (KTIME)	104
Maximum Number of Time Steps Allowed	2999
Total Time of Flood Routing (TT, hr)	0.8
Flood Wave Arrival Time based upon a WSEL Increase of (ft)	1.00

CONSERVATION OF MASS RESULTS :

Should be close to 0.00%, a negative value denotes flow volume was lost during the routing, a positive value denotes flow volume was gained during the routing. Normalized as a percent of inflow volume, maximum change in conservation of mass during routing was 0.12

FLOOD CREST SUMMARY :

Cross Section Location (mi)	Maximum Stage Elevation (ft MSL)	Maximum Flow (cfs)	Time To Maximum Stage (hr)	Maximum Flow Velocity (ft/sec)	Flood Elevation (ft MSL)	Time To Flood Elevation (hr)	Flood Wave Arrival Time (hr)
0.000	1710.53	13734	0.250	17.26	0.00	0.00	0.03
0.002	1707.54	13733	0.250	21.58	33.14	0.00	0.05
0.004	1707.20	13733	0.250	21.55	66.27	0.00	0.05
0.006	1706.87	13733	0.250	21.48	99.41	0.00	0.05
0.008	1706.57	13733	0.250	21.38	132.55	0.00	0.05
0.010	1706.27	13732	0.250	21.27	165.69	0.00	0.05
0.012	1705.99	13732	0.250	21.14	198.82	0.00	0.05
0.014	1705.72	13732	0.250	20.99	231.96	0.00	0.05
0.016	1705.46	13732	0.250	20.83	265.10	0.00	0.05
0.018	1705.20	13732	0.250	20.67	298.24	0.00	0.05
0.020	1704.95	13732	0.250	20.50	331.37	0.00	0.05
0.022	1704.71	13731	0.250	20.32	364.51	0.00	0.05
0.024	1704.47	13731	0.250	20.13	397.65	0.00	0.05
0.026	1704.23	13731	0.250	19.94	430.78	0.00	0.05
0.028	1704.00	13731	0.250	19.75	463.92	0.00	0.05
0.030	1703.77	13731	0.250	19.55	497.06	0.00	0.05
0.032	1703.54	13730	0.250	19.36	530.20	0.00	0.05
0.034	1703.31	13730	0.250	19.16	563.33	0.00	0.05
0.036	1703.09	13730	0.250	18.96	596.47	0.00	0.05
0.038	1702.86	13730	0.250	18.76	629.61	0.00	0.05
0.040	1702.64	13730	0.250	18.56	662.75	0.00	0.05
0.042	1702.42	13729	0.250	18.36	695.88	0.00	0.05
0.044	1702.20	13729	0.250	18.16	729.02	0.00	0.05
0.046	1701.98	13729	0.250	17.96	762.16	0.00	0.05
0.048	1701.76	13729	0.250	17.76	795.29	0.00	0.05
0.050	1701.53	13729	0.250	17.56	828.43	0.00	0.05
0.052	1701.31	13728	0.250	17.36	861.57	0.00	0.05
0.054	1701.09	13728	0.250	17.16	894.71	0.00	0.05
0.056	1700.87	13728	0.250	16.95	927.84	0.00	0.05
0.058	1700.66	13728	0.250	16.73	960.98	0.00	0.05
0.060	1700.45	13727	0.250	16.51	994.12	0.00	0.05
0.062	1700.24	13727	0.250	16.27	1027.26	0.00	0.05
0.064	1700.02	13727	0.250	16.04	1060.39	0.00	0.05
0.066	1699.81	13726	0.250	15.80	1093.53	0.00	0.05
0.068	1699.59	13726	0.250	15.56	1126.67	0.00	0.05
0.070	1699.38	13726	0.250	15.32	1159.80	0.00	0.05
0.072	1699.16	13726	0.250	15.08	1192.94	0.00	0.08
0.074	1698.93	13725	0.250	14.84	1226.08	0.00	0.08
0.076	1698.71	13725	0.250	14.61	1259.22	0.00	0.08
0.078	1698.48	13725	0.250	14.39	1292.35	0.00	0.08
0.080	1698.24	13724	0.250	14.16	1325.49	0.00	0.08
0.082	1698.00	13724	0.250	13.95	1358.63	0.00	0.08
0.084	1697.76	13724	0.250	13.73	1391.76	0.00	0.08
0.086	1697.51	13723	0.250	13.53	1424.90	0.00	0.08
0.088	1697.26	13723	0.250	13.32	1458.04	0.00	0.08
0.090	1697.01	13723	0.250	13.13	1491.18	0.00	0.08
0.092	1696.75	13722	0.250	12.94	1524.31	0.00	0.08
0.094	1696.49	13722	0.250	12.92	1557.45	0.00	0.08

FLOOD CREST SUMMARY :

Cross Section Location (mi)	Maximum Stage Elevation (ft MSL)	Maximum Flow (cfs)	Time To Maximum Stage (hr)	Maximum Flow Velocity (ft/sec)	Flood Elevation (ft MSL)	Time To Flood Elevation (hr)	Flood Wave Arrival Time (hr)
0.096	1696.22	13721	0.250	12.57	1590.59	0.00	0.08
0.098	1695.94	13721	0.250	12.43	1623.72	0.00	0.08
0.100	1695.65	13721	0.250	12.32	1656.86	0.00	0.08
0.102	1695.90	13721	0.250	10.77	1690.00	0.00	0.05
0.112	1695.00	13719	0.250	10.55	1689.20	0.00	0.08
0.123	1694.07	13717	0.250	10.47	1688.40	0.00	0.08
0.133	1693.03	13714	0.250	10.63	1687.60	0.00	0.10
0.144	1691.98	13711	0.250	10.80	1686.80	0.00	0.10
0.154	1690.93	13708	0.250	10.93	1686.00	0.00	0.13
0.165	1689.88	13706	0.250	11.03	1685.20	0.00	0.15
0.175	1688.88	13703	0.250	11.03	1684.40	0.00	0.18
0.186	1687.92	13700	0.250	10.93	1683.60	0.00	0.20
0.196	1686.97	13698	0.250	10.82	1682.80	0.00	0.00
0.207	1686.03	13696	0.250	10.70	1682.00	0.00	0.00
0.217	1685.09	13693	0.250	10.61	1681.20	0.00	0.00
0.228	1684.28	13690	0.250	10.25	1680.40	0.00	0.00
0.238	1683.86	13686	0.263	9.10	1679.60	0.00	0.20
0.249	1683.69	13682	0.263	7.70	1678.80	0.00	0.13
0.259	1683.61	13677	0.263	6.50	1678.00	0.00	0.08
0.290	1680.89	13669	0.263	6.26	1675.50	0.00	0.10
0.320	1678.20	13660	0.263	6.02	1673.00	0.00	0.10
0.351	1675.55	13645	0.275	5.77	1670.50	0.00	0.10
0.382	1672.55	13636	0.275	5.99	1668.00	0.00	0.10
0.442	1666.10	13611	0.287	6.11	1660.67	0.00	0.13
0.502	1659.40	13585	0.300	6.54	1653.33	0.00	0.15
0.562	1653.33	13557	0.312	6.15	1646.00	0.00	0.15
0.620	1647.91	13529	0.325	6.30	1640.00	0.00	0.15
0.678	1642.52	13499	0.337	6.44	1634.00	0.00	0.15
0.737	1637.10	13466	0.350	6.84	1628.00	0.00	0.18
0.795	1631.91	13423	0.362	6.98	1622.00	0.00	0.18
0.845	1628.01	13384	0.375	7.18	1619.00	0.00	0.18
0.895	1624.10	13340	0.400	7.40	1616.00	0.00	0.20
0.946	1620.32	13293	0.412	7.36	1613.00	0.00	0.23
0.996	1616.95	13248	0.425	6.53	1610.00	0.00	0.20
1.046	1613.70	13208	0.425	6.19	1606.80	0.00	0.18
1.096	1610.37	13171	0.437	5.91	1603.60	0.00	0.18
1.145	1606.97	13136	0.450	5.70	1600.40	0.00	0.18
1.195	1603.53	13102	0.462	5.52	1597.20	0.00	0.20
1.245	1599.75	13070	0.475	5.75	1594.00	0.00	0.25
1.296	1595.17	13030	0.500	6.12	1589.20	0.00	0.28
1.347	1590.41	12982	0.512	6.78	1584.40	0.00	0.32
1.397	1585.09	12948	0.512	7.40	1579.60	0.00	0.37
1.448	1579.55	12929	0.537	7.98	1574.80	0.00	0.42
1.499	1576.04	12898	0.550	6.59	1570.00	0.00	0.32
1.533	1573.18	12882	0.550	5.24	1566.67	0.00	0.35
1.568	1570.44	12869	0.562	4.46	1563.33	0.00	0.37
1.602	1568.25	12847	0.575	3.56	1560.00	0.00	0.37
1.637	1566.46	12822	0.587	3.50	1560.00	0.00	0.40

FLOOD CREST SUMMARY :

Cross Section Location (mi)	Maximum Stage Elevation (ft MSL)	Maximum Flow (cfs)	Time To Maximum Stage (hr)	Maximum Flow Velocity (ft/sec)	Flood Elevation (ft MSL)	Time To Flood Elevation (hr)	Flood Wave Arrival Time (hr)
1.673	1564.72	12796	0.587	3.47	1560.00	0.00	0.40
1.708	1562.99	12770	0.600	3.50	1560.00	0.00	0.40

COMPUTED WATER SURFACE ELEVATIONS AT REQUESTED
STATIONS WHERE HYDROGRAPHS ARE PLOTTED :

Time Step Count K	Elapsed Time TTP(K) (hr)	Station 1 Water Surface Elevation YC(K,1) (ft MSL)	Station 2 Water Surface Elevation YC(K,2) (ft MSL)	Station 3 Water Surface Elevation YC(K,3) (ft MSL)	Station 4 Water Surface Elevation YC(K,4) (ft MSL)	Station 5 Water Surface Elevation YC(K,5) (ft MSL)	Station 6 Water Surface Elevation YC(K,6) (ft MSL)
1	0.000	1704.91	1693.42	1670.16	1627.62	1596.74	1561.05
3	0.025	1706.17	1693.96	1670.20	1627.62	1596.74	1561.05
5	0.050	1707.34	1694.59	1670.39	1627.62	1596.74	1561.05
7	0.075	1708.42	1695.11	1670.78	1627.66	1596.74	1561.06
9	0.100	1709.11	1695.42	1671.25	1627.79	1596.74	1561.06
11	0.125	1709.61	1695.58	1671.66	1628.07	1596.75	1561.06
13	0.150	1710.09	1695.73	1671.98	1628.52	1596.81	1561.06
15	0.175	1710.42	1695.85	1672.22	1629.06	1596.94	1561.07
17	0.200	1710.46	1695.87	1672.39	1629.73	1597.16	1561.08
19	0.225	1710.49	1695.89	1672.48	1630.43	1597.45	1561.11
21	0.250	1710.53	1695.90	1672.53	1630.99	1597.77	1561.16
23	0.275	1710.34	1695.86	1672.55	1631.40	1598.07	1561.26
25	0.300	1710.14	1695.80	1672.53	1631.66	1598.39	1561.40
27	0.325	1709.95	1695.74	1672.48	1631.82	1598.71	1561.57
29	0.350	1709.68	1695.67	1672.42	1631.90	1599.02	1561.77
31	0.375	1709.38	1695.58	1672.34	1631.91	1599.30	1561.98
33	0.400	1709.07	1695.49	1672.25	1631.87	1599.51	1562.18
35	0.425	1708.76	1695.40	1672.14	1631.79	1599.65	1562.36
37	0.450	1708.43	1695.29	1672.03	1631.67	1599.72	1562.52
39	0.475	1708.10	1695.17	1671.91	1631.53	1599.75	1562.66
41	0.500	1707.76	1695.05	1671.78	1631.36	1599.74	1562.78
43	0.525	1707.45	1694.92	1671.65	1631.17	1599.69	1562.87
45	0.550	1707.13	1694.77	1671.52	1630.97	1599.62	1562.93
47	0.575	1706.81	1694.61	1671.38	1630.75	1599.52	1562.97
49	0.600	1706.49	1694.44	1671.24	1630.52	1599.41	1562.99
51	0.625	1706.17	1694.28	1671.10	1630.27	1599.29	1562.98
53	0.639	1705.99	1694.18	1671.02	1630.13	1599.21	1562.96
55	0.642	1705.95	1694.16	1671.01	1630.09	1599.20	1562.96
57	0.645	1705.91	1694.13	1670.99	1630.06	1599.18	1562.96
59	0.653	1705.80	1694.07	1670.94	1629.97	1599.13	1562.95
61	0.655	1705.78	1694.06	1670.93	1629.96	1599.12	1562.95
63	0.656	1705.76	1694.05	1670.93	1629.94	1599.12	1562.94
65	0.658	1705.74	1694.04	1670.92	1629.92	1599.11	1562.94
67	0.666	1705.64	1693.99	1670.87	1629.83	1599.06	1562.93
69	0.668	1705.61	1693.98	1670.86	1629.80	1599.05	1562.92
71	0.671	1705.57	1693.96	1670.84	1629.77	1599.03	1562.92
73	0.673	1705.56	1693.94	1670.83	1629.75	1599.02	1562.92
75	0.674	1705.54	1693.92	1670.82	1629.73	1599.01	1562.91
77	0.677	1705.51	1693.90	1670.81	1629.70	1599.00	1562.91
79	0.684	1705.43	1693.85	1670.76	1629.60	1598.95	1562.89
81	0.687	1705.39	1693.82	1670.74	1629.56	1598.93	1562.88
83	0.695	1705.30	1693.76	1670.70	1629.46	1598.88	1562.86
85	0.698	1705.27	1693.74	1670.68	1629.42	1598.86	1562.86
87	0.711	1705.12	1693.64	1670.61	1629.24	1598.78	1562.82
89	0.730	1704.90	1693.49	1670.50	1628.99	1598.65	1562.77
91	0.748	1704.68	1693.42	1670.39	1628.78	1598.52	1562.71
93	0.761	1704.56	1693.42	1670.33	1628.65	1598.43	1562.67
95	0.773	1704.45	1693.42	1670.27	1628.53	1598.34	1562.63
97	0.786	1704.34	1693.42	1670.23	1628.41	1598.25	1562.59

Time Step Count K	Elapsed Time TTP(K) (hr)	Station 1 Water Surface Elevation YC(K,1) (ft MSL)	Station 2 Water Surface Elevation YC(K,2) (ft MSL)	Station 3 Water Surface Elevation YC(K,3) (ft MSL)	Station 4 Water Surface Elevation YC(K,4) (ft MSL)	Station 5 Water Surface Elevation YC(K,5) (ft MSL)	Station 6 Water Surface Elevation YC(K,6) (ft MSL)
99	0.798	1704.22	1693.42	1670.20	1628.30	1598.14	1562.55
101	0.805	1704.16	1693.42	1670.19	1628.24	1598.08	1562.52
103	0.820	1704.03	1693.42	1670.18	1628.13	1597.96	1562.47

COMPUTED DISCHARGES AT REQUESTED
STATIONS WHERE HYDROGRAPHS ARE PLOTTED :

Time Step Count K	Elapsed Time (x 1000) TTP(K) (hr)	Station 1 Discharge (x 1000) QC(K,1) (cfs)	Station 2 Discharge (x 1000) QC(K,2) (cfs)	Station 3 Discharge (x 1000) QC(K,3) (cfs)	Station 4 Discharge (x 1000) QC(K,4) (cfs)	Station 5 Discharge (x 1000) QC(K,5) (cfs)	Station 6 Discharge (x 1000) QC(K,6) (cfs)
1	0.000	6.48	6.49	6.48	6.48	6.49	6.48
3	0.025	7.90	7.52	6.57	6.48	6.49	6.48
5	0.050	9.32	8.93	7.05	6.49	6.49	6.49
7	0.075	10.73	10.36	8.02	6.56	6.49	6.49
9	0.100	11.67	11.46	9.30	6.77	6.50	6.50
11	0.125	12.38	12.20	10.54	7.24	6.53	6.51
13	0.150	13.08	12.91	11.56	8.02	6.64	6.51
15	0.175	13.57	13.48	12.42	8.94	6.89	6.52
17	0.200	13.62	13.61	13.05	9.91	7.30	6.55
19	0.225	13.68	13.67	13.40	10.94	7.87	6.62
21	0.250	13.73	13.72	13.58	11.86	8.54	6.77
23	0.275	13.45	13.51	13.64	12.56	9.20	7.02
25	0.300	13.16	13.23	13.55	13.03	9.88	7.39
27	0.325	12.87	12.94	13.35	13.31	10.62	7.86
29	0.350	12.49	12.59	13.08	13.42	11.35	8.41
31	0.375	12.05	12.16	12.76	13.39	11.99	9.03
33	0.400	11.62	11.73	12.39	13.26	12.50	9.71
35	0.425	11.18	11.29	11.98	13.04	12.84	10.37
37	0.450	10.74	10.85	11.56	12.75	13.03	11.00
39	0.475	10.30	10.41	11.14	12.41	13.07	11.56
41	0.500	9.86	9.98	10.72	12.05	13.00	12.03
43	0.525	9.46	9.57	10.29	11.66	12.83	12.38
45	0.550	9.06	9.17	9.88	11.27	12.60	12.62
47	0.575	8.66	8.77	9.47	10.87	12.32	12.75
49	0.600	8.27	8.38	9.08	10.47	12.01	12.77
51	0.625	7.90	8.00	8.69	10.08	11.68	12.70
53	0.639	7.68	7.79	8.48	9.86	11.48	12.62
55	0.642	7.64	7.74	8.43	9.82	11.44	12.60
57	0.645	7.59	7.68	8.38	9.77	11.39	12.58
59	0.653	7.47	7.58	8.26	9.65	11.28	12.52
61	0.655	7.45	7.55	8.24	9.63	11.26	12.51
63	0.656	7.42	7.53	8.22	9.60	11.24	12.50
65	0.658	7.40	7.49	8.19	9.58	11.22	12.49
67	0.666	7.28	7.42	8.08	9.46	11.11	12.43
69	0.668	7.25	7.42	8.04	9.43	11.07	12.40
71	0.671	7.21	7.35	8.00	9.38	11.03	12.38
73	0.673	7.19	7.31	7.97	9.36	11.01	12.36
75	0.674	7.17	7.26	7.95	9.34	10.99	12.35
77	0.677	7.14	7.24	7.92	9.30	10.95	12.32
79	0.684	7.04	7.15	7.80	9.19	10.84	12.25
81	0.687	7.00	7.11	7.76	9.14	10.80	12.21
83	0.695	6.91	7.00	7.65	9.03	10.69	12.13
85	0.698	6.87	6.96	7.60	8.99	10.64	12.09
87	0.711	6.71	6.80	7.43	8.81	10.47	11.95
89	0.730	6.48	6.57	7.18	8.54	10.21	11.73
91	0.748	6.48	6.49	6.94	8.21	9.93	11.49
93	0.761	6.48	6.49	6.80	7.99	9.73	11.32
95	0.773	6.48	6.49	6.69	7.80	9.53	11.16
97	0.786	6.48	6.49	6.61	7.62	9.32	10.99

Time Step Count K	Elapsed Time (x 1000) TTP(K) (hr)	Station 1 Discharge (x 1000) QC(K,1) (cfs)	Station 2 Discharge (x 1000) QC(K,2) (cfs)	Station 3 Discharge (x 1000) QC(K,3) (cfs)	Station 4 Discharge (x 1000) QC(K,4) (cfs)	Station 5 Discharge (x 1000) QC(K,5) (cfs)	Station 6 Discharge (x 1000) QC(K,6) (cfs)
99	0.798	6.48	6.49	6.55	7.45	9.10	10.81
101	0.805	6.48	6.49	6.53	7.36	8.97	10.69
103	0.820	6.48	6.48	6.51	7.19	8.72	10.48

END OF OUTPUT

B O S S D A M B R K (tm)

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Version : 3.00
Serial Number : 20568

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PROGRAM ORIGIN :

Boss Dambrk (tm) is an enhanced version of Professor D. L. Fread's 1991 NWS DAMBRK program.

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PROJECT DESCRIPTION :

PROJECT TITLE : Ftn Hills ADMP
PROJECT NUMBER : #63
DESCRIPTION : IDA Analysis:With Dam Failure (0.26PMF)
ENGINEER : CCC/WSO
DATE OF RUN : 10/17/1996
TIME OF RUN : 11:34 am

INPUT DATA SUMMARY :

INPUT CONTROL PARAMETERS :

Problem Specification Option	7	
Number of Dynamic Routing Reaches (KKN)	9	
Type of Reservoir Routing (KUI)	0	(storage routing)
Number of multiple dams/bridges (MULDAM)	0	
No. of Reservoir Inflow Hydrograph Points (ITEH)	23	
No. of Informational Cross-Sections (NPRT)	11	
Flood-Plain Routing (KFLP)	0	(no)

SEQUENTIAL CROSS-SECTION NUMBERS (NPT) :

1 52 59 63 66 70 74 79
84 87 90

BOUNDARY CONDITIONS :

Hydrograph Time Intervals (DHF, hr)	0.00
Routing Period (TEH, hr)	1.00
Breach Development Exponent (BREX)	1.00
Mud/Debris Flow Parameter (MUD)	0
Dry Bed Routing Parameter (IWF)	0
Hydraulic Radius Computation Parameter (KPRES)	1 (R=A/P)
Landslide Simulation (KSL)	0 (none)
Critical Flow Froude Number (DFR)	0.950

INFLOW HYDROGRAPH DESCRIPTION :

Time Elapsed TI(K) (hr)	Upstream Inflow QI(K) (cfs)
0.00	9120.0
0.05	9857.0
0.10	11300.0
0.13	13210.0
0.15	12621.0
0.22	13900.0
0.30	14411.0
0.32	14105.0
0.34	13871.0
0.35	15783.0
0.35	17366.0
0.35	19588.0
0.35	21986.0
0.36	21515.0
0.37	20705.0
0.38	19943.0
0.39	19223.0
0.40	18550.0
0.41	17919.0
0.44	16442.0
0.84	11865.0
0.94	9952.0
1.84	2168.0

SUMMARY OF PROGRAM CONTROL PARAMETERS :

Problem Specification Option (KKN, KUI, MULDAM, IDAM)	7	
Number of Cross-Sections Entered (NS)	11	
Number of Top Widths Entered (NCS)	8	
Number of Cross-Sectional Hydrographs to Plot (NTT)	6	
Flow Type Parameter (KSUPC)	3	(mixed flow)
Number of Lateral Inflow Hydrographs (LQ)	0	
Number of Points in Gate Control Curve (KCG)	0	

CROSS-SECTIONS WHERE HYDROGRAPH REQUESTED :
(maximum allowed = 6)

1 2 4 6 8 11

CHANNEL-VALLEY BOUNDARY CONDITIONS :

Max Discharge at Downstream End (QMAXD, cfs)	0.0
Max Lateral Outflow due to Flood Wave (QLL, cfs/ft)	0.0000
Initial Time-Step Size (DTHM, hr)	0.0100
Time at which Dam Starts to Fail (TFI, hr)	0.0000
Theta Weighting Factor (F1I)	1.000
Stage Convergence Criterion (EPSY, ft)	0.000
Downstream Boundary Type Paramter (YDN)	0.00
Slope of Channel Downstream of Dam (SOM, ft/mi)	0.0000

CROSS-SECTION NUMBER : 1

Cross-Section Location (XS(I), mi) 0.000

Flooding Elevation (FSTG(I), ft MSL) 0.000

DOWNSTREAM REACH NUMBER : 1

Reach Contraction-Expansion Coefficient (FKC) 0.000

Minimum Distance Between Interpolated Cross-Sections (DXM, mi) 0.002

CROSS-SECTION and REACH DESCRIPTION :

Elevation HS(K,I) (ft MSL)	Channel Top Width BS(K,I) (ft)	Channel Manning n CM(K,I)	Storage Top Width BSS(K,I) (ft)
1694.70	0.0	0.0550	0.0
1694.80	38.0	0.0550	0.0
1698.00	43.2	0.0550	0.0
1705.00	54.1	0.0550	0.0
1710.00	62.0	0.0550	0.0
1715.00	69.8	0.0550	0.0
1721.50	80.0	0.0550	0.0
1726.00	87.1	0.0550	0.0

CROSS-SECTION NUMBER : 2

Cross-Section Location (XS(I), mi) 0.102

Flooding Elevation (FSTG(I), ft MSL) 1690.000

DOWNSTREAM REACH NUMBER : 2

Reach Contraction-Expansion Coefficient (FKC) -0.070

Minimum Distance Between Interpolated Cross-Sections (DXM, mi) 0.010

CROSS-SECTION and REACH DESCRIPTION :

Elevation HS(K,I) (ft MSL)	Channel Top Width BS(K,I) (ft)	Channel Manning n CM(K,I)	Storage Top Width BSS(K,I) (ft)
1684.80	0.0	0.0500	0.0
1687.00	31.9	0.0500	0.0
1689.00	84.7	0.0500	0.0
1691.00	100.5	0.0500	0.0
1693.00	158.5	0.0500	0.0
1695.00	271.8	0.0500	0.0
1699.00	311.0	0.0500	0.0
1702.00	460.0	0.0500	0.0

CROSS-SECTION NUMBER : 3

Cross-Section Location (XS(I), mi) 0.259

Flooding Elevation (FSTG(I), ft MSL) 1678.000

DOWNSTREAM REACH NUMBER : 3

Reach Contraction-Expansion Coefficient (FKC) 0.100

Minimum Distance Between Interpolated Cross-Sections (DXM, mi) 0.031

CROSS-SECTION and REACH DESCRIPTION :

Elevation HS(K,I) (ft MSL)	Channel Top Width BS(K,I) (ft)	Channel Manning n CM(K,I)	Storage Top Width BSS(K,I) (ft)
1673.70	0.0	0.0940	0.0
1675.00	83.7	0.0940	0.0
1677.00	123.0	0.0940	0.0
1678.00	217.0	0.0940	0.0
1684.00	390.9	0.0940	0.0
1687.00	485.4	0.0940	0.0
1691.00	624.7	0.0940	0.0
1695.00	814.6	0.0940	0.0

CROSS-SECTION NUMBER : 4

Cross-Section Location (XS(I), mi) 0.382

Flooding Elevation (FSTG(I), ft MSL) 1668.000

DOWNSTREAM REACH NUMBER : 4

Reach Contraction-Expansion Coefficient (FKC) -0.300

Minimum Distance Between Interpolated Cross-Sections (DXM, mi) 0.050

CROSS-SECTION and REACH DESCRIPTION :

Elevation HS(K,I) (ft MSL)	Channel Top Width BS(K,I) (ft)	Channel Manning n CM(K,I)	Storage Top Width BSS(K,I) (ft)
1660.00	0.0	0.0950	0.0
1663.00	85.5	0.0950	0.0
1667.00	108.5	0.0950	0.0
1669.00	256.4	0.0950	0.0
1672.00	489.5	0.0950	0.0
1675.00	659.2	0.0950	0.0
1678.00	765.0	0.0950	0.0
1680.00	915.0	0.0950	0.0

CROSS-SECTION NUMBER : 5

Cross-Section Location (XS(I), mi) 0.562

Flooding Elevation (FSTG(I), ft MSL) 1646.000

DOWNSTREAM REACH NUMBER : 5

Reach Contraction-Expansion Coefficient (FKC) 0.100

Minimum Distance Between Interpolated Cross-Sections (DXM, mi) 0.050

CROSS-SECTION and REACH DESCRIPTION :

Elevation HS(K,I) (ft MSL)	Channel Top Width BS(K,I) (ft)	Channel Manning n CM(K,I)	Storage Top Width BSS(K,I) (ft)
1640.90	0.0	0.0960	0.0
1645.00	76.6	0.0960	0.0
1647.00	156.0	0.0960	0.0
1650.00	279.3	0.0960	0.0
1653.00	406.3	0.0960	0.0
1656.00	564.3	0.0960	0.0
1659.00	775.0	0.0960	0.0
1662.00	900.0	0.0960	0.0

CROSS-SECTION NUMBER : 6

Cross-Section Location (XS(I), mi) 0.795

Flooding Elevation (FSTG(I), ft MSL) 1622.000

DOWNSTREAM REACH NUMBER : 6

Reach Contraction-Expansion Coefficient (FKC) -0.300

Minimum Distance Between Interpolated Cross-Sections (DXM, mi) 0.050

CROSS-SECTION and REACH DESCRIPTION :

Elevation HS(K,I) (ft MSL)	Channel Top Width BS(K,I) (ft)	Channel Manning n CM(K,I)	Storage Top Width BSS(K,I) (ft)
1617.80	0.0	0.0910	0.0
1621.00	98.1	0.0910	0.0
1625.00	129.6	0.0910	0.0
1629.00	199.1	0.0910	0.0
1632.00	343.0	0.0910	0.0
1635.00	425.0	0.0910	0.0
1638.00	487.0	0.0910	0.0
1641.00	628.3	0.0910	0.0

CROSS-SECTION NUMBER : 7

Cross-Section Location (XS(I), mi) 0.996

Flooding Elevation (FSTG(I), ft MSL) 1610.000

DOWNSTREAM REACH NUMBER : 7

Reach Contraction-Expansion Coefficient (FKC) -0.300

Minimum Distance Between Interpolated Cross-Sections (DXM, mi) 0.050

CROSS-SECTION and REACH DESCRIPTION :

Elevation HS(K,I) (ft MSL)	Channel Top Width BS(K,I) (ft)	Channel Manning n CM(K,I)	Storage Top Width BSS(K,I) (ft)
1602.30	0.0	0.0920	0.0
1605.00	100.8	0.0920	0.0
1610.00	139.4	0.0920	0.0
1614.00	179.7	0.0920	0.0
1616.00	263.8	0.0920	0.0
1619.00	420.7	0.0920	0.0
1622.00	470.9	0.0920	0.0
1626.00	536.1	0.0920	0.0

CROSS-SECTION NUMBER : 8

Cross-Section Location (XS(I), mi) 1.245

Flooding Elevation (FSTG(I), ft MSL) 1594.000

DOWNSTREAM REACH NUMBER : 8

Reach Contraction-Expansion Coefficient (FKC) -0.300

Minimum Distance Between Interpolated Cross-Sections (DXM, mi) 0.050

CROSS-SECTION and REACH DESCRIPTION :

Elevation HS(K,I) (ft MSL)	Channel Top Width BS(K,I) (ft)	Channel Manning n CM(K,I)	Storage Top Width BSS(K,I) (ft)
1587.00	0.0	0.0960	0.0
1590.00	98.2	0.0960	0.0
1593.00	116.2	0.0960	0.0
1595.00	196.2	0.0960	0.0
1598.00	340.0	0.0960	0.0
1600.00	505.0	0.0960	0.0
1603.00	615.0	0.0960	0.0
1607.00	842.5	0.0960	0.0

CROSS-SECTION NUMBER : 9

Cross-Section Location (XS(I), mi) 1.499

Flooding Elevation (FSTG(I), ft MSL) 1570.000

DOWNSTREAM REACH NUMBER : 9

Reach Contraction-Expansion Coefficient (FKC) -0.300

Minimum Distance Between Interpolated Cross-Sections (DXM, mi) 0.034

CROSS-SECTION and REACH DESCRIPTION :

HS(K,I) (ft MSL)	Elevation Channel Top Width BS(K,I) (ft)	Channel Manning n CM(K,I)	Storage Top Width BSS(K,I) (ft)
1565.30	0.0	0.1210	0.0
1567.00	152.7	0.1210	0.0
1571.00	209.7	0.1210	0.0
1576.00	230.2	0.1210	0.0
1578.00	425.0	0.1210	0.0
1581.00	760.0	0.1210	0.0
1583.00	895.0	0.1210	0.0
1586.00	985.0	0.1210	0.0

CROSS-SECTION NUMBER : 10

Cross-Section Location (XS(I), mi) 1.602

Flooding Elevation (FSTG(I), ft MSL) 1560.000

DOWNSTREAM REACH NUMBER : 10

Reach Contraction-Expansion Coefficient (FKC) -0.300

Minimum Distance Between Interpolated Cross-Sections (DXM, mi) 0.035

CROSS-SECTION and REACH DESCRIPTION :

HS(K,I) (ft MSL)	Elevation Channel Top Width BS(K,I) (ft)	Channel Manning n CM(K,I)	Storage Top Width BSS(K,I) (ft)
1559.90	0.0	0.1170	0.0
1561.00	100.5	0.1170	0.0
1564.00	495.5	0.1170	0.0
1567.00	680.5	0.1170	0.0
1570.00	895.5	0.1170	0.0
1573.00	1003.0	0.1170	0.0
1576.00	1193.6	0.1170	0.0
1580.00	1265.0	0.1170	0.0

CROSS-SECTION NUMBER : 11

Cross-Section Location (XS(I), mi) 1.708

Flooding Elevation (FSTG(I), ft MSL) 1560.000

CROSS-SECTION DESCRIPTION :

HS(K,I) (ft MSL)	Elevation Channel Top Width BS(K,I) (ft)	Storage Top Width BSS(K,I) (ft)
1551.90	0.0	0.0
1553.00	53.8	0.0
1556.00	196.3	0.0
1559.00	387.9	0.0
1562.00	709.5	0.0
1565.00	855.0	0.0
1568.00	1170.0	0.0
1570.00	1210.0	0.0

DISTANCE BETWEEN INTERPOLATED CROSS-SECTIONS
(DXM) THAT WILL BE USED IN COMPUTATIONS :

Down Stream Reach Number I=1,NS1	Interp. Cross Section Distance DXM(I) (mi)
1	0.0020
2	0.0100
3	0.0310
4	0.0500
5	0.0500
6	0.0500
7	0.0500
8	0.0500
9	0.0340
10	0.0350

Total number of cross-sections (original+interpolated) 98

Maximum number of cross-sections allowed 2000

OUTPUT DATA SUMMARY :

CROSS-SECTION and REACH SUMMARY :

Cross Section Number	Cross Section Location (mi)	Bottom Elevation (ft MSL)	Reach Number	Reach Length (mi)	Reach Slope (ft/mi)
1	0.000	1694.700			
2	0.102	1684.800	1	0.102	97.058
3	0.259	1673.700	2	0.157	70.701
4	0.382	1660.000	3	0.123	111.382
5	0.562	1640.900	4	0.180	106.111
6	0.795	1617.800	5	0.233	99.142
7	0.996	1602.300	6	0.201	77.114
8	1.245	1587.000	7	0.249	61.446
9	1.499	1565.300	8	0.254	85.433
10	1.602	1559.900	9	0.103	52.427
11	1.708	1551.900	10	0.106	75.472

SLOPE INFORMATION FOR CROSS-SECTION REACHES :

Reach Section Number I	Water Surface Elevation YQ (ft MSL)	Hydraulic Depth DA (ft)	Reach Bottom Slope SO (ft/m)	Dynamic Slope DS (ft/m)	Total Slope SOT (ft/m)	Critical Slope SC (ft/m)	Manning n CMN
1	1689.75	0.26	97.06	0.61	97.67	362.82	0.055
1	1690.90	0.53	97.06	0.79	97.84	287.97	0.055
1	1693.50	2.22	97.06	1.34	98.40	178.64	0.055
1	1698.00	5.23	97.06	1.87	98.92	134.15	0.055
1	1701.50	6.16	97.06	1.99	99.05	127.05	0.055
1	1705.00	6.20	97.06	2.00	99.05	126.78	0.055
1	1710.25	9.64	97.06	2.38	99.44	109.43	0.055
1	1714.00	9.69	97.06	2.38	99.44	109.24	0.055
2	1679.25	0.39	70.70	0.74	71.44	264.13	0.050
2	1681.00	0.77	70.70	0.95	71.65	209.64	0.050
2	1683.00	1.99	70.70	1.35	72.05	153.11	0.050
2	1684.50	2.42	70.70	1.45	72.15	143.40	0.050
2	1688.50	5.19	70.70	1.94	72.64	111.19	0.050
2	1691.00	6.07	70.70	2.06	72.76	105.53	0.050
2	1695.00	8.53	70.70	2.36	73.06	94.21	0.050
2	1698.50	9.43	70.70	2.45	73.15	91.12	0.050
3	1666.85	0.54	111.38	1.19	112.58	835.62	0.094
3	1669.00	1.08	111.38	1.52	112.90	663.24	0.094
3	1672.00	3.36	111.38	2.27	113.65	454.35	0.094
3	1673.50	2.77	111.38	2.12	113.50	484.34	0.094
3	1678.00	4.83	111.38	2.59	113.97	402.42	0.094
3	1681.00	6.37	111.38	2.86	114.24	367.01	0.094
3	1684.50	8.38	111.38	3.16	114.54	334.93	0.094
3	1687.50	9.37	111.38	3.29	114.67	322.72	0.094
4	1650.45	0.88	106.11	1.46	107.57	725.20	0.095
4	1654.00	1.76	106.11	1.86	107.97	575.58	0.095
4	1657.00	3.42	106.11	2.36	108.47	461.02	0.095
4	1659.50	3.59	106.11	2.40	108.51	453.80	0.095
4	1662.50	4.54	106.11	2.61	108.72	419.54	0.095
4	1665.50	5.93	106.11	2.87	108.98	384.03	0.095
4	1668.50	7.40	106.11	3.11	109.22	356.62	0.095
4	1671.00	8.59	106.11	3.28	109.39	339.34	0.095
5	1629.35	0.90	99.14	1.53	100.68	735.37	0.096
5	1633.00	1.80	99.14	1.95	101.10	583.66	0.096
5	1636.00	3.51	99.14	2.47	101.61	467.02	0.096
5	1639.50	4.83	99.14	2.77	101.91	419.71	0.096
5	1642.50	5.54	99.14	2.91	102.05	400.96	0.096
5	1645.50	6.83	99.14	3.14	102.28	373.93	0.096
5	1648.50	8.03	99.14	3.32	102.46	354.32	0.096
5	1651.50	9.37	99.14	3.51	102.65	336.57	0.096
6	1610.05	0.74	77.11	1.53	78.65	706.03	0.091
6	1613.00	1.47	77.11	1.95	79.06	560.37	0.091
6	1617.50	5.01	77.11	2.99	80.11	372.53	0.091
6	1621.50	6.98	77.11	3.37	80.48	333.63	0.091
6	1624.00	6.43	77.11	3.27	80.38	342.92	0.091
6	1627.00	7.19	77.11	3.40	80.52	330.38	0.091
6	1630.00	9.17	77.11	3.71	80.83	304.62	0.091
6	1633.50	10.71	77.11	3.92	81.04	289.26	0.091
7	1594.65	0.71	61.45	1.71	63.15	729.86	0.092
7	1597.50	1.42	61.45	2.17	63.61	579.29	0.092
7	1601.50	4.72	61.45	3.28	64.73	388.63	0.092
7	1604.50	5.74	61.45	3.52	64.96	364.08	0.092
7	1607.00	5.64	61.45	3.50	64.94	366.19	0.092
7	1609.50	5.70	61.45	3.51	64.96	364.86	0.092
7	1612.50	7.64	61.45	3.89	65.34	330.95	0.092
7	1616.50	9.59	61.45	4.22	65.66	306.75	0.092
8	1576.15	0.55	85.43	1.39	86.82	864.97	0.096
8	1578.50	1.10	85.43	1.77	87.20	686.53	0.096
8	1582.00	4.06	85.43	2.78	88.22	444.79	0.096
8	1585.50	6.42	85.43	3.27	88.71	381.90	0.096
8	1588.00	5.48	85.43	3.09	88.53	402.41	0.096
8	1590.50	5.39	85.43	3.08	88.51	404.75	0.096
8	1593.00	6.72	85.43	3.33	88.76	375.98	0.096
8	1596.50	8.69	85.43	3.65	89.08	345.12	0.096
9	1562.60	0.37	52.43	1.92	54.35	1576.84	0.121
9	1564.00	0.73	52.43	2.43	54.86	1251.53	0.121
9	1567.50	2.56	52.43	3.72	56.15	824.32	0.121
9	1571.50	5.13	52.43	4.73	57.16	653.87	0.121
9	1574.00	5.82	52.43	4.94	57.37	626.70	0.121
9	1577.00	6.98	52.43	5.26	57.69	589.80	0.121
9	1579.50	8.26	52.43	5.58	58.01	557.59	0.121
9	1583.00	11.11	52.43	6.18	58.61	505.22	0.121
10	1555.90	0.27	75.47	1.41	76.88	1620.95	0.117
10	1557.00	0.55	75.47	1.78	77.25	1286.50	0.117
10	1560.00	1.96	75.47	2.75	78.22	842.65	0.117
10	1563.00	3.74	75.47	3.44	78.91	679.14	0.117
10	1566.00	4.99	75.47	3.80	79.27	616.94	0.117
10	1569.00	7.10	75.47	4.30	79.77	548.32	0.117
10	1572.00	8.26	75.47	4.53	80.00	521.37	0.117
10	1575.00	10.84	75.47	4.98	80.45	476.27	0.117

Number of Intermediate Cross-Sections (NN(NS)) 98

Number of Time Steps (NNU) 23

INITIAL CONDITIONS TABLE :

Cross Section Number I	Cross Section Location XI (mi)	Normal Flow Water Elevation YN (ft MSL)	Normal Flow Depth DEPN (ft)	Critical Flow Water Elevation YC (ft MSL)	Critical Flow Depth DEPC (ft)	Froude Indicator (0 = sub) (1 = sup) IFR	Iteration Count for Computing Nrml Dpth ITN	Iteration Count for Computing Crtl Dpth ITC
1	0.000	1707.18	12.48	1705.94	11.24	0	12	12
2	0.002	1706.86	12.36	1705.67	11.16	0	12	12
3	0.004	1706.55	12.24	1705.40	11.09	0	12	12
4	0.006	1706.25	12.13	1705.15	11.03	0	12	12
5	0.008	1705.96	12.03	1704.89	10.97	0	12	12
6	0.010	1705.68	11.95	1704.63	10.90	0	12	12
7	0.012	1705.39	11.86	1704.38	10.84	0	12	12
8	0.014	1705.12	11.78	1704.13	10.79	0	12	12
9	0.016	1704.85	11.70	1703.88	10.73	0	12	12
10	0.018	1704.58	11.63	1703.63	10.68	0	12	12
11	0.020	1704.33	11.57	1703.39	10.63	0	12	12
12	0.022	1704.07	11.50	1703.15	10.59	0	12	12
13	0.024	1703.82	11.45	1702.92	10.54	0	12	12
14	0.026	1703.57	11.39	1702.68	10.50	0	12	12
15	0.028	1703.32	11.34	1702.45	10.46	0	12	12
16	0.030	1703.07	11.29	1702.21	10.42	0	12	12
17	0.032	1702.84	11.24	1701.98	10.38	0	12	12
18	0.034	1702.59	11.19	1701.75	10.35	0	12	12
19	0.036	1702.36	11.15	1701.52	10.32	0	12	12
20	0.038	1702.12	11.11	1701.30	10.29	0	12	12
21	0.040	1701.89	11.08	1701.07	10.25	0	12	12
22	0.042	1701.66	11.04	1700.85	10.22	0	12	12
23	0.044	1701.43	11.00	1700.62	10.19	0	12	12
24	0.046	1701.20	10.97	1700.40	10.17	0	12	12
25	0.048	1700.98	10.94	1700.18	10.14	0	12	12
26	0.050	1700.75	10.91	1699.96	10.11	0	12	12
27	0.052	1700.53	10.88	1699.74	10.09	0	12	12
28	0.054	1700.30	10.84	1699.52	10.06	0	12	12
29	0.056	1700.08	10.81	1699.30	10.03	0	12	12
30	0.058	1699.86	10.79	1699.08	10.01	0	12	12
31	0.060	1699.63	10.75	1698.86	9.98	0	12	12
32	0.062	1699.41	10.72	1698.64	9.96	0	12	12
33	0.064	1699.19	10.70	1698.42	9.94	0	12	12
34	0.066	1698.96	10.66	1698.20	9.91	0	12	12
35	0.068	1698.76	10.66	1697.98	9.88	0	12	12
36	0.070	1698.58	10.68	1697.76	9.86	0	12	12
37	0.072	1698.40	10.69	1697.54	9.83	0	12	12
38	0.074	1698.20	10.69	1697.32	9.80	0	12	12
39	0.076	1698.00	10.68	1697.10	9.78	0	12	12
40	0.078	1697.80	10.67	1696.87	9.75	0	12	12
41	0.080	1697.59	10.66	1696.65	9.72	0	12	12
42	0.082	1697.38	10.64	1696.46	9.72	0	12	12
43	0.084	1697.16	10.62	1696.26	9.72	0	12	12
44	0.086	1696.94	10.58	1696.07	9.71	0	12	12
45	0.088	1696.71	10.56	1695.85	9.70	0	12	12
46	0.090	1696.48	10.52	1695.64	9.68	0	12	12
47	0.092	1696.24	10.47	1695.43	9.66	0	12	12
48	0.094	1696.01	10.43	1695.20	9.62	0	12	12
49	0.096	1695.76	10.38	1694.97	9.59	0	12	12

Cross Section Number I	Cross Section Location XI (mi)	Normal Flow Water Elevation YN (ft MSL)	Normal Flow Depth DEPN (ft)	Critical Flow Water Elevation YC (ft MSL)	Critical Flow Depth DEPC (ft)	Froude Indicator (0 = sub) (1 = sup) IFR	Iteration Count for Computing Nrml Dpth ITN	Iteration Count for Computing Crtl Dpth ITC
50	0.098	1695.51	10.32	1694.74	9.55	0	12	12
51	0.100	1695.26	10.26	1694.50	9.51	0	12	12
52	0.102	1695.16	10.36	1694.26	9.46	0	12	12
53	0.112	1694.18	10.12	1693.20	9.14	0	12	12
54	0.123	1693.12	9.80	1692.11	8.79	0	12	12
55	0.133	1692.06	9.48	1691.06	8.48	0	12	12
56	0.144	1691.00	9.16	1690.07	8.23	0	12	12
57	0.154	1689.95	8.85	1689.10	8.00	0	12	12
58	0.165	1688.98	8.62	1688.14	7.78	0	12	12
59	0.175	1688.02	8.40	1687.19	7.57	0	12	12
60	0.186	1687.06	8.18	1686.25	7.37	0	12	12
61	0.196	1686.12	7.98	1685.31	7.17	0	12	12
62	0.207	1685.18	7.78	1684.39	6.99	0	12	12
63	0.217	1684.25	7.59	1683.48	6.82	0	12	12
64	0.228	1683.34	7.42	1682.57	6.65	0	12	12
65	0.238	1682.42	7.24	1681.66	6.48	0	12	12
66	0.249	1681.52	7.08	1680.77	6.33	0	12	12
67	0.259	1681.79	8.09	1679.87	6.17	0	12	12
68	0.290	1679.08	8.80	1677.14	6.87	0	12	12
69	0.320	1676.40	9.55	1674.43	7.58	0	12	12
70	0.351	1673.77	10.34	1671.72	8.30	0	12	12
71	0.382	1671.30	11.30	1668.94	8.94	0	12	12
72	0.442	1664.72	11.09	1662.36	8.73	0	12	12
73	0.502	1658.13	10.87	1655.83	8.57	0	12	12
74	0.562	1651.69	10.79	1649.34	8.44	0	12	12
75	0.620	1646.16	11.04	1643.56	8.43	0	12	12
76	0.678	1640.58	11.23	1637.71	8.36	0	12	12
77	0.737	1634.89	11.32	1631.78	8.21	0	12	12
78	0.795	1629.52	11.72	1625.77	7.97	0	12	12
79	0.845	1625.36	11.44	1621.76	7.84	0	12	12
80	0.895	1621.30	11.25	1617.76	7.71	0	12	12
81	0.946	1617.28	11.11	1613.78	7.60	0	12	12
82	0.996	1613.92	11.62	1609.80	7.50	0	12	12
83	1.046	1611.51	12.27	1606.82	7.58	0	12	12
84	1.096	1608.53	12.35	1603.88	7.70	0	12	12
85	1.145	1605.37	12.25	1600.97	7.85	0	12	12
86	1.195	1602.13	12.07	1598.07	8.01	0	12	12
87	1.245	1598.23	11.23	1595.12	8.12	0	12	12
88	1.296	1593.58	10.92	1590.06	7.40	0	12	12
89	1.347	1588.77	10.45	1585.10	6.78	0	12	12
90	1.397	1583.23	9.25	1580.26	6.28	0	12	12
91	1.448	1578.28	8.64	1575.51	5.87	0	12	12
92	1.499	1575.57	10.27	1570.79	5.49	0	12	12
93	1.533	1572.62	9.12	1568.72	5.22	0	12	12
94	1.568	1569.87	8.17	1566.52	4.82	0	12	12
95	1.602	1566.65	6.75	1564.29	4.39	0	12	12
96	1.637	1564.60	7.37	1561.99	4.76	0	12	12
97	1.673	1562.82	8.25	1559.87	5.30	0	12	12
98	1.708	1561.27	9.37	1558.07	6.17	0	12	12

SUMMARY OF INITIAL DOWNSTREAM BOUNDARY CONDITIONS :

Cross-section Number at Downstream End of Model (IN)	98
Initial Water Surface Elev. at Downstream End (YNN, ft MSL)	1562.086
Initial Flow Depth at Downstream End (DEP, ft)	10.186

COMPUTED STEP BACKWATER TABLE :

Cross Section Number I	Cross Section Location X (mi)	Flow QIL (cfs)	Backwater Water Surface Elevation YIL (ft MSL)	Backwater Water Depth DEP (ft)	Iteration Count for Computing Backwater ITB
96	1.637	9120.0	1565.316	8.083	3
95	1.602	9120.0	1567.114	7.214	3
94	1.568	9120.0	1569.290	7.590	3
93	1.533	9120.0	1571.859	8.359	3
92	1.499	9120.0	1574.484	9.184	3
91	1.448	9120.0	1577.832	8.192	3
90	1.397	9120.0	1583.007	9.027	2
89	1.347	9120.0	1588.185	9.865	4
88	1.296	9120.0	1593.382	10.722	4
87	1.245	9120.0	1598.109	11.109	4
86	1.195	9120.0	1601.892	11.832	4
85	1.145	9120.0	1605.191	12.071	4
84	1.096	9120.0	1608.404	12.224	4
83	1.046	9120.0	1611.514	12.274	4
82	0.996	9120.0	1614.407	12.107	4
81	0.946	9120.0	1617.420	11.245	4
80	0.895	9120.0	1621.239	11.189	3
79	0.845	9120.0	1625.254	11.329	4
78	0.795	9120.0	1629.336	11.536	4
77	0.737	9120.0	1634.907	11.332	3
76	0.678	9120.0	1640.680	11.330	4
75	0.620	9120.0	1646.266	11.141	4
74	0.562	9120.0	1651.798	10.898	3
73	0.502	9120.0	1657.961	10.694	3
72	0.442	9120.0	1664.737	11.104	3
71	0.382	9120.0	1671.237	11.237	4
70	0.351	9120.0	1674.229	10.804	4
69	0.320	9120.0	1676.815	9.965	4
68	0.290	9120.0	1679.465	9.190	3
67	0.259	9120.0	1682.158	8.458	3
66	0.249	9120.0	1682.237	7.797	4
65	0.238	9120.0	1682.451	7.271	4
64	0.228	9120.0	1683.019	7.099	4
63	0.217	9120.0	1683.927	7.267	4
62	0.207	9120.0	1684.835	7.435	5
61	0.196	9120.0	1685.751	7.611	5
60	0.186	9120.0	1686.673	7.793	5
59	0.175	9120.0	1687.602	7.982	5
58	0.165	9120.0	1688.541	8.181	5
57	0.154	9120.0	1689.488	8.388	5
56	0.144	9120.0	1690.446	8.606	5
55	0.133	9120.0	1691.454	8.874	5
54	0.123	9120.0	1692.548	9.228	5
53	0.112	9120.0	1693.650	9.590	5
52	0.102	9120.0	1694.741	9.941	5
51	0.100	9120.0	1694.505	9.511	12

Cross Section Number I	Cross Section Location X (mi)	Flow QIL (cfs)	Backwater Water Surface Elevation YIL (ft MSL)	Backwater Water Depth DEP (ft)	Iteration Count for Computing Backwater ITB
50	0.098	9120.0	1694.770	9.582	7
49	0.096	9120.0	1694.974	9.591	12
48	0.094	9120.0	1695.224	9.647	8
47	0.092	9120.0	1695.429	9.659	12
46	0.090	9120.0	1695.647	9.682	12
45	0.088	9120.0	1695.857	9.698	12
44	0.086	9120.0	1696.068	9.715	12
43	0.084	9120.0	1696.266	9.719	12
42	0.082	9120.0	1696.460	9.719	12
41	0.080	9120.0	1696.656	9.720	12
40	0.078	9120.0	1696.877	9.748	12
39	0.076	9120.0	1697.102	9.778	12
38	0.074	9120.0	1697.323	9.805	12
37	0.072	9120.0	1697.546	9.834	12
36	0.070	9120.0	1697.768	9.862	12
35	0.068	9120.0	1697.986	9.886	12
34	0.066	9120.0	1698.208	9.914	12
33	0.064	9120.0	1698.427	9.938	12
32	0.062	9120.0	1698.643	9.961	12
31	0.060	9120.0	1698.863	9.987	12
30	0.058	9120.0	1699.081	10.010	12
29	0.056	9120.0	1699.302	10.037	12
28	0.054	9120.0	1699.520	10.061	12
27	0.052	9120.0	1699.743	10.090	12
26	0.050	9120.0	1699.963	10.116	12
25	0.048	9120.0	1700.182	10.141	12
24	0.046	9120.0	1700.404	10.169	12
23	0.044	9120.0	1700.625	10.196	12
22	0.042	9120.0	1700.850	10.227	12
21	0.040	9120.0	1701.073	10.256	12
20	0.038	9120.0	1701.301	10.289	12
19	0.036	9120.0	1701.527	10.322	12
18	0.034	9120.0	1701.752	10.352	12
17	0.032	9120.0	1701.981	10.387	12
16	0.030	9120.0	1702.216	10.428	12
15	0.028	9120.0	1702.450	10.467	12
14	0.026	9120.0	1702.682	10.505	12
13	0.024	9120.0	1702.919	10.549	12
12	0.022	9120.0	1703.155	10.591	12
11	0.020	9120.0	1703.397	10.638	12
10	0.018	9120.0	1703.636	10.683	13
9	0.016	9120.0	1703.885	10.738	12
8	0.014	9120.0	1704.129	10.788	13
7	0.012	9120.0	1704.381	10.846	13
6	0.010	9120.0	1704.633	10.903	13
5	0.008	9120.0	1704.891	10.967	13
4	0.006	9120.0	1705.148	11.031	13
3	0.004	9120.0	1705.405	11.093	13
2	0.002	9120.0	1705.668	11.163	13
1	0.000	9120.0	1705.939	11.239	13

INITIAL CONDITIONS :

Interp. Cross-Section I	Initial Water Elevation YI(I) (ft MSL)	Initial Flow QDI(I) (cfs)
1	1705.94	9120.0
2	1705.67	9120.0
3	1705.41	9120.0
4	1705.15	9120.0
5	1704.89	9120.0
6	1704.63	9120.0
7	1704.38	9120.0
8	1704.13	9120.0
9	1703.89	9120.0
10	1703.64	9120.0
11	1703.40	9120.0
12	1703.16	9120.0
13	1702.92	9120.0
14	1702.68	9120.0
15	1702.45	9120.0
16	1702.22	9120.0
17	1701.98	9120.0
18	1701.75	9120.0
19	1701.53	9120.0
20	1701.30	9120.0
21	1701.07	9120.0
22	1700.85	9120.0
23	1700.63	9120.0
24	1700.40	9120.0
25	1700.18	9120.0
26	1699.96	9120.0
27	1699.74	9120.0
28	1699.52	9120.0
29	1699.30	9120.0
30	1699.08	9120.0
31	1698.86	9120.0
32	1698.64	9120.0
33	1698.43	9120.0
34	1698.21	9120.0
35	1697.99	9120.0
36	1697.77	9120.0
37	1697.55	9120.0
38	1697.32	9120.0
39	1697.10	9120.0
40	1696.88	9120.0
41	1696.66	9120.0
42	1696.46	9120.0
43	1696.27	9120.0
44	1696.07	9120.0
45	1695.86	9120.0
46	1695.65	9120.0

INITIAL CONDITIONS :

Interp. Cross-Section I	Initial Water Elevation YI(I) (ft MSL)	Initial Flow QDI(I) (cfs)
47	1695.43	9120.0
48	1695.22	9120.0
49	1694.97	9120.0
50	1694.77	9120.0
51	1694.50	9120.0
52	1694.74	9120.0
53	1693.65	9120.0
54	1692.55	9120.0
55	1691.45	9120.0
56	1690.45	9120.0
57	1689.49	9120.0
58	1688.54	9120.0
59	1687.60	9120.0
60	1686.67	9120.0
61	1685.75	9120.0
62	1684.84	9120.0
63	1683.93	9120.0
64	1683.02	9120.0
65	1682.45	9120.0
66	1682.24	9120.0
67	1682.16	9120.0
68	1679.46	9120.0
69	1676.81	9120.0
70	1674.23	9120.0
71	1671.24	9120.0
72	1664.74	9120.0
73	1657.96	9120.0
74	1651.80	9120.0
75	1646.27	9120.0
76	1640.68	9120.0
77	1634.91	9120.0
78	1629.34	9120.0
79	1625.25	9120.0
80	1621.24	9120.0
81	1617.42	9120.0
82	1614.41	9120.0
83	1611.51	9120.0
84	1608.40	9120.0
85	1605.19	9120.0
86	1601.89	9120.0
87	1598.11	9120.0
88	1593.38	9120.0
89	1588.19	9120.0
90	1583.01	9120.0
91	1577.83	9120.0
92	1574.48	9120.0
93	1571.86	9120.0

INITIAL CONDITIONS :

Interp. Cross-Section I	Initial Water Elevation YI(I) (ft MSL)	Initial Flow QDI(I) (cfs)
94	1569.29	9120.0
95	1567.11	9120.0
96	1565.32	9120.0
97	1563.68	9120.0
98	1562.09	9120.0

DAM OUTFLOW HYDROGRAPH TIME PARAMETERS :

Time to Failure (TFH, hr)	0.349
Time to Start of Rising Limb of Hydrograph (TFO, hr)	0.000
Time to Peak (TP, hr)	0.349
Time Step Size (DTHI, hr)	0.010

ROUTING COMPLETED :

Number of Time Steps Used (KTIME)	100
Maximum Number of Time Steps Allowed	2999
Total Time of Flood Routing (TT, hr)	1.0
Flood Wave Arrival Time based upon a WSEL Increase of (ft)	1.00

CONSERVATION OF MASS RESULTS :

Should be close to 0.00%, a negative value denotes flow volume was lost during the routing, a positive value denotes flow volume was gained during the routing. Normalized as a percent of inflow volume, maximum change in conservation of mass during routing was 0.00

FLOOD CREST SUMMARY :

Cross Section Location (mi)	Maximum Stage Elevation (ft MSL)	Maximum Flow (cfs)	Time To Maximum Stage (hr)	Maximum Flow Velocity (ft/sec)	Flood Elevation (ft MSL)	Time To Flood Elevation (hr)	Flood Wave Arrival Time (hr)
0.000	1715.36	21938	0.350	19.64	0.00	0.00	0.02
0.002	1711.46	21856	0.350	24.67	33.14	0.00	0.12
0.004	1710.78	21787	0.350	25.01	66.27	0.00	0.12
0.006	1710.22	21721	0.360	25.18	99.41	0.00	0.14
0.008	1709.75	21658	0.360	25.25	132.55	0.00	0.14
0.010	1709.32	21598	0.360	25.25	165.69	0.00	0.14
0.012	1708.92	21538	0.360	25.20	198.82	0.00	0.14
0.014	1708.55	21480	0.360	25.10	231.96	0.00	0.18
0.016	1708.20	21432	0.360	24.97	265.10	0.00	0.18
0.018	1707.86	21429	0.360	24.81	298.24	0.00	0.18
0.020	1707.54	21426	0.360	24.62	331.37	0.00	0.20
0.022	1707.24	21423	0.360	24.42	364.51	0.00	0.20
0.024	1706.94	21419	0.360	24.20	397.65	0.00	0.20
0.026	1706.65	21415	0.360	23.96	430.78	0.00	0.20
0.028	1706.37	21411	0.360	23.71	463.92	0.00	0.20
0.030	1706.09	21406	0.360	23.45	497.06	0.00	0.20
0.032	1705.83	21401	0.360	23.18	530.20	0.00	0.20
0.034	1705.56	21395	0.360	22.92	563.33	0.00	0.20
0.036	1705.30	21389	0.360	22.66	596.47	0.00	0.20
0.038	1705.05	21383	0.360	22.38	629.61	0.00	0.20
0.040	1704.80	21376	0.360	22.10	662.75	0.00	0.20
0.042	1704.55	21368	0.360	21.81	695.88	0.00	0.20
0.044	1704.30	21360	0.360	21.51	729.02	0.00	0.20
0.046	1704.06	21351	0.360	21.22	762.16	0.00	0.20
0.048	1703.82	21342	0.360	20.91	795.29	0.00	0.20
0.050	1703.57	21331	0.360	20.61	828.43	0.00	0.20
0.052	1703.33	21321	0.360	20.30	861.57	0.00	0.20
0.054	1703.09	21309	0.360	19.99	894.71	0.00	0.20
0.056	1702.84	21296	0.360	19.68	927.84	0.00	0.20
0.058	1702.60	21283	0.360	19.37	960.98	0.00	0.20
0.060	1702.35	21269	0.360	19.06	994.12	0.00	0.20
0.062	1702.11	21254	0.360	18.75	1027.26	0.00	0.20
0.064	1701.86	21238	0.360	18.45	1060.39	0.00	0.20
0.066	1701.61	21221	0.360	18.15	1093.53	0.00	0.20
0.068	1701.35	21203	0.360	17.85	1126.67	0.00	0.20
0.070	1701.10	21184	0.360	17.56	1159.80	0.00	0.20
0.072	1700.84	21165	0.360	17.27	1192.94	0.00	0.20
0.074	1700.58	21144	0.360	17.00	1226.08	0.00	0.20
0.076	1700.30	21123	0.360	16.75	1259.22	0.00	0.20
0.078	1700.03	21102	0.360	16.52	1292.35	0.00	0.20
0.080	1699.74	21081	0.360	16.30	1325.49	0.00	0.20
0.082	1699.46	21059	0.360	16.11	1358.63	0.00	0.22
0.084	1699.16	21038	0.360	15.92	1391.76	0.00	0.22
0.086	1698.87	21016	0.360	15.75	1424.90	0.00	0.22
0.088	1698.57	20993	0.360	15.59	1458.04	0.00	0.22
0.090	1698.27	20970	0.360	15.43	1491.18	0.00	0.24
0.092	1697.97	20947	0.360	15.28	1524.31	0.00	0.26
0.094	1697.66	20923	0.360	15.14	1557.45	0.00	0.30

FLOOD CREST SUMMARY :

Cross Section Location (mi)	Maximum Stage Elevation (ft MSL)	Maximum Flow (cfs)	Time To Maximum Stage (hr)	Maximum Flow Velocity (ft/sec)	Flood Elevation (ft MSL)	Time To Flood Elevation (hr)	Flood Wave Arrival Time (hr)
0.096	1697.36	20899	0.360	15.00	1590.59	0.00	0.36
0.098	1697.05	20875	0.370	14.87	1623.72	0.00	0.36
0.100	1696.74	20850	0.370	14.74	1656.86	0.00	0.36
0.102	1697.13	20850	0.360	14.48	1690.00	0.00	0.18
0.112	1696.25	20834	0.370	12.50	1689.20	0.00	0.20
0.123	1695.33	20801	0.370	12.22	1688.40	0.00	0.22
0.133	1694.40	20751	0.370	12.02	1687.60	0.00	0.36
0.144	1693.46	20682	0.370	11.86	1686.80	0.00	0.36
0.154	1692.49	20587	0.370	11.81	1686.00	0.00	0.36
0.165	1691.46	20464	0.380	11.91	1685.20	0.00	0.36
0.175	1690.42	20326	0.380	11.98	1684.40	0.00	0.36
0.186	1689.39	20259	0.380	12.03	1683.60	0.00	0.36
0.196	1688.37	20224	0.380	12.04	1682.80	0.00	0.38
0.207	1687.38	20180	0.380	11.99	1682.00	0.00	0.38
0.217	1686.37	20134	0.380	11.95	1681.20	0.00	0.00
0.228	1685.56	20074	0.390	11.66	1680.40	0.00	0.00
0.238	1685.27	19979	0.390	10.26	1679.60	0.00	0.38
0.249	1685.17	19857	0.390	8.66	1678.80	0.00	0.36
0.259	1685.13	19773	0.390	7.32	1678.00	0.00	0.16
0.290	1682.31	19592	0.400	7.01	1675.50	0.00	0.16
0.320	1679.53	19399	0.400	6.71	1673.00	0.00	0.16
0.351	1676.77	19219	0.410	6.42	1670.50	0.00	0.16
0.382	1673.72	19096	0.410	6.54	1668.00	0.00	0.18
0.442	1667.29	18852	0.430	6.63	1660.67	0.00	0.20
0.502	1660.67	18643	0.440	6.98	1653.33	0.00	0.26
0.562	1654.67	18443	0.450	6.56	1646.00	0.00	0.20
0.620	1649.27	18286	0.460	6.72	1640.00	0.00	0.20
0.678	1643.89	18151	0.470	6.86	1634.00	0.00	0.20
0.737	1638.47	18036	0.480	7.07	1628.00	0.00	0.22
0.795	1633.35	17927	0.500	6.99	1622.00	0.00	0.20
0.845	1629.56	17827	0.510	7.08	1619.00	0.00	0.24
0.895	1625.80	17725	0.520	7.28	1616.00	0.00	0.26
0.946	1622.08	17624	0.530	7.11	1613.00	0.00	0.28
0.996	1618.61	17531	0.540	6.57	1610.00	0.00	0.26
1.046	1615.16	17461	0.550	6.37	1606.80	0.00	0.26
1.096	1611.66	17408	0.550	6.23	1603.60	0.00	0.24
1.145	1608.12	17359	0.560	6.10	1600.40	0.00	0.26
1.195	1604.58	17311	0.570	5.96	1597.20	0.00	0.28
1.245	1600.84	17269	0.580	6.03	1594.00	0.00	0.34
1.296	1596.45	17218	0.590	5.95	1589.20	0.00	0.36
1.347	1591.96	17143	0.610	6.63	1584.40	0.00	0.38
1.397	1587.29	17035	0.630	7.39	1579.60	0.00	0.44
1.448	1582.51	16916	0.650	8.03	1574.80	0.00	0.52
1.499	1578.17	16839	0.660	6.62	1570.00	0.00	0.42
1.533	1574.48	16809	0.670	5.52	1566.67	0.00	0.46
1.568	1571.45	16779	0.680	4.81	1563.33	0.00	0.52
1.602	1569.21	16738	0.690	3.82	1560.00	0.00	0.48
1.637	1567.40	16693	0.700	3.79	1560.00	0.00	0.52

FLOOD CREST SUMMARY :

Cross Section Location (mi)	Maximum Stage Elevation (ft MSL)	Maximum Flow (cfs)	Time To Maximum Stage (hr)	Maximum Flow Velocity (ft/sec)	Flood Elevation (ft MSL)	Time To Flood Elevation (hr)	Flood Wave Arrival Time (hr)
1.673	1565.65	16648	0.710	3.77	1560.00	0.00	0.54
1.708	1563.93	16604	0.730	3.80	1560.00	0.00	0.56

COMPUTED WATER SURFACE ELEVATIONS AT REQUESTED
STATIONS WHERE HYDROGRAPHS ARE PLOTTED :

Time Step Count K	Elapsed Time TTP(K) (hr)	Station 1 Water Surface Elevation YC(K,1) (ft MSL)	Station 2 Water Surface Elevation YC(K,2) (ft MSL)	Station 3 Water Surface Elevation YC(K,3) (ft MSL)	Station 4 Water Surface Elevation YC(K,4) (ft MSL)	Station 5 Water Surface Elevation YC(K,5) (ft MSL)	Station 6 Water Surface Elevation YC(K,6) (ft MSL)
1	0.000	1707.18	1694.77	1671.24	1629.34	1598.11	1562.09
3	0.020	1707.42	1694.81	1671.25	1629.34	1598.11	1562.09
5	0.040	1707.65	1694.90	1671.28	1629.34	1598.11	1562.09
7	0.060	1707.98	1695.03	1671.33	1629.34	1598.11	1562.09
9	0.080	1708.42	1695.18	1671.41	1629.35	1598.11	1562.09
11	0.100	1708.84	1695.34	1671.53	1629.39	1598.11	1562.09
13	0.120	1709.74	1695.58	1671.69	1629.45	1598.11	1562.09
15	0.140	1709.98	1695.73	1671.91	1629.57	1598.12	1562.09
17	0.160	1709.90	1695.70	1672.12	1629.76	1598.13	1562.09
19	0.180	1710.15	1695.76	1672.25	1630.02	1598.15	1562.09
21	0.200	1710.40	1695.83	1672.33	1630.34	1598.19	1562.09
23	0.220	1710.64	1695.91	1672.41	1630.68	1598.25	1562.10
25	0.240	1710.72	1695.95	1672.49	1631.00	1598.33	1562.10
27	0.260	1710.81	1695.98	1672.56	1631.27	1598.44	1562.11
29	0.280	1710.89	1696.00	1672.62	1631.50	1598.58	1562.13
31	0.300	1710.97	1696.03	1672.66	1631.68	1598.74	1562.15
33	0.320	1710.77	1695.99	1672.69	1631.84	1598.92	1562.19
35	0.340	1710.63	1695.95	1672.69	1631.96	1599.12	1562.24
37	0.360	1715.09	1697.13	1672.85	1632.06	1599.31	1562.30
39	0.380	1714.24	1696.36	1673.33	1632.14	1599.48	1562.36
41	0.400	1713.45	1696.16	1673.67	1632.28	1599.63	1562.44
43	0.420	1712.81	1695.99	1673.71	1632.53	1599.76	1562.53
45	0.440	1712.24	1695.84	1673.60	1632.86	1599.89	1562.62
47	0.460	1712.10	1695.77	1673.43	1633.15	1600.03	1562.72
49	0.480	1711.96	1695.74	1673.29	1633.32	1600.20	1562.81
51	0.500	1711.82	1695.70	1673.19	1633.35	1600.39	1562.90
53	0.520	1711.67	1695.66	1673.12	1633.29	1600.58	1562.98
55	0.540	1711.53	1695.63	1673.06	1633.18	1600.73	1563.07
57	0.560	1711.39	1695.59	1673.00	1633.06	1600.81	1563.17
59	0.580	1711.24	1695.55	1672.95	1632.95	1600.84	1563.30
61	0.600	1711.09	1695.51	1672.90	1632.84	1600.82	1563.43
63	0.620	1710.95	1695.47	1672.85	1632.75	1600.78	1563.57
65	0.640	1710.80	1695.44	1672.79	1632.66	1600.72	1563.69
67	0.660	1710.65	1695.40	1672.74	1632.58	1600.66	1563.80
69	0.680	1710.50	1695.36	1672.69	1632.51	1600.60	1563.87
71	0.700	1710.34	1695.32	1672.63	1632.43	1600.54	1563.91
73	0.720	1710.19	1695.28	1672.58	1632.35	1600.48	1563.93
75	0.740	1710.03	1695.24	1672.52	1632.28	1600.42	1563.93
77	0.760	1709.88	1695.19	1672.47	1632.20	1600.36	1563.91
79	0.780	1709.72	1695.15	1672.41	1632.12	1600.30	1563.87
81	0.800	1709.56	1695.11	1672.36	1632.05	1600.24	1563.83
83	0.820	1709.40	1695.06	1672.30	1631.97	1600.19	1563.79
85	0.840	1709.23	1695.01	1672.24	1631.89	1600.13	1563.74
87	0.860	1708.96	1694.94	1672.18	1631.80	1600.07	1563.69
89	0.880	1708.68	1694.85	1672.11	1631.70	1600.01	1563.64
91	0.900	1708.40	1694.75	1672.03	1631.60	1599.96	1563.59
93	0.920	1708.11	1694.65	1671.93	1631.50	1599.89	1563.54
95	0.940	1707.83	1694.55	1671.82	1631.38	1599.83	1563.48
97	0.960	1707.69	1694.48	1671.71	1631.25	1599.76	1563.43

Time Step Count K	Elapsed Time TTP(K) (hr)	Station 1 Water Surface Elevation YC(K,1) (ft MSL)	Station 2 Water Surface Elevation YC(K,2) (ft MSL)	Station 3 Water Surface Elevation YC(K,3) (ft MSL)	Station 4 Water Surface Elevation YC(K,4) (ft MSL)	Station 5 Water Surface Elevation YC(K,5) (ft MSL)	Station 6 Water Surface Elevation YC(K,6) (ft MSL)
99	0.980	1707.56	1694.43	1671.61	1631.10	1599.69	1563.39

COMPUTED DISCHARGES AT REQUESTED
STATIONS WHERE HYDROGRAPHS ARE PLOTTED :

Time Step Count K	Elapsed Time (x 1000) TTP(K) (hr)	Station 1 Discharge (x 1000) QC(K,1) (cfs)	Station 2 Discharge (x 1000) QC(K,2) (cfs)	Station 3 Discharge (x 1000) QC(K,3) (cfs)	Station 4 Discharge (x 1000) QC(K,4) (cfs)	Station 5 Discharge (x 1000) QC(K,5) (cfs)	Station 6 Discharge (x 1000) QC(K,6) (cfs)
1	0.000	9.12	9.20	9.12	9.12	9.13	9.12
3	0.020	9.41	9.34	9.16	9.12	9.13	9.12
5	0.040	9.71	9.61	9.24	9.13	9.13	9.12
7	0.060	10.15	9.99	9.39	9.14	9.13	9.13
9	0.080	10.72	10.54	9.65	9.16	9.13	9.14
11	0.100	11.30	11.12	10.04	9.21	9.13	9.15
13	0.120	12.57	12.20	10.56	9.30	9.14	9.15
15	0.140	12.92	12.93	11.30	9.47	9.15	9.15
17	0.160	12.80	12.76	12.05	9.74	9.18	9.16
19	0.180	13.17	13.07	12.50	10.13	9.23	9.16
21	0.200	13.53	13.43	12.81	10.64	9.32	9.16
23	0.220	13.90	13.79	13.13	11.21	9.45	9.17
25	0.240	14.03	13.99	13.45	11.76	9.63	9.19
27	0.260	14.16	14.12	13.73	12.25	9.89	9.23
29	0.280	14.28	14.25	13.94	12.68	10.22	9.29
31	0.300	14.41	14.37	14.11	13.05	10.63	9.39
33	0.320	14.11	14.18	14.22	13.37	11.06	9.54
35	0.340	13.88	13.95	14.21	13.64	11.52	9.74
37	0.360	21.43	20.85	15.06	13.87	11.98	9.99
39	0.380	19.87	20.20	17.42	14.09	12.42	10.28
41	0.400	18.49	18.83	18.94	14.53	12.82	10.60
43	0.420	17.38	17.65	18.97	15.40	13.20	10.96
45	0.440	16.43	16.68	18.28	16.51	13.58	11.35
47	0.460	16.20	16.28	17.45	17.44	14.07	11.75
49	0.480	15.97	16.04	16.80	17.89	14.73	12.14
51	0.500	15.74	15.81	16.36	17.87	15.50	12.51
53	0.520	15.52	15.58	16.04	17.57	16.26	12.85
55	0.540	15.29	15.35	15.78	17.15	16.85	13.21
57	0.560	15.06	15.12	15.54	16.74	17.19	13.62
59	0.580	14.83	14.89	15.31	16.36	17.27	14.13
61	0.600	14.60	14.67	15.08	16.04	17.16	14.71
63	0.620	14.37	14.44	14.86	15.76	16.94	15.29
65	0.640	14.14	14.21	14.63	15.50	16.67	15.81
67	0.660	13.91	13.98	14.41	15.26	16.38	16.20
69	0.680	13.68	13.75	14.18	15.02	16.10	16.46
71	0.700	13.46	13.52	13.95	14.80	15.84	16.59
73	0.720	13.23	13.30	13.73	14.57	15.58	16.60
75	0.740	13.00	13.07	13.50	14.35	15.34	16.52
77	0.760	12.77	12.84	13.27	14.12	15.11	16.38
79	0.780	12.54	12.61	13.05	13.90	14.89	16.21
81	0.800	12.31	12.38	12.82	13.68	14.67	16.02
83	0.820	12.08	12.15	12.60	13.47	14.45	15.81
85	0.840	11.85	11.92	12.37	13.26	14.23	15.59
87	0.860	11.46	11.58	12.13	13.04	14.01	15.37
89	0.880	11.08	11.20	11.86	12.82	13.81	15.16
91	0.900	10.70	10.82	11.54	12.59	13.62	14.95
93	0.920	10.32	10.44	11.19	12.36	13.42	14.74
95	0.940	9.94	10.07	10.83	12.10	13.22	14.54
97	0.960	9.77	9.83	10.48	11.83	13.01	14.34

Time Step Count K	Elapsed Time (x 1000) TTP(K) (hr)	Station 1 Discharge (x 1000) QC(K,1) (cfs)	Station 2 Discharge (x 1000) QC(K,2) (cfs)	Station 3 Discharge (x 1000) QC(K,3) (cfs)	Station 4 Discharge (x 1000) QC(K,4) (cfs)	Station 5 Discharge (x 1000) QC(K,5) (cfs)	Station 6 Discharge (x 1000) QC(K,6) (cfs)
99	0.980	9.60	9.66	10.16	11.53	12.79	14.15

END OF OUTPUT

TABLE 12

Excerpt from: Town of Fountain Hills Dambreak Analyses (GUSCE, 1996)

Parameters and initial conditions for dam breach analyses

Parameter	Dam				
	Aspen	N. Heights	SunRidge	Hesperus Wash	Golden Eagle Park
(1)	(2)	(3)	(4)	(5)	(6)
Core					
grain size (D50C), mm	18.92	1.63	2.45	0.05	0.7
D90/D30 (UNFCC)	9.6	142	15.8	23.3	118
porosity (PORC)	0.3	0.25	0.3	0.33	0.25
unit weight (UWC), pcf	120	125	120	115	125
internal friction angle (ARFC), degrees	40	40	35	35	38
cohesive strength, (COHC), psf	0	0	200	200	200
Shell					
grain size (D50S), mm	18.92	1.63	2.76	8.4	7.1
D90/D30 (UNFCS)	9.6	142	30.2	21.1	22.1
porosity (PORS)	0.3	0.25	0.3	0.25	0.3
unit weight (UWS), pcf	120	125	120	130	120
internal friction angle (AFRS), degrees	40	40	40	40	40
cohesive strength (COHS), psf	0	0	0	0	0
Dam Face					
upstream slope (ZU)	3H:IV	3H:IV	2H:IV	2H:IV	2H:IV
downstream slope (ZD)	2H:IV	2H:IV	2H:IV	2H:IV	2H:IV
grain size (D50 DF), mm	18.92	1.63	2.76	8.4	16.1
D90/D30 (UNFCDF)	9.6	142	30.2	21.1	10.9
Initial Conditions					
reservior elevation, ft	1,839.6	1,815.0	1,928.9	1,893.3	1,721.5
piping width, ft	0.1	0.1	0.1	0.1	0.1
piping elevation, ft	1,808.8	1,779.2	1,884.8	1,852.0	1,694.7

APPENDIX J

Supporting HEC-1 and HEC-2 output for Alternative No. 2

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1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              MAY   1991               *
*            VERSION 4.0.1E             *
*                                       *
*  RUN DATE  10/17/96  TIME  16:38:56   *
*                                       *
*****************************************
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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

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	204A	214.	4.20	20.	7.	7.	0.11		
+	ROUTED TO	522523	201.	4.37	20.	7.	7.	0.11		
+	HYDROGRAPH AT	204B	208.	4.27	23.	8.	8.	0.13		
+	2 COMBINED AT	C523I	386.	4.33	43.	14.	14.	0.23		
+	ROUTED TO	C523O	286.	4.52	43.	14.	14.	0.23		
+	DIVERSION TO	D523R	19.	4.52	1.	0.	0.	0.23		
+	HYDROGRAPH AT	D523L	266.	4.52	42.	14.	14.	0.23		
+	ROUTED TO	523524	263.	4.60	42.	14.	14.	0.23		
+	HYDROGRAPH AT	204C	205.	4.08	18.	6.	6.	0.08		
+	2 COMBINED AT	C524	282.	4.58	60.	20.	20.	0.31		
+	ROUTED TO	524525	280.	4.60	60.	20.	20.	0.31		
+	HYDROGRAPH AT	204D	128.	4.05	12.	4.	4.	0.04		
+	2 COMBINED AT	C525	358.	4.12	71.	24.	24.	0.35		
+	ROUTED TO	525526	355.	4.15	71.	24.	24.	0.35		
+	HYDROGRAPH AT	204E	189.	4.07	18.	6.	6.	0.07		
+	2 COMBINED AT	C526	523.	4.10	90.	30.	30.	0.43		

+	ROUTED TO	526527	517.	4.17	90.	30.	30.	0.43
+	HYDROGRAPH AT	204F	260.	4.02	22.	7.	7.	0.08
+	2 COMBINED AT	C527	665.	4.12	111.	37.	37.	0.50
+	HYDROGRAPH AT	205A	210.	4.22	26.	9.	9.	0.12
+	HYDROGRAPH AT	205B	486.	4.18	47.	16.	16.	0.21
+	2 COMBINED AT	C528	690.	4.20	73.	25.	25.	0.33
+	ROUTED TO	528530	680.	4.23	73.	25.	25.	0.33
+	HYDROGRAPH AT	205C	107.	4.20	13.	4.	4.	0.06
+	2 COMBINED AT	C530R	785.	4.22	86.	29.	29.	0.39
+	HYDROGRAPH AT	205D	665.	4.23	71.	24.	24.	0.32
+	HYDROGRAPH AT	205E	301.	4.33	48.	16.	16.	0.22
+	2 COMBINED AT	C529	917.	4.25	119.	40.	40.	0.54
+	2 COMBINED AT	C530	1472.	4.23	197.	66.	66.	0.93
+	ROUTED TO	530531	1455.	4.28	197.	66.	66.	0.93
+	HYDROGRAPH AT	205F	325.	4.22	36.	12.	12.	0.16
+	2 COMBINED AT	C531	1639.	4.27	228.	77.	77.	1.09
+	ROUTED TO	531532	1619.	4.33	228.	77.	77.	1.09
+	HYDROGRAPH AT	205G	349.	4.23	40.	13.	13.	0.19
+	2 COMBINED AT	C532L	1791.	4.32	262.	88.	88.	1.27
+	HYDROGRAPH AT	205H	350.	4.35	56.	19.	19.	0.26
+	2 COMBINED AT	C532	1970.	4.33	310.	104.	104.	1.53
+	ROUTED TO	532533	1956.	4.35	310.	104.	104.	1.53
+	HYDROGRAPH AT	205I	559.	4.30	70.	23.	23.	0.35
+	2 COMBINED AT	C533	2232.	4.35	367.	123.	123.	1.89
+	ROUTED TO	533534	2189.	4.52	367.	123.	123.	1.89
+	HYDROGRAPH AT	205J	551.	4.28	65.	22.	22.	0.37
+	2 COMBINED AT	C534R	2392.	4.50	416.	140.	140.	2.25
+	HYDROGRAPH AT	205K	266.	4.38	45.	15.	15.	0.25
+	2 COMBINED AT	C534	2507.	4.52	450.	151.	151.	2.50
+	ROUTED TO	534535	2490.	4.57	450.	151.	151.	2.50

+	HYDROGRAPH AT	205L	263.	4.15	20.	7.	7.	0.12
+	2 COMBINED AT	C535	2514.	4.55	465.	156.	156.	2.62
+	ROUTED TO	535536	2491.	4.68	464.	156.	156.	2.62
+	HYDROGRAPH AT	205M	335.	4.10	31.	10.	10.	0.14
+	2 COMBINED AT	C536R	2510.	4.67	489.	165.	165.	2.76
+	HYDROGRAPH AT	205N	211.	4.25	29.	10.	10.	0.16
+	2 COMBINED AT	C536I	2580.	4.67	510.	172.	172.	2.91
+	ROUTED TO	C536O	326.	6.03	312.	172.	172.	2.91
+	ROUTED TO	536537	326.	6.08	312.	172.	172.	2.91
+	HYDROGRAPH AT	206A	408.	4.03	31.	10.	10.	0.13
+	2 COMBINED AT	C537	344.	4.28	317.	181.	181.	3.04
+	ROUTED TO	537538	340.	4.33	316.	181.	181.	3.04
+	HYDROGRAPH AT	206B	304.	4.03	25.	8.	8.	0.09
+	2 COMBINED AT	C538I	464.	4.08	330.	188.	188.	3.14
+	ROUTED TO	C538O	434.	4.28	327.	188.	188.	3.14
+	ROUTED TO	538540	433.	4.37	327.	188.	188.	3.14
+	HYDROGRAPH AT	206C	45.	4.10	4.	1.	1.	0.02
+	2 COMBINED AT	C540R	453.	4.35	329.	189.	189.	3.16
+	HYDROGRAPH AT	206D	195.	4.03	17.	6.	6.	0.06
+	ROUTED TO	539540	185.	4.10	17.	6.	6.	0.06
+	HYDROGRAPH AT	206E	45.	4.08	4.	1.	1.	0.02
+	2 COMBINED AT	C540L	230.	4.10	20.	7.	7.	0.09
+	2 COMBINED AT	C540	546.	4.30	341.	194.	194.	3.24
+	ROUTED TO	540541	541.	4.50	340.	194.	194.	3.24
+	HYDROGRAPH AT	206F	259.	4.17	27.	9.	9.	0.16
+	2 COMBINED AT	C541	651.	4.43	357.	200.	200.	3.40
+	ROUTED TO	541548	649.	4.45	357.	200.	200.	3.40
+	HYDROGRAPH AT	206G	112.	4.27	18.	6.	6.	0.09
+	HYDROGRAPH AT	BB523R	19.	4.52	1.	0.	0.	0.23
+	ROUTED TO	523548	16.	4.77	1.	0.	0.	0.23

	3 COMBINED AT						
+		C548L	713.	4.45	369.	203.	203.	3.72
	HYDROGRAPH AT						
+		206H	153.	4.07	14.	5.	5.	0.06
	ROUTED TO						
+		542543	149.	4.08	14.	5.	5.	0.06
	HYDROGRAPH AT						
+		206I	67.	4.03	5.	2.	2.	0.02
	2 COMBINED AT						
+		C543	210.	4.07	19.	6.	6.	0.08
	DIVERSION TO						
+		D543R	210.	4.07	19.	6.	6.	0.08
	HYDROGRAPH AT						
+		D543L	0.	0.02	0.	0.	0.	0.08
	ROUTED TO						
+		543544	0.	0.02	0.	0.	0.	0.08
	HYDROGRAPH AT						
+		206K	103.	4.13	11.	4.	4.	0.06
	2 COMBINED AT						
+		C544	102.	4.13	11.	4.	4.	0.14
	ROUTED TO						
+		544545	102.	4.17	11.	4.	4.	0.14
	DIVERSION TO						
+		D545R	51.	4.17	5.	2.	2.	0.14
	HYDROGRAPH AT						
+		D545L	51.	4.17	5.	2.	2.	0.14
	ROUTED TO						
+		545546	50.	4.20	5.	2.	2.	0.14
	HYDROGRAPH AT						
+		206L	123.	4.12	12.	4.	4.	0.06
	2 COMBINED AT						
+		C546	171.	4.15	18.	6.	6.	0.20
	ROUTED TO						
+		546547	170.	4.17	18.	6.	6.	0.20
	HYDROGRAPH AT						
+		BB543R	210.	4.07	19.	6.	6.	0.08
	ROUTED TO						
+		543547	202.	4.15	19.	6.	6.	0.08
	HYDROGRAPH AT						
+		BB545R	51.	4.17	5.	2.	2.	0.14
	ROUTED TO						
+		545547	50.	4.23	5.	2.	2.	0.14
	HYDROGRAPH AT						
+		206J	200.	4.02	16.	5.	5.	0.06
	4 COMBINED AT						
+		C547	525.	4.10	59.	20.	20.	0.26
	ROUTED TO						
+		547548	521.	4.17	59.	20.	20.	0.26
	HYDROGRAPH AT						
+		206M	198.	4.02	16.	5.	5.	0.06
	2 COMBINED AT						
+		C548R	635.	4.12	75.	25.	25.	0.32
	2 COMBINED AT						
+		C548	1038.	4.30	421.	224.	224.	4.04
	ROUTED TO						
+		548549	1028.	4.45	421.	224.	224.	4.04
	HYDROGRAPH AT						
+		206N	458.	4.05	41.	14.	14.	0.15
	2 COMBINED AT						
+		C549L	1128.	4.40	443.	235.	235.	4.19

+	HYDROGRAPH AT	207A	382.	4.30	55.	18.	18.	0.26
+	HYDROGRAPH AT	207B	306.	4.30	46.	15.	15.	0.21
+	2 COMBINED AT	C550	687.	4.30	101.	34.	34.	0.46
+	ROUTED TO	550552	675.	4.37	100.	34.	34.	0.46
+	HYDROGRAPH AT	207C	321.	4.22	34.	11.	11.	0.17
+	2 COMBINED AT	C552L	878.	4.35	132.	44.	44.	0.64
+	HYDROGRAPH AT	207D	349.	4.25	44.	15.	15.	0.20
+	ROUTED TO	551552	341.	4.33	44.	15.	15.	0.20
+	HYDROGRAPH AT	207E	180.	4.37	34.	12.	12.	0.16
+	2 COMBINED AT	C552R	518.	4.33	78.	26.	26.	0.35
+	2 COMBINED AT	C552	1244.	4.35	202.	68.	68.	0.99
+	ROUTED TO	552553	1236.	4.38	202.	68.	68.	0.99
+	HYDROGRAPH AT	207F	213.	4.20	28.	9.	9.	0.13
+	2 COMBINED AT	C553	1345.	4.37	226.	76.	76.	1.12
+	ROUTED TO	553556	1338.	4.42	226.	76.	76.	1.12
+	HYDROGRAPH AT	207G	294.	4.35	45.	15.	15.	0.24
+	2 COMBINED AT	C556L	1513.	4.40	264.	89.	89.	1.35
+	HYDROGRAPH AT	207H	188.	4.27	28.	9.	9.	0.12
+	ROUTED TO	554555	184.	4.33	28.	9.	9.	0.12
+	HYDROGRAPH AT	207I	109.	4.25	16.	5.	5.	0.07
+	2 COMBINED AT	C555	285.	4.32	44.	15.	15.	0.20
+	ROUTED TO	555556	279.	4.45	44.	15.	15.	0.20
+	HYDROGRAPH AT	207J	162.	4.18	21.	7.	7.	0.09
+	2 COMBINED AT	C556R	385.	4.40	65.	22.	22.	0.29
+	2 COMBINED AT	C556	1752.	4.42	319.	108.	108.	1.64
+	ROUTED TO	556557	1744.	4.47	319.	108.	108.	1.64
+	HYDROGRAPH AT	207K	283.	4.13	31.	10.	10.	0.13
+	2 COMBINED AT	C557R	1833.	4.45	346.	117.	117.	1.77
+	HYDROGRAPH AT	207L	203.	4.07	20.	7.	7.	0.08
+	2 COMBINED AT	C557	1879.	4.43	363.	122.	122.	1.85

	ROUTED TO						
+	557558	1871.	4.50	363.	122.	122.	1.85
	HYDROGRAPH AT						
+	207M	270.	4.10	22.	7.	7.	0.12
	2 COMBINED AT						
+	C558	1918.	4.48	381.	128.	128.	1.97
	ROUTED TO						
+	558560	1908.	4.52	381.	128.	128.	1.97
	HYDROGRAPH AT						
+	207O	330.	4.13	26.	9.	9.	0.13
	2 COMBINED AT						
+	C560R	1953.	4.52	401.	135.	135.	2.10
	HYDROGRAPH AT						
+	207N	109.	4.10	10.	3.	3.	0.05
	ROUTED TO						
+	559560	106.	4.22	10.	3.	3.	0.05
	2 COMBINED AT						
+	C560I	1989.	4.50	409.	138.	138.	2.15
	ROUTED TO						
+	C560O	287.	5.93	264.	138.	138.	2.15
	ROUTED TO						
+	560585	287.	6.03	264.	138.	138.	2.15
	HYDROGRAPH AT						
+	210A	294.	4.13	23.	8.	8.	0.12
	2 COMBINED AT						
+	C585	295.	4.18	270.	144.	144.	2.27
	HYDROGRAPH AT						
+	208A	331.	4.15	31.	10.	10.	0.14
	ROUTED TO						
+	561563	327.	4.20	31.	10.	10.	0.14
	HYDROGRAPH AT						
+	208B	45.	4.18	6.	2.	2.	0.03
	2 COMBINED AT						
+	C563R	372.	4.18	37.	12.	12.	0.17
	HYDROGRAPH AT						
+	208C	127.	4.18	15.	5.	5.	0.07
	ROUTED TO						
+	562563	123.	4.25	15.	5.	5.	0.07
	HYDROGRAPH AT						
+	208D	118.	4.23	17.	6.	6.	0.08
	2 COMBINED AT						
+	C563L	240.	4.25	31.	10.	10.	0.14
	2 COMBINED AT						
+	C563	599.	4.22	68.	23.	23.	0.31
	ROUTED TO						
+	563564	584.	4.27	68.	23.	23.	0.31
	HYDROGRAPH AT						
+	208E	107.	4.22	14.	5.	5.	0.06
	2 COMBINED AT						
+	C564R	684.	4.27	82.	27.	27.	0.37
	HYDROGRAPH AT						
+	208F	133.	4.18	15.	5.	5.	0.07
	2 COMBINED AT						
+	C564	804.	4.25	97.	33.	33.	0.44
	ROUTED TO						
+	564565	783.	4.35	97.	33.	33.	0.44
	HYDROGRAPH AT						
+	208G	244.	4.17	30.	10.	10.	0.13
	2 COMBINED AT						
+	C565	938.	4.33	125.	42.	42.	0.57

+	ROUTED TO	565568	927.	4.38	125.	42.	42.	0.57
+	HYDROGRAPH AT	208H	72.	4.18	8.	3.	3.	0.04
+	2 COMBINED AT	C568L	961.	4.38	133.	45.	45.	0.61
+	HYDROGRAPH AT	208I	213.	4.22	26.	9.	9.	0.12
+	HYDROGRAPH AT	208J	106.	4.28	18.	6.	6.	0.08
+	2 COMBINED AT	C566	313.	4.23	43.	15.	15.	0.20
+	ROUTED TO	566567	308.	4.30	43.	15.	15.	0.20
+	HYDROGRAPH AT	208K	106.	4.15	11.	4.	4.	0.05
+	2 COMBINED AT	C567L	383.	4.27	54.	18.	18.	0.25
+	HYDROGRAPH AT	208L	101.	4.20	13.	4.	4.	0.06
+	2 COMBINED AT	C567	478.	4.25	67.	22.	22.	0.31
+	ROUTED TO	567568	468.	4.35	67.	22.	22.	0.31
+	HYDROGRAPH AT	208M	249.	4.28	35.	12.	12.	0.16
+	2 COMBINED AT	C568R	701.	4.33	102.	34.	34.	0.46
+	2 COMBINED AT	C568	1428.	4.37	224.	75.	75.	1.07
+	ROUTED TO	568573	1420.	4.43	224.	75.	75.	1.07
+	HYDROGRAPH AT	208N	86.	4.20	11.	4.	4.	0.05
+	2 COMBINED AT	C573L	1460.	4.43	234.	79.	79.	1.12
+	HYDROGRAPH AT	208O	386.	4.27	51.	17.	17.	0.23
+	ROUTED TO	569570	382.	4.30	51.	17.	17.	0.23
+	HYDROGRAPH AT	208P	145.	4.13	13.	4.	4.	0.06
+	2 COMBINED AT	C570R	467.	4.28	64.	22.	22.	0.29
+	HYDROGRAPH AT	208Q	169.	4.22	21.	7.	7.	0.09
+	2 COMBINED AT	C570	628.	4.25	86.	29.	29.	0.38
+	HYDROGRAPH AT	208R	25.	4.10	2.	1.	1.	0.01
+	ROUTED TO	571572	24.	4.15	2.	1.	1.	0.01
+	2 COMBINED AT	C572	647.	4.25	88.	29.	29.	0.39
+	ROUTED TO	572573	644.	4.27	88.	29.	29.	0.39
+	HYDROGRAPH AT	208S	160.	4.15	17.	6.	6.	0.07
+	2 COMBINED AT	C573R	772.	4.23	105.	35.	35.	0.46

+	2 COMBINED AT	C573	1872.	4.40	325.	110.	110.	1.58
+	HYDROGRAPH AT	208T	283.	4.18	30.	10.	10.	0.13
+	HYDROGRAPH AT	208U	379.	4.12	30.	10.	10.	0.13
+	2 COMBINED AT	C574	643.	4.13	60.	20.	20.	0.27
+	ROUTED TO	574575	638.	4.15	60.	20.	20.	0.27
+	HYDROGRAPH AT	208V	71.	4.12	6.	2.	2.	0.03
+	2 COMBINED AT	C575	704.	4.15	66.	22.	22.	0.29
+	ROUTED TO	575576	691.	4.18	66.	22.	22.	0.29
+	HYDROGRAPH AT	208W	122.	4.13	11.	4.	4.	0.05
+	2 COMBINED AT	C576	803.	4.17	77.	26.	26.	0.34
+	ROUTED TO	576577	800.	4.18	77.	26.	26.	0.34
+	2 COMBINED AT	C577	2187.	4.37	391.	132.	132.	1.92
+	ROUTED TO	577578	2184.	4.40	391.	132.	132.	1.92
+	HYDROGRAPH AT	208X	206.	4.12	17.	6.	6.	0.08
+	2 COMBINED AT	C578I	2231.	4.38	405.	136.	136.	2.00
+	ROUTED TO	C578O	381.	5.15	310.	136.	136.	2.00
+	ROUTED TO	578587	381.	5.20	310.	136.	136.	2.00
+	HYDROGRAPH AT	210B	172.	4.18	21.	7.	7.	0.11
+	ROUTED TO	C586O	162.	4.27	21.	7.	7.	0.11
+	ROUTED TO	586587	161.	4.32	21.	7.	7.	0.11
+	2 COMBINED AT	C587	401.	4.47	324.	142.	142.	2.11
+	ROUTED TO	587595	401.	4.50	324.	142.	142.	2.11
+	HYDROGRAPH AT	210C	165.	4.17	15.	5.	5.	0.08
+	2 COMBINED AT	C595L	468.	4.40	333.	146.	146.	2.19
+	HYDROGRAPH AT	210D	301.	4.18	30.	10.	10.	0.14
+	ROUTED TO	588590	297.	4.22	30.	10.	10.	0.14
+	HYDROGRAPH AT	210E	62.	4.15	6.	2.	2.	0.03
+	2 COMBINED AT	C590L	353.	4.20	36.	12.	12.	0.17
+	HYDROGRAPH AT	210F	184.	4.20	21.	7.	7.	0.09
+	ROUTED TO	589590	180.	4.23	21.	7.	7.	0.09

+	HYDROGRAPH AT 210G	293.	4.23	35.	12.	12.	0.16
+	2 COMBINED AT C590R	472.	4.23	56.	19.	19.	0.25
+	2 COMBINED AT C590	819.	4.22	91.	31.	31.	0.42
+	HYDROGRAPH AT 210H	163.	4.13	14.	5.	5.	0.07
+	ROUTED TO 592593	158.	4.18	14.	5.	5.	0.07
+	2 COMBINED AT C593	972.	4.22	105.	35.	35.	0.49
+	ROUTED TO 593594	963.	4.25	105.	35.	35.	0.49
+	HYDROGRAPH AT 210I	94.	4.17	10.	3.	3.	0.05
+	2 COMBINED AT C594	1030.	4.23	115.	38.	38.	0.54
+	ROUTED TO 594595	1007.	4.33	115.	38.	38.	0.54
+	HYDROGRAPH AT 210J	213.	4.18	20.	7.	7.	0.10
+	2 COMBINED AT C595R	1119.	4.32	133.	44.	44.	0.64
+	2 COMBINED AT C595	1205.	4.35	438.	183.	183.	2.83
+	ROUTED TO 595596	1201.	4.40	438.	183.	183.	2.83
+	HYDROGRAPH AT 210K	207.	4.12	15.	5.	5.	0.08
+	2 COMBINED AT C596	1268.	4.38	448.	187.	187.	2.91
+	HYDROGRAPH AT 209A	792.	4.22	82.	27.	27.	0.37
+	ROUTED TO 579580	787.	4.25	82.	27.	27.	0.37
+	HYDROGRAPH AT 209C	105.	4.22	14.	5.	5.	0.06
+	2 COMBINED AT C580R	889.	4.25	96.	32.	32.	0.43
+	HYDROGRAPH AT 209B	156.	4.20	19.	6.	6.	0.08
+	2 COMBINED AT C580	1031.	4.23	114.	38.	38.	0.51
+	ROUTED TO 580581	1019.	4.28	114.	38.	38.	0.51
+	HYDROGRAPH AT 209D	563.	4.18	54.	18.	18.	0.24
+	2 COMBINED AT C581R	1368.	4.23	163.	55.	55.	0.76
+	HYDROGRAPH AT 209E	238.	4.27	33.	11.	11.	0.15
+	2 COMBINED AT C581	1511.	4.25	193.	65.	65.	0.91
+	ROUTED TO 581582	1488.	4.30	193.	65.	65.	0.91
+	HYDROGRAPH AT 209F	360.	4.28	49.	16.	16.	0.23
+	2 COMBINED AT C582R	1698.	4.30	235.	79.	79.	1.13

	HYDROGRAPH AT							
+		209G	337.	4.28	45.	15.	15.	0.20
	2 COMBINED AT							
+		C582	1886.	4.30	275.	92.	92.	1.34
	ROUTED TO							
+		582583	1867.	4.33	275.	92.	92.	1.34
	HYDROGRAPH AT							
+		209H	203.	4.13	17.	6.	6.	0.08
	2 COMBINED AT							
+		C583	1928.	4.33	289.	97.	97.	1.42
	ROUTED TO							
+		583584	1903.	4.40	289.	97.	97.	1.42
	HYDROGRAPH AT							
+		209I	481.	4.13	36.	12.	12.	0.18
	2 COMBINED AT							
+		C584I	1999.	4.40	319.	107.	107.	1.60
	ROUTED TO							
+		C584O	469.	4.95	305.	107.	107.	1.60
	ROUTED TO							
+		584597	466.	5.08	305.	107.	107.	1.60
	HYDROGRAPH AT							
+		210L	255.	4.15	24.	8.	8.	0.14
	2 COMBINED AT							
+		C597	460.	5.07	321.	113.	113.	1.74
	ROUTED TO							
+		597598	458.	5.15	321.	113.	113.	1.74
	HYDROGRAPH AT							
+		210M	286.	4.22	30.	10.	10.	0.16
	2 COMBINED AT							
+		C598	587.	4.37	344.	121.	121.	1.90
	HYDROGRAPH AT							
+		210N	130.	4.08	8.	3.	3.	0.05
	4 COMBINED AT							
+		C599	1917.	4.40	981.	408.	408.	7.13
	ROUTED TO							
+		599608	1913.	4.43	981.	408.	408.	7.13
	HYDROGRAPH AT							
+		211K	302.	4.05	22.	7.	7.	0.10
	2 COMBINED AT							
+		C608L	1968.	4.42	993.	413.	413.	7.24
	HYDROGRAPH AT							
+		211G	18.	4.05	3.	1.	1.	0.01
	ROUTED TO							
+		604606	17.	4.23	3.	1.	1.	0.01
	HYDROGRAPH AT							
+		211I	78.	4.17	10.	3.	3.	0.04
	2 COMBINED AT							
+		C606R	94.	4.18	13.	4.	4.	0.05
	HYDROGRAPH AT							
+		211H	181.	4.13	14.	5.	5.	0.07
	ROUTED TO							
+		C605O	115.	4.27	14.	5.	5.	0.07
	2 COMBINED AT							
+		C606	206.	4.20	26.	9.	9.	0.12
	ROUTED TO							
+		606607	204.	4.23	26.	9.	9.	0.12
	HYDROGRAPH AT							
+		211J	37.	4.08	4.	1.	1.	0.01
	2 COMBINED AT							
+		C607	230.	4.22	30.	10.	10.	0.14

+	ROUTED TO	607608	228.	4.25	30.	10.	10.	0.14
+	2 COMBINED AT	C608	2097.	4.42	1014.	420.	420.	7.37
+	ROUTED TO	608613	2091.	4.43	1013.	420.	420.	7.37
+	HYDROGRAPH AT	211M	203.	4.13	19.	6.	6.	0.08
+	ROUTED TO	610611	200.	4.17	19.	6.	6.	0.08
+	HYDROGRAPH AT	211N	51.	4.07	4.	1.	1.	0.02
+	2 COMBINED AT	C611R	241.	4.15	23.	8.	8.	0.10
+	HYDROGRAPH AT	211O	107.	4.07	10.	3.	3.	0.04
+	ROUTED TO	C609O	61.	4.25	10.	3.	3.	0.04
+	ROUTED TO	609611	61.	4.28	10.	3.	3.	0.04
+	2 COMBINED AT	C611I	299.	4.17	33.	11.	11.	0.14
+	ROUTED TO	C611O	151.	4.45	33.	11.	11.	0.14
+	DIVERSION TO	D611R	151.	4.45	33.	11.	11.	0.14
+	HYDROGRAPH AT	D611L	0.	0.02	0.	0.	0.	0.14
+	ROUTED TO	611612	0.	0.02	0.	0.	0.	0.14
+	HYDROGRAPH AT	211P	119.	4.00	10.	3.	3.	0.03
+	2 COMBINED AT	C612	119.	4.00	10.	3.	3.	0.17
+	2 COMBINED AT	C613	2102.	4.43	1016.	422.	422.	7.55
+	ROUTED TO	613621	2101.	4.45	1016.	422.	422.	7.55
+	HYDROGRAPH AT	211L	301.	4.03	23.	8.	8.	0.10
+	2 COMBINED AT	C621L	2140.	4.43	1028.	428.	428.	7.64
+	HYDROGRAPH AT	211Q	56.	4.05	4.	1.	1.	0.02
+	ROUTED TO	616617	55.	4.12	4.	1.	1.	0.02
+	HYDROGRAPH AT	211R	200.	4.10	19.	6.	6.	0.08
+	2 COMBINED AT	C617L	255.	4.10	23.	8.	8.	0.10
+	HYDROGRAPH AT	211U	56.	4.07	8.	3.	3.	0.03
+	DIVERSION TO	D614R	39.	4.07	5.	2.	2.	0.03
+	HYDROGRAPH AT	D614L	16.	4.07	3.	1.	1.	0.03
+	2 COMBINED AT	C617	270.	4.10	26.	9.	9.	0.13
+	ROUTED TO	617618	263.	4.18	26.	9.	9.	0.13

+	HYDROGRAPH AT	211S	125.	4.08	12.	4.	4.	0.05
+	2 COMBINED AT	C618I	370.	4.15	37.	12.	12.	0.18
+	ROUTED TO	C618O	367.	4.17	31.	12.	12.	0.18
+	HYDROGRAPH AT	BB614R	39.	4.07	5.	2.	2.	0.03
+	ROUTED TO	614615	39.	4.12	5.	2.	2.	0.03
+	HYDROGRAPH AT	211V	16.	4.02	2.	1.	1.	0.00
+	2 COMBINED AT	C615	51.	4.08	7.	2.	2.	0.03
+	DIVERSION TO	D615R	18.	4.08	2.	1.	1.	0.03
+	HYDROGRAPH AT	D615L	33.	4.08	5.	2.	2.	0.03
+	ROUTED TO	615618	33.	4.08	5.	2.	2.	0.03
+	2 COMBINED AT	C618	398.	4.17	36.	14.	14.	0.19
+	ROUTED TO	618619	391.	4.23	36.	14.	14.	0.19
+	HYDROGRAPH AT	211T	162.	4.08	15.	5.	5.	0.07
+	2 COMBINED AT	C619L	507.	4.22	50.	19.	19.	0.26
+	HYDROGRAPH AT	BB615R	18.	4.08	2.	1.	1.	0.03
+	ROUTED TO	615619	18.	4.17	2.	1.	1.	0.03
+	2 COMBINED AT	C619I	524.	4.22	52.	20.	20.	0.25
+	ROUTED TO	C619O	364.	4.40	52.	20.	20.	0.25
+	DIVERSION TO	D619L	172.	4.40	4.	1.	1.	0.25
+	HYDROGRAPH AT	D619R	192.	4.40	48.	18.	18.	0.25
+	ROUTED TO	619620	192.	4.42	48.	18.	18.	0.25
+	HYDROGRAPH AT	BB619L	172.	4.40	4.	1.	1.	0.25
+	ROUTED TO	619620	137.	4.43	4.	1.	1.	0.25
+	HYDROGRAPH AT	211W	105.	4.02	9.	3.	3.	0.03
+	3 COMBINED AT	C620R	336.	4.43	61.	23.	23.	0.28
+	HYDROGRAPH AT	BB611R	151.	4.45	33.	11.	11.	0.14
+	ROUTED TO	611620	151.	4.47	33.	11.	11.	0.14
+	2 COMBINED AT	C620	486.	4.43	94.	34.	34.	0.42
+	ROUTED TO	620621	483.	4.47	94.	33.	33.	0.42
+	2 COMBINED AT	C621	2438.	4.43	1096.	454.	454.	7.93

+	ROUTED TO	621622	2428.	4.52	1095.	454.	454.	7.93
+	HYDROGRAPH AT	211X	503.	4.12	55.	18.	18.	0.21
+	2 COMBINED AT	C622R	2577.	4.50	1127.	469.	469.	8.14
+	HYDROGRAPH AT	211A	283.	4.15	30.	10.	10.	0.14
+	ROUTED TO	C600O	266.	4.22	30.	10.	10.	0.14
+	ROUTED TO	600601	263.	4.28	30.	10.	10.	0.14
+	HYDROGRAPH AT	211B	249.	4.12	23.	8.	8.	0.11
+	2 COMBINED AT	C601	462.	4.18	52.	17.	17.	0.25
+	ROUTED TO	601602	458.	4.23	52.	17.	17.	0.25
+	HYDROGRAPH AT	211C	134.	4.03	12.	4.	4.	0.04
+	2 COMBINED AT	C602L	515.	4.20	64.	21.	21.	0.30
+	HYDROGRAPH AT	211D	159.	4.07	15.	5.	5.	0.07
+	2 COMBINED AT	C602	635.	4.15	78.	26.	26.	0.37
+	ROUTED TO	602603	632.	4.22	78.	26.	26.	0.37
+	HYDROGRAPH AT	211E	507.	4.03	41.	14.	14.	0.16
+	2 COMBINED AT	C603	936.	4.07	118.	40.	40.	0.52
+	ROUTED TO	603622	918.	4.15	118.	40.	40.	0.52
+	HYDROGRAPH AT	211F	332.	4.05	32.	11.	11.	0.11
+	2 COMBINED AT	C622L	1121.	4.13	149.	50.	50.	0.63
+	2 COMBINED AT	C622	3069.	4.43	1228.	507.	507.	8.78
+	ROUTED TO	622549	3056.	4.52	1227.	506.	506.	8.78
+	HYDROGRAPH AT	211Y	216.	4.10	21.	7.	7.	0.09
+	2 COMBINED AT	C549R	3110.	4.52	1240.	512.	512.	8.87
+	2 COMBINED AT	C549	3876.	4.50	1612.	699.	699.	13.06
+	ROUTED TO	549626	3862.	4.60	1611.	698.	698.	13.06
+	HYDROGRAPH AT	211Z	249.	4.03	20.	7.	7.	0.08
+	2 COMBINED AT	C626C	3884.	4.60	1619.	703.	703.	13.14
+	HYDROGRAPH AT	211AA	78.	4.08	9.	3.	3.	0.03
+	ROUTED TO	625626	76.	4.13	9.	3.	3.	0.03
+	HYDROGRAPH AT	211AB	135.	4.02	10.	3.	3.	0.04

	ROUTED TO							
+		623624	133.	4.03	10.	3.	3.	0.04
	HYDROGRAPH AT							
+		211AC	90.	4.02	8.	3.	3.	0.03
	2 COMBINED AT							
+		C624	223.	4.03	18.	6.	6.	0.07
	ROUTED TO							
+		624626	215.	4.07	18.	6.	6.	0.07
	HYDROGRAPH AT							
+		211AD	132.	4.03	12.	4.	4.	0.04
	2 COMBINED AT							
+		C626R	342.	4.05	30.	10.	10.	0.11
	3 COMBINED AT							
+		C626	3958.	4.58	1640.	713.	713.	13.28
	ROUTED TO							
+		626627	3956.	4.60	1639.	713.	713.	13.28
	HYDROGRAPH AT							
+		211AE	114.	4.02	9.	3.	3.	0.03
	2 COMBINED AT							
+		C627	3967.	4.60	1644.	716.	716.	13.32
	HYDROGRAPH AT							
+		211AF	177.	4.02	13.	4.	4.	0.05

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

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*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              MAY   1991              *
*            VERSION 4.0.1E            *
*                                      *
*  RUN DATE  10/17/96  TIME  16:34:57  *
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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
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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

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	204A	130.	12.20	16.	4.	3.	0.11		
+	ROUTED TO	522523	126.	12.40	16.	4.	3.	0.11		
+	HYDROGRAPH AT	204B	134.	12.25	18.	4.	4.	0.13		
+	2 COMBINED AT	C523I	248.	12.30	33.	8.	7.	0.23		
+	ROUTED TO	C523O	202.	12.50	33.	8.	7.	0.23		
+	DIVERSION TO	D523R	0.	0.02	0.	0.	0.	0.23		
+	HYDROGRAPH AT	D523L	202.	12.50	33.	8.	7.	0.23		
+	ROUTED TO	523524	201.	12.57	33.	8.	7.	0.23		
+	HYDROGRAPH AT	204C	119.	12.07	15.	4.	3.	0.08		
+	2 COMBINED AT	C524	228.	12.50	48.	13.	10.	0.31		
+	ROUTED TO	524525	228.	12.55	48.	13.	10.	0.31		
+	HYDROGRAPH AT	204D	74.	12.03	10.	3.	2.	0.04		
+	2 COMBINED AT	C525	249.	12.18	57.	16.	12.	0.35		
+	ROUTED TO	525526	249.	12.22	57.	16.	12.	0.35		
+	HYDROGRAPH AT	204E	111.	12.07	15.	5.	4.	0.07		
+	2 COMBINED AT	C526	344.	12.13	73.	20.	16.	0.43		

+	ROUTED TO	526527	340.	12.20	73.	20.	16.	0.43
+	HYDROGRAPH AT	204F	147.	12.02	19.	6.	5.	0.08
+	2 COMBINED AT	C527	426.	12.12	92.	26.	21.	0.50
+	HYDROGRAPH AT	205A	130.	12.23	22.	7.	6.	0.12
+	HYDROGRAPH AT	205B	284.	12.18	40.	12.	10.	0.21
+	2 COMBINED AT	C528	411.	12.20	62.	19.	15.	0.33
+	ROUTED TO	528530	408.	12.23	62.	19.	15.	0.33
+	HYDROGRAPH AT	205C	65.	12.22	11.	3.	3.	0.06
+	2 COMBINED AT	C530R	472.	12.23	73.	23.	18.	0.39
+	HYDROGRAPH AT	205D	405.	12.22	60.	19.	15.	0.32
+	HYDROGRAPH AT	205E	203.	12.32	41.	13.	10.	0.22
+	2 COMBINED AT	C529	596.	12.25	100.	31.	25.	0.54
+	2 COMBINED AT	C530	1064.	12.23	173.	54.	43.	0.93
+	ROUTED TO	530531	1056.	12.28	173.	54.	43.	0.93
+	HYDROGRAPH AT	205F	197.	12.22	30.	9.	8.	0.16
+	2 COMBINED AT	C531	1241.	12.27	202.	63.	50.	1.09
+	ROUTED TO	531532	1230.	12.33	202.	63.	50.	1.09
+	HYDROGRAPH AT	205G	214.	12.23	33.	10.	8.	0.19
+	2 COMBINED AT	C532L	1420.	12.32	235.	73.	59.	1.27
+	HYDROGRAPH AT	205H	237.	12.33	47.	14.	12.	0.26
+	2 COMBINED AT	C532	1654.	12.32	282.	87.	70.	1.53
+	ROUTED TO	532533	1649.	12.35	282.	87.	70.	1.53
+	HYDROGRAPH AT	205I	367.	12.28	56.	16.	13.	0.35
+	2 COMBINED AT	C533	2000.	12.33	337.	103.	82.	1.89
+	ROUTED TO	533534	1959.	12.48	337.	103.	82.	1.89
+	HYDROGRAPH AT	205J	361.	12.28	50.	13.	10.	0.37
+	2 COMBINED AT	C534R	2220.	12.47	386.	115.	93.	2.25
+	HYDROGRAPH AT	205K	183.	12.37	35.	9.	7.	0.25
+	2 COMBINED AT	C534	2390.	12.47	420.	124.	100.	2.50
+	ROUTED TO	534535	2378.	12.52	420.	124.	100.	2.50

+	HYDROGRAPH AT	205L	147.	12.17	15.	4.	3.	0.12
+	2 COMBINED AT	C535	2425.	12.50	435.	128.	103.	2.62
+	ROUTED TO	535536	2397.	12.63	435.	128.	103.	2.62
+	HYDROGRAPH AT	205M	195.	12.08	25.	7.	6.	0.14
+	2 COMBINED AT	C536R	2443.	12.63	460.	135.	108.	2.76
+	HYDROGRAPH AT	205N	141.	12.22	22.	6.	4.	0.16
+	2 COMBINED AT	C536I	2520.	12.62	481.	140.	113.	2.91
+	ROUTED TO	C536O	321.	14.02	307.	140.	113.	2.91
+	ROUTED TO	536537	321.	14.08	307.	140.	113.	2.91
+	HYDROGRAPH AT	206A	224.	12.02	26.	8.	6.	0.13
+	2 COMBINED AT	C537	348.	12.07	312.	148.	119.	3.04
+	ROUTED TO	537538	341.	12.12	312.	148.	119.	3.04
+	HYDROGRAPH AT	206B	168.	12.02	21.	6.	5.	0.09
+	2 COMBINED AT	C538I	489.	12.07	327.	154.	124.	3.14
+	ROUTED TO	C538O	446.	12.15	324.	154.	124.	3.14
+	ROUTED TO	538540	438.	12.25	324.	154.	124.	3.14
+	HYDROGRAPH AT	206C	26.	12.10	4.	1.	1.	0.02
+	2 COMBINED AT	C540R	459.	12.25	326.	155.	125.	3.16
+	HYDROGRAPH AT	206D	110.	12.02	14.	4.	3.	0.06
+	ROUTED TO	539540	108.	12.10	14.	4.	3.	0.06
+	HYDROGRAPH AT	206E	25.	12.08	3.	1.	1.	0.02
+	2 COMBINED AT	C540L	133.	12.10	17.	5.	4.	0.09
+	2 COMBINED AT	C540	560.	12.22	338.	160.	129.	3.24
+	ROUTED TO	540541	545.	12.40	338.	160.	129.	3.24
+	HYDROGRAPH AT	206F	159.	12.15	21.	6.	4.	0.16
+	2 COMBINED AT	C541	655.	12.37	354.	165.	133.	3.40
+	ROUTED TO	541548	654.	12.38	354.	165.	133.	3.40
+	HYDROGRAPH AT	206G	75.	12.23	14.	4.	3.	0.09
+	HYDROGRAPH AT	BB523R	0.	0.02	0.	0.	0.	0.23
+	ROUTED TO	523548	0.	0.02	0.	0.	0.	0.23

	3 COMBINED AT							
+		C548L	721.	12.37	367.	169.	136.	3.72
	HYDROGRAPH AT							
+		206H	89.	12.07	12.	3.	3.	0.06
	ROUTED TO							
+		542543	88.	12.10	12.	3.	3.	0.06
	HYDROGRAPH AT							
+		206I	37.	12.02	4.	1.	1.	0.02
	2 COMBINED AT							
+		C543	122.	12.07	16.	5.	4.	0.08
	DIVERSION TO							
+		D543R	122.	12.07	16.	5.	4.	0.08
	HYDROGRAPH AT							
+		D543L	0.	0.02	0.	0.	0.	0.08
	ROUTED TO							
+		543544	0.	0.02	0.	0.	0.	0.08
	HYDROGRAPH AT							
+		206K	62.	12.13	9.	2.	2.	0.06
	2 COMBINED AT							
+		C544	62.	12.13	8.	2.	2.	0.14
	ROUTED TO							
+		544545	61.	12.18	8.	2.	2.	0.14
	DIVERSION TO							
+		D545R	31.	12.18	4.	1.	1.	0.14
	HYDROGRAPH AT							
+		D545L	31.	12.18	4.	1.	1.	0.14
	ROUTED TO							
+		545546	31.	12.20	4.	1.	1.	0.14
	HYDROGRAPH AT							
+		206L	73.	12.12	10.	3.	2.	0.06
	2 COMBINED AT							
+		C546	102.	12.13	14.	4.	3.	0.20
	ROUTED TO							
+		546547	102.	12.17	14.	4.	3.	0.20
	HYDROGRAPH AT							
+		BB543R	122.	12.07	16.	5.	4.	0.08
	ROUTED TO							
+		543547	121.	12.15	16.	5.	4.	0.08
	HYDROGRAPH AT							
+		BB545R	31.	12.18	4.	1.	1.	0.14
	ROUTED TO							
+		545547	30.	12.23	4.	1.	1.	0.14
	HYDROGRAPH AT							
+		206J	111.	12.02	14.	4.	3.	0.06
	4 COMBINED AT							
+		C547	335.	12.07	48.	14.	11.	0.26
	ROUTED TO							
+		547548	330.	12.13	48.	14.	11.	0.26
	HYDROGRAPH AT							
+		206M	109.	12.02	14.	4.	3.	0.06
	2 COMBINED AT							
+		C548R	412.	12.08	62.	18.	15.	0.32
	2 COMBINED AT							
+		C548	1038.	12.27	420.	186.	151.	4.04
	ROUTED TO							
+		548549	1025.	12.38	419.	186.	150.	4.04
	HYDROGRAPH AT							
+		206N	259.	12.03	35.	11.	9.	0.15
	2 COMBINED AT							
+		C549L	1105.	12.35	443.	197.	159.	4.19

+	HYDROGRAPH AT 207A	254.	12.30	46.	14.	11.	0.26
+	HYDROGRAPH AT 207B	202.	12.30	38.	12.	9.	0.21
+	2 COMBINED AT C550	455.	12.30	84.	26.	21.	0.46
+	ROUTED TO 550552	450.	12.37	84.	26.	21.	0.46
+	HYDROGRAPH AT 207C	197.	12.22	27.	8.	6.	0.17
+	2 COMBINED AT C552L	617.	12.32	111.	33.	27.	0.64
+	HYDROGRAPH AT 207D	219.	12.25	37.	11.	9.	0.20
+	ROUTED TO 551552	216.	12.35	37.	11.	9.	0.20
+	HYDROGRAPH AT 207E	123.	12.35	29.	9.	7.	0.16
+	2 COMBINED AT C552R	339.	12.35	66.	21.	16.	0.35
+	2 COMBINED AT C552	951.	12.33	176.	53.	43.	0.99
+	ROUTED TO 552553	947.	12.37	176.	53.	43.	0.99
+	HYDROGRAPH AT 207F	135.	12.18	23.	7.	6.	0.13
+	2 COMBINED AT C553	1057.	12.35	199.	61.	49.	1.12
+	ROUTED TO 553556	1053.	12.40	199.	61.	49.	1.12
+	HYDROGRAPH AT 207G	201.	12.35	36.	10.	8.	0.24
+	2 COMBINED AT C556L	1249.	12.38	234.	70.	56.	1.35
+	HYDROGRAPH AT 207H	122.	12.27	23.	7.	6.	0.12
+	ROUTED TO 554555	120.	12.33	23.	7.	6.	0.12
+	HYDROGRAPH AT 207I	70.	12.27	14.	4.	3.	0.07
+	2 COMBINED AT C555	187.	12.30	37.	11.	9.	0.20
+	ROUTED TO 555556	184.	12.43	37.	11.	9.	0.20
+	HYDROGRAPH AT 207J	102.	12.17	18.	6.	5.	0.09
+	2 COMBINED AT C556R	260.	12.37	55.	17.	14.	0.29
+	2 COMBINED AT C556	1505.	12.38	289.	87.	70.	1.64
+	ROUTED TO 556557	1498.	12.43	289.	87.	70.	1.64
+	HYDROGRAPH AT 207K	171.	12.12	26.	8.	6.	0.13
+	2 COMBINED AT C557R	1595.	12.42	314.	94.	76.	1.77
+	HYDROGRAPH AT 207L	119.	12.07	16.	5.	4.	0.08
+	2 COMBINED AT C557	1647.	12.40	330.	99.	80.	1.85

+	ROUTED TO	557558	1640.	12.47	330.	99.	80.	1.85
+	HYDROGRAPH AT	207M	158.	12.08	18.	5.	4.	0.12
+	2 COMBINED AT	C558	1696.	12.45	347.	104.	83.	1.97
+	ROUTED TO	558560	1691.	12.50	347.	104.	83.	1.97
+	HYDROGRAPH AT	207O	183.	12.15	20.	5.	4.	0.13
+	2 COMBINED AT	C560R	1745.	12.48	367.	109.	88.	2.10
+	HYDROGRAPH AT	207N	64.	12.08	8.	2.	2.	0.05
+	ROUTED TO	559560	62.	12.22	8.	2.	2.	0.05
+	2 COMBINED AT	C560I	1781.	12.48	375.	111.	89.	2.15
+	ROUTED TO	C560O	275.	13.95	254.	111.	89.	2.15
+	ROUTED TO	560585	275.	14.03	254.	111.	89.	2.15
+	HYDROGRAPH AT	210A	164.	12.15	18.	5.	4.	0.12
+	2 COMBINED AT	C585	282.	12.20	259.	116.	93.	2.27
+	HYDROGRAPH AT	208A	189.	12.17	26.	8.	7.	0.14
+	ROUTED TO	561563	187.	12.22	26.	8.	7.	0.14
+	HYDROGRAPH AT	208B	27.	12.20	5.	2.	1.	0.03
+	2 COMBINED AT	C563R	214.	12.22	31.	10.	8.	0.17
+	HYDROGRAPH AT	208C	76.	12.20	12.	4.	3.	0.07
+	ROUTED TO	562563	74.	12.28	12.	4.	3.	0.07
+	HYDROGRAPH AT	208D	74.	12.25	14.	4.	3.	0.08
+	2 COMBINED AT	C563L	148.	12.27	26.	8.	7.	0.14
+	2 COMBINED AT	C563	359.	12.23	57.	18.	14.	0.31
+	ROUTED TO	563564	355.	12.30	57.	18.	14.	0.31
+	HYDROGRAPH AT	208E	66.	12.22	12.	4.	3.	0.06
+	2 COMBINED AT	C564R	417.	12.28	69.	21.	17.	0.37
+	HYDROGRAPH AT	208F	80.	12.20	13.	4.	3.	0.07
+	2 COMBINED AT	C564	492.	12.27	82.	25.	20.	0.44
+	ROUTED TO	564565	484.	12.38	82.	25.	20.	0.44
+	HYDROGRAPH AT	208G	153.	12.15	25.	8.	6.	0.13
+	2 COMBINED AT	C565	598.	12.35	106.	33.	26.	0.57

+	ROUTED TO	565568	593.	12.40	106.	33.	26.	0.57
+	HYDROGRAPH AT	208H	44.	12.20	7.	2.	1.	0.04
+	2 COMBINED AT	C568L	625.	12.40	113.	35.	28.	0.61
+	HYDROGRAPH AT	208I	131.	12.23	22.	7.	5.	0.12
+	HYDROGRAPH AT	208J	70.	12.28	15.	5.	4.	0.08
+	2 COMBINED AT	C566	198.	12.25	37.	11.	9.	0.20
+	ROUTED TO	566567	196.	12.32	37.	11.	9.	0.20
+	HYDROGRAPH AT	208K	60.	12.17	9.	3.	2.	0.05
+	2 COMBINED AT	C567L	245.	12.27	46.	14.	11.	0.25
+	HYDROGRAPH AT	208L	61.	12.22	11.	3.	3.	0.06
+	2 COMBINED AT	C567	305.	12.25	57.	18.	14.	0.31
+	ROUTED TO	567568	301.	12.35	57.	18.	14.	0.31
+	HYDROGRAPH AT	208M	162.	12.28	30.	9.	7.	0.16
+	2 COMBINED AT	C568R	455.	12.32	86.	27.	22.	0.46
+	2 COMBINED AT	C568	1067.	12.37	198.	61.	49.	1.07
+	ROUTED TO	568573	1060.	12.42	198.	61.	49.	1.07
+	HYDROGRAPH AT	208N	54.	12.22	10.	3.	2.	0.05
+	2 COMBINED AT	C573L	1101.	12.42	208.	64.	52.	1.12
+	HYDROGRAPH AT	208O	249.	12.27	43.	13.	11.	0.23
+	ROUTED TO	569570	248.	12.30	43.	13.	11.	0.23
+	HYDROGRAPH AT	208P	84.	12.13	11.	3.	3.	0.06
+	2 COMBINED AT	C570R	310.	12.23	54.	16.	13.	0.29
+	HYDROGRAPH AT	208Q	106.	12.23	18.	5.	4.	0.09
+	2 COMBINED AT	C570	414.	12.23	71.	22.	17.	0.38
+	HYDROGRAPH AT	208R	15.	12.10	2.	1.	0.	0.01
+	ROUTED TO	571572	14.	12.15	2.	1.	0.	0.01
+	2 COMBINED AT	C572	427.	12.22	73.	22.	18.	0.39
+	ROUTED TO	572573	426.	12.25	73.	22.	18.	0.39
+	HYDROGRAPH AT	208S	95.	12.17	14.	4.	4.	0.07
+	2 COMBINED AT	C573R	514.	12.23	88.	27.	21.	0.46

+	2 COMBINED AT	C573	1532.	12.38	294.	91.	73.	1.58
+	HYDROGRAPH AT	208T	170.	12.18	25.	7.	6.	0.13
+	HYDROGRAPH AT	208U	209.	12.10	25.	7.	6.	0.13
+	2 COMBINED AT	C574	372.	12.13	49.	15.	12.	0.27
+	ROUTED TO	574575	371.	12.15	49.	15.	12.	0.27
+	HYDROGRAPH AT	208V	41.	12.12	5.	2.	1.	0.03
+	2 COMBINED AT	C575	411.	12.15	55.	16.	13.	0.29
+	ROUTED TO	575576	407.	12.18	55.	16.	13.	0.29
+	HYDROGRAPH AT	208W	71.	12.13	9.	3.	2.	0.05
+	2 COMBINED AT	C576	475.	12.18	64.	19.	15.	0.34
+	ROUTED TO	576577	474.	12.20	64.	19.	15.	0.34
+	2 COMBINED AT	C577	1879.	12.35	357.	109.	88.	1.92
+	ROUTED TO	577578	1874.	12.37	357.	109.	88.	1.92
+	HYDROGRAPH AT	208X	115.	12.12	13.	4.	3.	0.08
+	2 COMBINED AT	C578I	1922.	12.35	370.	113.	91.	2.00
+	ROUTED TO	C578O	319.	13.52	298.	113.	91.	2.00
+	ROUTED TO	578587	319.	13.58	298.	113.	91.	2.00
+	HYDROGRAPH AT	210B	110.	12.18	17.	5.	4.	0.11
+	ROUTED TO	C586O	108.	12.22	17.	5.	4.	0.11
+	ROUTED TO	586587	108.	12.28	17.	5.	4.	0.11
+	2 COMBINED AT	C587	375.	12.42	311.	118.	95.	2.11
+	ROUTED TO	587595	374.	12.45	311.	118.	95.	2.11
+	HYDROGRAPH AT	210C	95.	12.18	12.	3.	2.	0.08
+	2 COMBINED AT	C595L	436.	12.30	320.	121.	97.	2.19
+	HYDROGRAPH AT	210D	180.	12.20	24.	7.	6.	0.14
+	ROUTED TO	588590	178.	12.22	24.	7.	6.	0.14
+	HYDROGRAPH AT	210E	37.	12.17	4.	1.	1.	0.03
+	2 COMBINED AT	C590L	212.	12.20	29.	8.	6.	0.17
+	HYDROGRAPH AT	210F	110.	12.20	17.	5.	4.	0.09
+	ROUTED TO	589590	109.	12.25	17.	5.	4.	0.09

+	HYDROGRAPH AT	210G	185.	12.23	29.	8.	7.	0.16
+	2 COMBINED AT	C590R	293.	12.25	46.	14.	11.	0.25
+	2 COMBINED AT	C590	502.	12.23	75.	22.	17.	0.42
+	HYDROGRAPH AT	210H	94.	12.15	11.	3.	2.	0.07
+	ROUTED TO	592593	93.	12.20	11.	3.	2.	0.07
+	2 COMBINED AT	C593	593.	12.22	85.	25.	20.	0.49
+	ROUTED TO	593594	590.	12.25	85.	25.	20.	0.49
+	HYDROGRAPH AT	210I	58.	12.20	8.	2.	2.	0.05
+	2 COMBINED AT	C594	645.	12.25	93.	27.	21.	0.54
+	ROUTED TO	594595	635.	12.33	93.	27.	21.	0.54
+	HYDROGRAPH AT	210J	130.	12.20	16.	4.	3.	0.10
+	2 COMBINED AT	C595R	741.	12.32	109.	31.	24.	0.64
+	2 COMBINED AT	C595	1172.	12.32	423.	151.	121.	2.83
+	ROUTED TO	595596	1167.	12.37	423.	151.	121.	2.83
+	HYDROGRAPH AT	210K	117.	12.12	12.	3.	2.	0.08
+	2 COMBINED AT	C596	1221.	12.33	433.	154.	124.	2.91
+	HYDROGRAPH AT	209A	478.	12.22	69.	21.	17.	0.37
+	ROUTED TO	579580	477.	12.25	69.	21.	17.	0.37
+	HYDROGRAPH AT	209C	65.	12.23	12.	4.	3.	0.06
+	2 COMBINED AT	C580R	541.	12.25	81.	25.	20.	0.43
+	HYDROGRAPH AT	209B	94.	12.22	16.	5.	4.	0.08
+	2 COMBINED AT	C580	633.	12.23	96.	30.	24.	0.51
+	ROUTED TO	580581	629.	12.28	96.	30.	24.	0.51
+	HYDROGRAPH AT	209D	327.	12.18	45.	14.	11.	0.24
+	2 COMBINED AT	C581R	935.	12.23	141.	44.	35.	0.76
+	HYDROGRAPH AT	209E	153.	12.27	28.	9.	7.	0.15
+	2 COMBINED AT	C581	1085.	12.23	169.	53.	42.	0.91
+	ROUTED TO	581582	1076.	12.30	169.	53.	42.	0.91
+	HYDROGRAPH AT	209F	233.	12.28	41.	12.	10.	0.23
+	2 COMBINED AT	C582R	1306.	12.30	209.	65.	52.	1.13

+	HYDROGRAPH AT	209G	219.	12.27	38.	12.	10.	0.20
+	2 COMBINED AT	C582	1521.	12.30	247.	77.	61.	1.34
+	ROUTED TO	582583	1510.	12.33	247.	77.	61.	1.34
+	HYDROGRAPH AT	209H	115.	12.15	14.	4.	3.	0.08
+	2 COMBINED AT	C583	1580.	12.32	261.	80.	65.	1.42
+	ROUTED TO	583584	1568.	12.40	261.	80.	65.	1.42
+	HYDROGRAPH AT	209I	270.	12.13	28.	7.	6.	0.18
+	2 COMBINED AT	C584I	1683.	12.37	289.	88.	70.	1.60
+	ROUTED TO	C584O	351.	13.23	283.	88.	70.	1.60
+	ROUTED TO	584597	351.	13.40	283.	88.	70.	1.60
+	HYDROGRAPH AT	210L	153.	12.13	18.	4.	4.	0.14
+	2 COMBINED AT	C597	388.	12.35	300.	92.	74.	1.74
+	ROUTED TO	597598	387.	12.47	299.	92.	74.	1.74
+	HYDROGRAPH AT	210M	178.	12.23	23.	6.	5.	0.16
+	2 COMBINED AT	C598	517.	12.37	321.	98.	78.	1.90
+	HYDROGRAPH AT	210N	66.	12.08	7.	2.	1.	0.05
+	4 COMBINED AT	C599	1967.	12.33	1000.	360.	290.	7.13
+	ROUTED TO	599608	1963.	12.37	1000.	360.	290.	7.13
+	HYDROGRAPH AT	211K	169.	12.03	18.	5.	4.	0.10
+	2 COMBINED AT	C608L	2006.	12.35	1012.	365.	293.	7.24
+	HYDROGRAPH AT	211G	11.	12.05	2.	1.	1.	0.01
+	ROUTED TO	604606	11.	12.23	2.	1.	1.	0.01
+	HYDROGRAPH AT	211I	47.	12.20	8.	3.	2.	0.04
+	2 COMBINED AT	C606R	58.	12.20	11.	3.	3.	0.05
+	HYDROGRAPH AT	211H	103.	12.13	11.	3.	2.	0.07
+	ROUTED TO	C605O	89.	12.23	11.	3.	2.	0.07
+	2 COMBINED AT	C606	146.	12.22	22.	6.	5.	0.12
+	ROUTED TO	606607	145.	12.25	22.	6.	5.	0.12
+	HYDROGRAPH AT	211J	22.	12.07	3.	1.	1.	0.01
+	2 COMBINED AT	C607	161.	12.23	25.	7.	6.	0.14

	ROUTED TO							
+		607608	160.	12.27	25.	7.	6.	0.14
	2 COMBINED AT							
+		C608	2154.	12.33	1034.	371.	298.	7.37
	ROUTED TO							
+		608613	2152.	12.37	1034.	371.	298.	7.37
	HYDROGRAPH AT							
+		211M	117.	12.15	16.	5.	4.	0.08
	ROUTED TO							
+		610611	116.	12.18	16.	5.	4.	0.08
	HYDROGRAPH AT							
+		211N	30.	12.05	4.	1.	1.	0.02
	2 COMBINED AT							
+		C611R	142.	12.15	19.	6.	5.	0.10
	HYDROGRAPH AT							
+		211O	62.	12.07	8.	3.	2.	0.04
	ROUTED TO							
+		C609O	48.	12.22	8.	3.	2.	0.04
	ROUTED TO							
+		609611	48.	12.23	8.	3.	2.	0.04
	2 COMBINED AT							
+		C611I	188.	12.17	28.	8.	7.	0.14
	ROUTED TO							
+		C611O	126.	12.38	28.	8.	6.	0.14
	DIVERSION TO							
+		D611R	126.	12.38	28.	8.	6.	0.14
	HYDROGRAPH AT							
+		D611L	0.	0.02	0.	0.	0.	0.14
	ROUTED TO							
+		611612	0.	0.02	0.	0.	0.	0.14
	HYDROGRAPH AT							
+		211P	65.	12.00	8.	3.	2.	0.03
	2 COMBINED AT							
+		C612	64.	12.00	8.	3.	2.	0.17
	2 COMBINED AT							
+		C613	2160.	12.37	1038.	373.	300.	7.55
	ROUTED TO							
+		613621	2159.	12.38	1038.	373.	300.	7.55
	HYDROGRAPH AT							
+		211L	162.	12.02	19.	6.	5.	0.10
	2 COMBINED AT							
+		C621L	2188.	12.37	1050.	378.	304.	7.64
	HYDROGRAPH AT							
+		211Q	32.	12.05	3.	1.	1.	0.02
	ROUTED TO							
+		616617	31.	12.10	3.	1.	1.	0.02
	HYDROGRAPH AT							
+		211R	118.	12.08	15.	4.	4.	0.08
	2 COMBINED AT							
+		C617L	149.	12.08	19.	5.	4.	0.10
	HYDROGRAPH AT							
+		211U	34.	12.08	7.	2.	2.	0.03
	DIVERSION TO							
+		D614R	24.	12.08	5.	1.	1.	0.03
	HYDROGRAPH AT							
+		D614L	10.	12.08	2.	1.	1.	0.03
	2 COMBINED AT							
+		C617	159.	12.08	21.	6.	5.	0.13
	ROUTED TO							
+		617618	157.	12.17	21.	6.	5.	0.13

+	HYDROGRAPH AT	211S	73.	12.07	10.	3.	2.	0.05
+	2 COMBINED AT	C618I	225.	12.13	31.	9.	7.	0.18
+	ROUTED TO	C618O	220.	12.18	24.	8.	7.	0.18
+	HYDROGRAPH AT	BB614R	24.	12.08	5.	1.	1.	0.03
+	ROUTED TO	614615	24.	12.12	5.	1.	1.	0.03
+	HYDROGRAPH AT	211V	9.	12.02	2.	1.	0.	0.00
+	2 COMBINED AT	C615	31.	12.07	6.	2.	2.	0.03
+	DIVERSION TO	D615R	11.	12.07	1.	0.	0.	0.03
+	HYDROGRAPH AT	D615L	21.	12.07	5.	2.	1.	0.03
+	ROUTED TO	615618	21.	12.08	5.	2.	1.	0.03
+	2 COMBINED AT	C618	239.	12.18	29.	10.	8.	0.19
+	ROUTED TO	618619	235.	12.25	29.	10.	8.	0.19
+	HYDROGRAPH AT	211T	95.	12.08	12.	3.	3.	0.07
+	2 COMBINED AT	C619L	307.	12.23	41.	13.	11.	0.26
+	HYDROGRAPH AT	BB615R	11.	12.07	1.	0.	0.	0.03
+	ROUTED TO	615619	10.	12.18	1.	0.	0.	0.03
+	2 COMBINED AT	C619I	317.	12.23	42.	14.	11.	0.25
+	ROUTED TO	C619O	176.	12.53	42.	14.	11.	0.25
+	DIVERSION TO	D619L	0.	0.02	0.	0.	0.	0.25
+	HYDROGRAPH AT	D619R	176.	12.53	42.	14.	11.	0.25
+	ROUTED TO	619620	176.	12.55	42.	14.	11.	0.25
+	HYDROGRAPH AT	BB619L	0.	0.02	0.	0.	0.	0.25
+	ROUTED TO	619620	0.	0.02	0.	0.	0.	0.25
+	HYDROGRAPH AT	211W	58.	12.00	8.	3.	2.	0.03
+	3 COMBINED AT	C620R	187.	12.33	50.	16.	13.	0.28
+	HYDROGRAPH AT	BB611R	126.	12.38	28.	8.	6.	0.14
+	ROUTED TO	611620	126.	12.40	28.	8.	6.	0.14
+	2 COMBINED AT	C620	312.	12.40	77.	24.	20.	0.42
+	ROUTED TO	620621	312.	12.42	77.	24.	20.	0.42
+	2 COMBINED AT	C621	2491.	12.37	1120.	401.	323.	7.93

+	ROUTED TO	621622	2481.	12.47	1119.	401.	323.	7.93
+	HYDROGRAPH AT	211X	304.	12.10	46.	15.	12.	0.21
+	2 COMBINED AT	C622R	2618.	12.43	1154.	414.	333.	8.14
+	HYDROGRAPH AT	211A	173.	12.13	24.	7.	5.	0.14
+	ROUTED TO	C600O	171.	12.18	24.	7.	5.	0.14
+	ROUTED TO	600601	169.	12.25	24.	7.	5.	0.14
+	HYDROGRAPH AT	211B	147.	12.10	18.	5.	4.	0.11
+	2 COMBINED AT	C601	300.	12.17	42.	12.	9.	0.25
+	ROUTED TO	601602	298.	12.23	42.	12.	9.	0.25
+	HYDROGRAPH AT	211C	77.	12.02	10.	3.	2.	0.04
+	2 COMBINED AT	C602L	338.	12.18	51.	15.	12.	0.30
+	HYDROGRAPH AT	211D	89.	12.07	12.	4.	3.	0.07
+	2 COMBINED AT	C602	418.	12.13	64.	18.	15.	0.37
+	ROUTED TO	602603	415.	12.20	64.	18.	15.	0.37
+	HYDROGRAPH AT	211E	279.	12.02	34.	11.	9.	0.16
+	2 COMBINED AT	C603	617.	12.08	97.	29.	23.	0.52
+	ROUTED TO	603622	605.	12.17	97.	29.	23.	0.52
+	HYDROGRAPH AT	211F	190.	12.03	28.	9.	7.	0.11
+	2 COMBINED AT	C622L	753.	12.13	125.	38.	31.	0.63
+	2 COMBINED AT	C622	3097.	12.40	1261.	448.	361.	8.78
+	ROUTED TO	622549	3082.	12.48	1259.	448.	361.	8.78
+	HYDROGRAPH AT	211Y	128.	12.10	17.	5.	4.	0.09
+	2 COMBINED AT	C549R	3132.	12.47	1272.	452.	364.	8.87
+	2 COMBINED AT	C549	4068.	12.45	1677.	628.	507.	13.06
+	ROUTED TO	549626	4051.	12.53	1675.	628.	507.	13.06
+	HYDROGRAPH AT	211Z	137.	12.02	16.	5.	4.	0.08
+	2 COMBINED AT	C626C	4066.	12.53	1683.	633.	510.	13.14
+	HYDROGRAPH AT	211AA	47.	12.08	8.	2.	2.	0.03
+	ROUTED TO	625626	46.	12.15	8.	2.	2.	0.03
+	HYDROGRAPH AT	211AB	74.	12.02	8.	2.	2.	0.04

	ROUTED TO							
+		623624	73.	12.02	8.	2.	2.	0.04
	HYDROGRAPH AT							
+		211AC	51.	12.02	7.	2.	2.	0.03
	2 COMBINED AT							
+		C624	125.	12.02	15.	5.	4.	0.07
	ROUTED TO							
+		624626	124.	12.07	15.	5.	4.	0.07
	HYDROGRAPH AT							
+		211AD	76.	12.02	10.	3.	3.	0.04
	2 COMBINED AT							
+		C626R	198.	12.03	26.	8.	6.	0.11
	3 COMBINED AT							
+		C626	4127.	12.53	1702.	641.	518.	13.28
	ROUTED TO							
+		626627	4125.	12.53	1702.	641.	518.	13.28
	HYDROGRAPH AT							
+		211AE	63.	12.02	8.	2.	2.	0.03
	2 COMBINED AT							
+		C627	4134.	12.53	1706.	643.	519.	13.32
	HYDROGRAPH AT							
+		211AF	96.	12.02	11.	3.	3.	0.05

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

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1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              MAY   1991              *
 *           VERSION 4.0.1E             *
 *                                      *
 *  RUN DATE  10/17/96  TIME  16:46:01  *
 *                                      *
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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

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	204A	334.	4.03	26.	9.	9.	0.11		
+	ROUTED TO	522523	309.	4.18	26.	9.	9.	0.11		
+	HYDROGRAPH AT	204B	365.	4.05	31.	10.	10.	0.13		
+	2 COMBINED AT	C523I	586.	4.08	57.	19.	19.	0.23		
+	ROUTED TO	C523O	570.	4.15	57.	19.	19.	0.23		
+	DIVERSION TO	D523R	68.	4.15	3.	1.	1.	0.23		
+	HYDROGRAPH AT	D523L	502.	4.15	54.	18.	18.	0.23		
+	ROUTED TO	523524	484.	4.23	54.	18.	18.	0.23		
+	HYDROGRAPH AT	204C	275.	4.02	23.	8.	8.	0.08		
+	2 COMBINED AT	C524	555.	4.22	78.	26.	26.	0.31		
+	ROUTED TO	524525	550.	4.25	78.	26.	26.	0.31		
+	HYDROGRAPH AT	204D	149.	4.02	13.	4.	4.	0.04		
+	2 COMBINED AT	C525	596.	4.05	90.	30.	30.	0.35		
+	ROUTED TO	525526	582.	4.27	90.	30.	30.	0.35		
+	HYDROGRAPH AT	204E	224.	4.03	19.	6.	6.	0.07		
+	2 COMBINED AT	C526	794.	4.05	109.	37.	37.	0.43		

+	ROUTED TO	526527	778.	4.10	109.	37.	37.	0.43
+	HYDROGRAPH AT	204F	260.	4.02	22.	7.	7.	0.08
+	2 COMBINED AT	C527	989.	4.07	131.	44.	44.	0.50
+	HYDROGRAPH AT	205A	210.	4.22	26.	9.	9.	0.12
+	HYDROGRAPH AT	205B	362.	4.32	47.	16.	16.	0.21
+	2 COMBINED AT	C528	548.	4.28	73.	25.	25.	0.33
+	ROUTED TO	528530	545.	4.33	73.	25.	25.	0.33
+	HYDROGRAPH AT	205C	107.	4.20	13.	4.	4.	0.06
+	2 COMBINED AT	C530R	629.	4.32	86.	29.	29.	0.39
+	HYDROGRAPH AT	205D	665.	4.23	71.	24.	24.	0.32
+	HYDROGRAPH AT	205E	301.	4.33	48.	16.	16.	0.22
+	2 COMBINED AT	C529	917.	4.25	119.	40.	40.	0.54
+	2 COMBINED AT	C530	1340.	4.27	197.	66.	66.	0.93
+	ROUTED TO	530531	1326.	4.32	197.	66.	66.	0.93
+	HYDROGRAPH AT	205F	325.	4.22	36.	12.	12.	0.16
+	2 COMBINED AT	C531	1504.	4.30	228.	77.	77.	1.09
+	ROUTED TO	531532	1490.	4.37	228.	77.	77.	1.09
+	HYDROGRAPH AT	205G	349.	4.23	40.	13.	13.	0.19
+	2 COMBINED AT	C532L	1661.	4.35	262.	88.	88.	1.27
+	HYDROGRAPH AT	205H	350.	4.35	56.	19.	19.	0.26
+	2 COMBINED AT	C532	1854.	4.35	310.	104.	104.	1.53
+	ROUTED TO	532533	1850.	4.38	310.	104.	104.	1.53
+	HYDROGRAPH AT	205I	559.	4.30	70.	23.	23.	0.35
+	2 COMBINED AT	C533	2132.	4.37	367.	123.	123.	1.89
+	ROUTED TO	533534	2100.	4.53	367.	123.	123.	1.89
+	HYDROGRAPH AT	205J	551.	4.28	65.	22.	22.	0.37
+	2 COMBINED AT	C534R	2306.	4.52	416.	140.	140.	2.25
+	HYDROGRAPH AT	205K	266.	4.38	45.	15.	15.	0.25
+	2 COMBINED AT	C534	2427.	4.53	450.	151.	151.	2.50
+	ROUTED TO	534535	2417.	4.58	450.	151.	151.	2.50

+	HYDROGRAPH AT	205L	263.	4.15	20.	7.	7.	0.12
+	2 COMBINED AT	C535	2441.	4.57	464.	156.	156.	2.62
+	ROUTED TO	535536	2419.	4.70	464.	156.	156.	2.62
+	HYDROGRAPH AT	205M	366.	4.07	31.	11.	11.	0.14
+	2 COMBINED AT	C536R	2427.	4.68	490.	165.	165.	2.76
+	HYDROGRAPH AT	205N	211.	4.25	29.	10.	10.	0.16
+	2 COMBINED AT	C536I	2496.	4.68	511.	172.	172.	2.91
+	ROUTED TO	C536O	326.	6.08	312.	172.	172.	2.91
+	ROUTED TO	536537	326.	6.13	312.	172.	172.	2.91
+	HYDROGRAPH AT	206A	408.	4.03	32.	11.	11.	0.13
+	2 COMBINED AT	C537	346.	4.27	317.	181.	181.	3.04
+	ROUTED TO	537538	343.	4.33	317.	181.	181.	3.04
+	HYDROGRAPH AT	206B	304.	4.03	25.	8.	8.	0.09
+	2 COMBINED AT	C538I	473.	4.08	330.	188.	188.	3.14
+	ROUTED TO	C538O	442.	4.23	327.	188.	188.	3.14
+	ROUTED TO	538540	441.	4.35	327.	188.	188.	3.14
+	HYDROGRAPH AT	206C	61.	4.05	5.	2.	2.	0.02
+	2 COMBINED AT	C540R	464.	4.32	329.	189.	189.	3.16
+	HYDROGRAPH AT	206D	205.	4.02	17.	6.	6.	0.06
+	ROUTED TO	539540	196.	4.10	17.	6.	6.	0.06
+	HYDROGRAPH AT	206E	71.	4.02	5.	2.	2.	0.02
+	2 COMBINED AT	C540L	254.	4.05	22.	7.	7.	0.09
+	2 COMBINED AT	C540	560.	4.27	342.	196.	196.	3.24
+	ROUTED TO	540541	553.	4.47	342.	196.	196.	3.24
+	HYDROGRAPH AT	206F	441.	4.05	36.	12.	12.	0.16
+	2 COMBINED AT	C541	658.	4.28	362.	205.	205.	3.40
+	ROUTED TO	541548	657.	4.33	362.	205.	205.	3.40
+	HYDROGRAPH AT	206G	213.	4.07	22.	7.	7.	0.09
+	HYDROGRAPH AT	BB523R	68.	4.15	3.	1.	1.	0.23
+	ROUTED TO	523548	60.	4.33	3.	1.	1.	0.23

+	3 COMBINED AT C548L	747.	4.30	377.	210.	210.	3.72
+	HYDROGRAPH AT 206H	188.	4.03	15.	5.	5.	0.06
+	ROUTED TO 542543	184.	4.05	15.	5.	5.	0.06
+	HYDROGRAPH AT 206I	75.	4.00	5.	2.	2.	0.02
+	2 COMBINED AT C543	252.	4.02	21.	7.	7.	0.08
+	DIVERSION TO D543R	252.	4.02	21.	7.	7.	0.08
+	HYDROGRAPH AT D543L	0.	0.02	0.	0.	0.	0.08
+	ROUTED TO 543544	0.	0.02	0.	0.	0.	0.08
+	HYDROGRAPH AT 206K	171.	4.03	14.	5.	5.	0.06
+	2 COMBINED AT C544	171.	4.03	14.	5.	5.	0.14
+	ROUTED TO 544545	167.	4.05	14.	5.	5.	0.14
+	DIVERSION TO D545R	84.	4.05	7.	2.	2.	0.14
+	HYDROGRAPH AT D545L	84.	4.05	7.	2.	2.	0.14
+	ROUTED TO 545546	83.	4.07	7.	2.	2.	0.14
+	HYDROGRAPH AT 206L	191.	4.02	15.	5.	5.	0.06
+	2 COMBINED AT C546	271.	4.03	22.	7.	7.	0.20
+	ROUTED TO 546547	269.	4.03	22.	7.	7.	0.20
+	HYDROGRAPH AT BB543R	252.	4.02	21.	7.	7.	0.08
+	ROUTED TO 543547	241.	4.10	21.	7.	7.	0.08
+	HYDROGRAPH AT BB545R	84.	4.05	7.	2.	2.	0.14
+	ROUTED TO 545547	81.	4.10	7.	2.	2.	0.14
+	HYDROGRAPH AT 206J	200.	4.02	16.	5.	5.	0.06
+	4 COMBINED AT C547	758.	4.05	66.	22.	22.	0.26
+	ROUTED TO 547548	732.	4.10	66.	22.	22.	0.26
+	HYDROGRAPH AT 206M	198.	4.02	16.	5.	5.	0.06
+	2 COMBINED AT C548R	883.	4.08	82.	27.	27.	0.32
+	2 COMBINED AT C548	1172.	4.10	440.	233.	233.	4.04
+	ROUTED TO 548549	1160.	4.25	440.	233.	233.	4.04
+	HYDROGRAPH AT 206N	459.	4.05	42.	14.	14.	0.15
+	2 COMBINED AT C549L	1331.	4.23	466.	245.	245.	4.19

+	HYDROGRAPH AT	207A	382.	4.30	55.	18.	18.	0.26
+	HYDROGRAPH AT	207B	306.	4.30	46.	15.	15.	0.21
+	2 COMBINED AT	C550	687.	4.30	101.	34.	34.	0.46
+	ROUTED TO	550552	675.	4.37	100.	34.	34.	0.46
+	HYDROGRAPH AT	207C	321.	4.22	34.	11.	11.	0.17
+	2 COMBINED AT	C552L	878.	4.35	132.	44.	44.	0.64
+	HYDROGRAPH AT	207D	424.	4.13	48.	16.	16.	0.20
+	ROUTED TO	551552	416.	4.22	48.	16.	16.	0.20
+	HYDROGRAPH AT	207E	286.	4.12	39.	13.	13.	0.16
+	2 COMBINED AT	C552R	679.	4.18	87.	29.	29.	0.35
+	2 COMBINED AT	C552	1312.	4.28	211.	71.	71.	0.99
+	ROUTED TO	552553	1308.	4.32	211.	71.	71.	0.99
+	HYDROGRAPH AT	207F	253.	4.15	30.	10.	10.	0.13
+	2 COMBINED AT	C553	1440.	4.30	237.	80.	80.	1.12
+	ROUTED TO	553556	1432.	4.33	237.	80.	80.	1.12
+	HYDROGRAPH AT	207G	277.	4.33	46.	15.	15.	0.24
+	2 COMBINED AT	C556L	1601.	4.35	276.	93.	93.	1.35
+	HYDROGRAPH AT	207H	312.	4.07	32.	11.	11.	0.12
+	ROUTED TO	554555	303.	4.12	32.	11.	11.	0.12
+	HYDROGRAPH AT	207I	213.	4.03	19.	7.	7.	0.07
+	2 COMBINED AT	C555	489.	4.07	51.	17.	17.	0.20
+	ROUTED TO	555556	475.	4.15	51.	17.	17.	0.20
+	HYDROGRAPH AT	207J	270.	4.05	25.	8.	8.	0.09
+	2 COMBINED AT	C556R	682.	4.10	76.	25.	25.	0.29
+	2 COMBINED AT	C556	1906.	4.30	343.	115.	115.	1.64
+	ROUTED TO	556557	1899.	4.35	343.	115.	115.	1.64
+	HYDROGRAPH AT	207K	362.	4.05	33.	11.	11.	0.13
+	2 COMBINED AT	C557R	2002.	4.33	372.	125.	125.	1.77
+	HYDROGRAPH AT	207L	236.	4.03	21.	7.	7.	0.08
+	2 COMBINED AT	C557	2067.	4.32	390.	132.	132.	1.85

	ROUTED TO							
+		557558	2055.	4.37	390.	132.	132.	1.85
	HYDROGRAPH AT							
+		207M	372.	4.03	28.	9.	9.	0.12
	2 COMBINED AT							
+		C558	2110.	4.35	414.	140.	140.	1.97
	ROUTED TO							
+		558560	2104.	4.40	414.	140.	140.	1.97
	HYDROGRAPH AT							
+		207O	413.	4.03	30.	10.	10.	0.13
	2 COMBINED AT							
+		C560R	2157.	4.38	440.	148.	148.	2.10
	HYDROGRAPH AT							
+		207N	160.	4.02	12.	4.	4.	0.05
	ROUTED TO							
+		559560	151.	4.10	12.	4.	4.	0.05
	2 COMBINED AT							
+		C560I	2201.	4.37	451.	152.	152.	2.15
	ROUTED TO							
+		C560O	294.	5.77	274.	152.	152.	2.15
	ROUTED TO							
+		560585	294.	5.85	274.	152.	152.	2.15
	HYDROGRAPH AT							
+		210A	397.	4.02	28.	9.	9.	0.12
	2 COMBINED AT							
+		C585	360.	4.03	283.	160.	160.	2.27
	HYDROGRAPH AT							
+		208A	480.	4.02	37.	12.	12.	0.14
	ROUTED TO							
+		561563	468.	4.03	37.	12.	12.	0.14
	HYDROGRAPH AT							
+		208B	82.	4.02	7.	2.	2.	0.03
	2 COMBINED AT							
+		C563R	549.	4.03	44.	15.	15.	0.17
	HYDROGRAPH AT							
+		208C	144.	4.10	16.	5.	5.	0.07
	ROUTED TO							
+		562563	141.	4.17	16.	5.	5.	0.07
	HYDROGRAPH AT							
+		208D	225.	4.03	20.	7.	7.	0.08
	2 COMBINED AT							
+		C563L	319.	4.05	36.	12.	12.	0.14
	2 COMBINED AT							
+		C563	864.	4.03	80.	27.	27.	0.31
	ROUTED TO							
+		563564	833.	4.08	80.	27.	27.	0.31
	HYDROGRAPH AT							
+		208E	192.	4.03	17.	6.	6.	0.06
	2 COMBINED AT							
+		C564R	994.	4.07	96.	32.	32.	0.37
	HYDROGRAPH AT							
+		208F	224.	4.02	18.	6.	6.	0.07
	2 COMBINED AT							
+		C564	1195.	4.05	114.	38.	38.	0.44
	ROUTED TO							
+		564565	1151.	4.13	114.	38.	38.	0.44
	HYDROGRAPH AT							
+		208G	398.	4.03	35.	12.	12.	0.13
	2 COMBINED AT							
+		C565	1398.	4.12	149.	50.	50.	0.57

+	ROUTED TO	565568	1371.	4.15	148.	50.	50.	0.57
+	HYDROGRAPH AT	208H	99.	4.07	11.	4.	4.	0.04
+	2 COMBINED AT	C568L	1429.	4.15	159.	53.	53.	0.61
+	HYDROGRAPH AT	208I	370.	4.03	31.	10.	10.	0.12
+	HYDROGRAPH AT	208J	221.	4.05	22.	7.	7.	0.08
+	2 COMBINED AT	C566	590.	4.03	53.	18.	18.	0.20
+	ROUTED TO	566567	572.	4.07	53.	18.	18.	0.20
+	HYDROGRAPH AT	208K	165.	4.02	13.	4.	4.	0.05
+	2 COMBINED AT	C567L	713.	4.05	66.	22.	22.	0.25
+	HYDROGRAPH AT	208L	183.	4.02	16.	5.	5.	0.06
+	2 COMBINED AT	C567	892.	4.03	82.	27.	27.	0.31
+	ROUTED TO	567568	855.	4.12	81.	27.	27.	0.31
+	HYDROGRAPH AT	208M	484.	4.03	46.	15.	15.	0.16
+	2 COMBINED AT	C568R	1263.	4.08	127.	43.	43.	0.46
+	2 COMBINED AT	C568	2210.	4.12	278.	93.	93.	1.07
+	ROUTED TO	568573	2187.	4.17	277.	93.	93.	1.07
+	HYDROGRAPH AT	208N	131.	4.05	14.	5.	5.	0.05
+	2 COMBINED AT	C573L	2245.	4.17	291.	98.	98.	1.12
+	HYDROGRAPH AT	208O	703.	4.03	61.	20.	20.	0.23
+	ROUTED TO	569570	693.	4.05	61.	20.	20.	0.23
+	HYDROGRAPH AT	208P	204.	4.02	17.	6.	6.	0.06
+	2 COMBINED AT	C570R	882.	4.03	78.	26.	26.	0.29
+	HYDROGRAPH AT	208Q	273.	4.05	26.	9.	9.	0.09
+	2 COMBINED AT	C570	1154.	4.03	104.	35.	35.	0.38
+	HYDROGRAPH AT	208R	35.	4.02	3.	1.	1.	0.01
+	ROUTED TO	571572	33.	4.05	3.	1.	1.	0.01
+	2 COMBINED AT	C572	1187.	4.03	107.	36.	36.	0.39
+	ROUTED TO	572573	1172.	4.05	107.	36.	36.	0.39
+	HYDROGRAPH AT	208S	229.	4.02	21.	7.	7.	0.07
+	2 COMBINED AT	C573R	1391.	4.05	128.	43.	43.	0.46

+	2 COMBINED AT	C573	2843.	4.12	409.	138.	138.	1.58
+	HYDROGRAPH AT	208T	433.	4.02	36.	12.	12.	0.13
+	HYDROGRAPH AT	208U	483.	4.00	36.	12.	12.	0.13
+	2 COMBINED AT	C574	911.	4.02	72.	24.	24.	0.27
+	ROUTED TO	574575	906.	4.02	72.	24.	24.	0.27
+	HYDROGRAPH AT	208V	97.	4.02	8.	3.	3.	0.03
+	2 COMBINED AT	C575	1002.	4.02	79.	26.	26.	0.29
+	ROUTED TO	575576	985.	4.05	79.	26.	26.	0.29
+	HYDROGRAPH AT	208W	170.	4.02	14.	5.	5.	0.05
+	2 COMBINED AT	C576	1146.	4.03	93.	31.	31.	0.34
+	ROUTED TO	576577	1143.	4.05	93.	31.	31.	0.34
+	2 COMBINED AT	C577	3345.	4.10	494.	166.	166.	1.92
+	ROUTED TO	577578	3329.	4.12	494.	166.	166.	1.92
+	HYDROGRAPH AT	208X	247.	4.02	19.	6.	6.	0.08
+	2 COMBINED AT	C578I	3404.	4.10	511.	172.	172.	2.00
+	ROUTED TO	C578O	1078.	4.67	390.	172.	172.	2.00
+	ROUTED TO	578587	1073.	4.72	390.	172.	172.	2.00
+	HYDROGRAPH AT	210B	307.	4.05	28.	9.	9.	0.11
+	ROUTED TO	C586O	246.	4.12	28.	9.	9.	0.11
+	ROUTED TO	586587	245.	4.17	28.	9.	9.	0.11
+	2 COMBINED AT	C587	1112.	4.72	411.	181.	181.	2.11
+	ROUTED TO	587595	1105.	4.73	410.	181.	181.	2.11
+	HYDROGRAPH AT	210C	245.	4.03	19.	6.	6.	0.08
+	2 COMBINED AT	C595L	1110.	4.73	423.	186.	186.	2.19
+	HYDROGRAPH AT	210D	448.	4.03	36.	12.	12.	0.14
+	ROUTED TO	588590	437.	4.05	36.	12.	12.	0.14
+	HYDROGRAPH AT	210E	93.	4.02	7.	2.	2.	0.03
+	2 COMBINED AT	C590L	524.	4.03	43.	14.	14.	0.17
+	HYDROGRAPH AT	210F	306.	4.02	25.	8.	8.	0.09
+	ROUTED TO	589590	299.	4.05	25.	8.	8.	0.09

+	HYDROGRAPH AT	210G	504.	4.03	42.	14.	14.	0.16
+	2 COMBINED AT	C590R	800.	4.03	67.	22.	22.	0.25
+	2 COMBINED AT	C590	1323.	4.03	110.	37.	37.	0.42
+	HYDROGRAPH AT	210H	234.	4.02	17.	6.	6.	0.07
+	ROUTED TO	592593	226.	4.07	17.	6.	6.	0.07
+	2 COMBINED AT	C593	1545.	4.03	127.	42.	42.	0.49
+	ROUTED TO	593594	1532.	4.07	127.	42.	42.	0.49
+	HYDROGRAPH AT	210I	149.	4.03	13.	4.	4.	0.05
+	2 COMBINED AT	C594	1636.	4.05	139.	46.	46.	0.54
+	ROUTED TO	594595	1595.	4.10	139.	46.	46.	0.54
+	HYDROGRAPH AT	210J	324.	4.03	25.	8.	8.	0.10
+	2 COMBINED AT	C595R	1764.	4.10	163.	54.	54.	0.64
+	2 COMBINED AT	C595	1603.	4.12	558.	236.	236.	2.83
+	ROUTED TO	595596	1595.	4.18	557.	236.	236.	2.83
+	HYDROGRAPH AT	210K	270.	4.02	19.	6.	6.	0.08
+	2 COMBINED AT	C596	1679.	4.17	572.	241.	241.	2.91
+	HYDROGRAPH AT	209A	951.	4.10	89.	30.	30.	0.37
+	ROUTED TO	579580	942.	4.12	89.	30.	30.	0.37
+	HYDROGRAPH AT	209C	170.	4.05	17.	6.	6.	0.06
+	2 COMBINED AT	C580R	1090.	4.10	106.	35.	35.	0.43
+	HYDROGRAPH AT	209B	266.	4.02	22.	7.	7.	0.08
+	2 COMBINED AT	C580	1285.	4.08	128.	43.	43.	0.51
+	ROUTED TO	580581	1267.	4.12	127.	43.	43.	0.51
+	HYDROGRAPH AT	209D	802.	4.02	64.	21.	21.	0.24
+	2 COMBINED AT	C581R	1747.	4.07	187.	63.	63.	0.76
+	HYDROGRAPH AT	209E	445.	4.03	40.	13.	13.	0.15
+	2 COMBINED AT	C581	2031.	4.05	224.	75.	75.	0.91
+	ROUTED TO	581582	1981.	4.10	224.	75.	75.	0.91
+	HYDROGRAPH AT	209F	439.	4.17	55.	18.	18.	0.23
+	2 COMBINED AT	C582R	2209.	4.12	274.	92.	92.	1.13

+	HYDROGRAPH AT	209G	625.	4.03	54.	18.	18.	0.20
+	2 COMBINED AT	C582	2498.	4.10	323.	108.	108.	1.34
+	ROUTED TO	582583	2472.	4.13	323.	108.	108.	1.34
+	HYDROGRAPH AT	209H	242.	4.03	19.	6.	6.	0.08
+	2 COMBINED AT	C583	2567.	4.12	340.	114.	114.	1.42
+	ROUTED TO	583584	2536.	4.20	340.	114.	114.	1.42
+	HYDROGRAPH AT	209I	604.	4.02	42.	14.	14.	0.18
+	2 COMBINED AT	C584I	2656.	4.18	377.	127.	127.	1.60
+	ROUTED TO	C584O	925.	4.65	357.	127.	127.	1.60
+	ROUTED TO	584597	903.	4.78	356.	127.	127.	1.60
+	HYDROGRAPH AT	210L	413.	4.03	31.	10.	10.	0.14
+	2 COMBINED AT	C597	900.	4.80	381.	136.	136.	1.74
+	ROUTED TO	597598	883.	4.88	380.	136.	136.	1.74
+	HYDROGRAPH AT	210M	462.	4.05	38.	13.	13.	0.16
+	2 COMBINED AT	C598	884.	4.88	411.	147.	147.	1.90
+	HYDROGRAPH AT	210N	162.	4.00	10.	3.	3.	0.05
+	4 COMBINED AT	C599	2474.	4.17	1162.	508.	508.	7.13
+	ROUTED TO	599608	2466.	4.18	1162.	508.	508.	7.13
+	HYDROGRAPH AT	211K	363.	4.00	26.	9.	9.	0.10
+	2 COMBINED AT	C608L	2560.	4.18	1179.	515.	515.	7.24
+	HYDROGRAPH AT	211G	18.	4.05	3.	1.	1.	0.01
+	ROUTED TO	604606	17.	4.23	3.	1.	1.	0.01
+	HYDROGRAPH AT	211I	121.	4.03	11.	4.	4.	0.04
+	2 COMBINED AT	C606R	131.	4.03	14.	5.	5.	0.05
+	HYDROGRAPH AT	211H	247.	4.02	17.	6.	6.	0.07
+	ROUTED TO	C605O	129.	4.12	17.	6.	6.	0.07
+	2 COMBINED AT	C606	256.	4.05	31.	10.	10.	0.12
+	ROUTED TO	606607	253.	4.08	31.	10.	10.	0.12
+	HYDROGRAPH AT	211J	51.	4.02	4.	1.	1.	0.01
+	2 COMBINED AT	C607	295.	4.05	35.	12.	12.	0.14

+	ROUTED TO	607608	290.	4.08	35.	12.	12.	0.14
+	2 COMBINED AT	C608	2728.	4.17	1205.	524.	524.	7.37
+	ROUTED TO	608613	2723.	4.18	1204.	524.	524.	7.37
+	HYDROGRAPH AT	211M	278.	4.02	23.	8.	8.	0.08
+	ROUTED TO	610611	272.	4.05	23.	8.	8.	0.08
+	HYDROGRAPH AT	211N	72.	4.00	6.	2.	2.	0.02
+	2 COMBINED AT	C611R	338.	4.03	29.	10.	10.	0.10
+	HYDROGRAPH AT	211O	143.	4.02	11.	4.	4.	0.04
+	ROUTED TO	C609O	69.	4.12	11.	4.	4.	0.04
+	ROUTED TO	609611	69.	4.15	11.	4.	4.	0.04
+	2 COMBINED AT	C611I	402.	4.03	40.	13.	13.	0.14
+	ROUTED TO	C611O	201.	4.20	39.	13.	13.	0.14
+	DIVERSION TO	D611R	169.	4.20	38.	13.	13.	0.14
+	HYDROGRAPH AT	D611L	32.	4.20	1.	0.	0.	0.14
+	ROUTED TO	611612	27.	4.27	1.	0.	0.	0.14
+	HYDROGRAPH AT	211P	119.	4.00	10.	3.	3.	0.03
+	2 COMBINED AT	C612	119.	4.00	10.	3.	3.	0.17
+	2 COMBINED AT	C613	2752.	4.18	1209.	526.	526.	7.55
+	ROUTED TO	613621	2751.	4.20	1209.	526.	526.	7.55
+	HYDROGRAPH AT	211L	317.	4.02	24.	8.	8.	0.10
+	2 COMBINED AT	C621L	2839.	4.18	1224.	532.	532.	7.64
+	HYDROGRAPH AT	211Q	74.	4.00	5.	2.	2.	0.02
+	ROUTED TO	616617	72.	4.03	5.	2.	2.	0.02
+	HYDROGRAPH AT	211R	283.	4.02	22.	7.	7.	0.08
+	2 COMBINED AT	C617L	355.	4.02	27.	9.	9.	0.10
+	HYDROGRAPH AT	211U	61.	4.05	8.	3.	3.	0.03
+	DIVERSION TO	D614R	43.	4.05	5.	2.	2.	0.03
+	HYDROGRAPH AT	D614L	18.	4.05	3.	1.	1.	0.03
+	2 COMBINED AT	C617	372.	4.02	30.	10.	10.	0.13
+	ROUTED TO	617618	359.	4.07	30.	10.	10.	0.13

	HYDROGRAPH AT							
+		211S	144.	4.05	12.	4.	4.	0.05
	2 COMBINED AT							
+		C618I	499.	4.07	42.	14.	14.	0.18
	ROUTED TO							
+		C618O	482.	4.08	36.	14.	14.	0.18
	HYDROGRAPH AT							
+		BB614R	43.	4.05	5.	2.	2.	0.03
	ROUTED TO							
+		614615	43.	4.10	5.	2.	2.	0.03
	HYDROGRAPH AT							
+		211V	16.	4.02	2.	1.	1.	0.00
	2 COMBINED AT							
+		C615	55.	4.07	7.	2.	2.	0.03
	DIVERSION TO							
+		D615R	19.	4.07	2.	1.	1.	0.03
	HYDROGRAPH AT							
+		D615L	36.	4.07	5.	2.	2.	0.03
	ROUTED TO							
+		615618	36.	4.08	5.	2.	2.	0.03
	2 COMBINED AT							
+		C618	518.	4.08	41.	16.	16.	0.19
	ROUTED TO							
+		618619	507.	4.13	41.	16.	16.	0.19
	HYDROGRAPH AT							
+		211T	231.	4.02	20.	7.	7.	0.07
	2 COMBINED AT							
+		C619L	637.	4.08	60.	22.	22.	0.26
	HYDROGRAPH AT							
+		BB615R	19.	4.07	2.	1.	1.	0.03
	ROUTED TO							
+		615619	19.	4.17	2.	1.	1.	0.03
	2 COMBINED AT							
+		C619I	655.	4.10	62.	23.	23.	0.25
	ROUTED TO							
+		C619O	596.	4.18	62.	23.	23.	0.25
	DIVERSION TO							
+		D619L	402.	4.18	12.	4.	4.	0.25
	HYDROGRAPH AT							
+		D619R	194.	4.18	51.	19.	19.	0.25
	ROUTED TO							
+		619620	194.	4.20	51.	19.	19.	0.25
	HYDROGRAPH AT							
+		BB619L	402.	4.18	12.	4.	4.	0.25
	ROUTED TO							
+		619620	353.	4.22	12.	4.	4.	0.25
	HYDROGRAPH AT							
+		211W	108.	4.00	9.	3.	3.	0.03
	3 COMBINED AT							
+		C620R	573.	4.22	72.	26.	26.	0.28
	HYDROGRAPH AT							
+		BB611R	169.	4.20	38.	13.	13.	0.14
	ROUTED TO							
+		611620	169.	4.22	38.	13.	13.	0.14
	2 COMBINED AT							
+		C620	741.	4.22	110.	39.	39.	0.42
	ROUTED TO							
+		620621	723.	4.23	110.	39.	39.	0.42
	2 COMBINED AT							
+		C621	3166.	4.18	1309.	566.	566.	7.93

+	ROUTED TO 621622	3159.	4.27	1308.	565.	565.	7.93
+	HYDROGRAPH AT 211X	629.	4.05	60.	20.	20.	0.21
+	2 COMBINED AT C622R	3384.	4.25	1347.	582.	582.	8.14
+	HYDROGRAPH AT 211A	444.	4.03	35.	12.	12.	0.14
+	ROUTED TO C600O	373.	4.10	35.	12.	12.	0.14
+	ROUTED TO 600601	366.	4.15	35.	12.	12.	0.14
+	HYDROGRAPH AT 211B	357.	4.02	26.	9.	9.	0.11
+	2 COMBINED AT C601	663.	4.03	60.	20.	20.	0.25
+	ROUTED TO 601602	651.	4.08	60.	20.	20.	0.25
+	HYDROGRAPH AT 211C	134.	4.03	12.	4.	4.	0.04
+	2 COMBINED AT C602L	769.	4.07	72.	24.	24.	0.30
+	HYDROGRAPH AT 211D	184.	4.05	17.	6.	6.	0.07
+	2 COMBINED AT C602	950.	4.07	89.	30.	30.	0.37
+	ROUTED TO 602603	923.	4.12	89.	30.	30.	0.37
+	HYDROGRAPH AT 211E	509.	4.03	41.	14.	14.	0.16
+	2 COMBINED AT C603	1313.	4.07	129.	43.	43.	0.52
+	ROUTED TO 603622	1284.	4.13	129.	43.	43.	0.52
+	HYDROGRAPH AT 211F	332.	4.05	33.	11.	11.	0.11
+	2 COMBINED AT C622L	1474.	4.12	160.	54.	54.	0.63
+	2 COMBINED AT C622	4122.	4.22	1461.	625.	625.	8.78
+	ROUTED TO 622549	4106.	4.30	1460.	624.	624.	8.78
+	HYDROGRAPH AT 211Y	271.	4.05	26.	9.	9.	0.09
+	2 COMBINED AT C549R	4195.	4.28	1477.	632.	632.	8.87
+	2 COMBINED AT C549	5109.	4.28	1859.	829.	829.	13.06
+	ROUTED TO 549626	5085.	4.37	1857.	829.	829.	13.06
+	HYDROGRAPH AT 211Z	249.	4.03	20.	7.	7.	0.08
+	2 COMBINED AT C626C	5134.	4.37	1867.	834.	834.	13.14
+	HYDROGRAPH AT 211AA	96.	4.05	9.	3.	3.	0.03
+	ROUTED TO 625626	92.	4.08	9.	3.	3.	0.03
+	HYDROGRAPH AT 211AB	149.	4.00	12.	4.	4.	0.04

	ROUTED TO							
+		623624	148.	4.02	12.	4.	4.	0.04
	HYDROGRAPH AT							
+		211AC	90.	4.02	8.	3.	3.	0.03
	2 COMBINED AT							
+		C624	238.	4.02	20.	7.	7.	0.07
	ROUTED TO							
+		624626	231.	4.05	20.	7.	7.	0.07
	HYDROGRAPH AT							
+		211AD	139.	4.02	12.	4.	4.	0.04
	2 COMBINED AT							
+		C626R	367.	4.03	32.	11.	11.	0.11
	3 COMBINED AT							
+		C626	5252.	4.35	1891.	845.	845.	13.28
	ROUTED TO							
+		626627	5249.	4.37	1891.	845.	845.	13.28
	HYDROGRAPH AT							
+		211AE	114.	4.02	9.	3.	3.	0.03
	2 COMBINED AT							
+		C627	5270.	4.37	1895.	848.	848.	13.32
	HYDROGRAPH AT							
+		211AF	194.	4.00	15.	5.	5.	0.05

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

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*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              MAY  1991            *
*           VERSION 4.0.1E          *
*                                   *
*  RUN DATE  10/17/96  TIME  16:42:13  *
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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  X        X              X
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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

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	204A	187.	12.02	22.	6.	5.	0.11		
+	ROUTED TO	522523	181.	12.17	22.	6.	5.	0.11		
+	HYDROGRAPH AT	204B	209.	12.03	25.	7.	6.	0.13		
+	2 COMBINED AT	C523I	370.	12.07	47.	14.	11.	0.23		
+	ROUTED TO	C523O	280.	12.25	47.	14.	11.	0.23		
+	DIVERSION TO	D523R	18.	12.25	1.	0.	0.	0.23		
+	HYDROGRAPH AT	D523L	262.	12.25	46.	13.	11.	0.23		
+	ROUTED TO	523524	259.	12.33	46.	13.	11.	0.23		
+	HYDROGRAPH AT	204C	149.	12.00	20.	7.	5.	0.08		
+	2 COMBINED AT	C524	329.	12.07	66.	20.	16.	0.31		
+	ROUTED TO	524525	325.	12.08	66.	20.	16.	0.31		
+	HYDROGRAPH AT	204D	82.	12.02	11.	3.	3.	0.04		
+	2 COMBINED AT	C525	399.	12.07	77.	24.	19.	0.35		
+	ROUTED TO	525526	395.	12.10	77.	24.	19.	0.35		
+	HYDROGRAPH AT	204E	126.	12.02	16.	5.	4.	0.07		
+	2 COMBINED AT	C526	512.	12.07	93.	29.	23.	0.43		

	ROUTED TO							
+		526527	505.	12.12	93.	28.	23.	0.43
	HYDROGRAPH AT							
+		204F	147.	12.02	19.	6.	5.	0.08
	2 COMBINED AT							
+		C527	627.	12.07	112.	34.	28.	0.50
	HYDROGRAPH AT							
+		205A	130.	12.23	22.	7.	6.	0.12
	HYDROGRAPH AT							
+		205B	237.	12.30	40.	12.	10.	0.21
	2 COMBINED AT							
+		C528	361.	12.27	62.	19.	15.	0.33
	ROUTED TO							
+		528530	360.	12.32	62.	19.	15.	0.33
	HYDROGRAPH AT							
+		205C	65.	12.22	11.	3.	3.	0.06
	2 COMBINED AT							
+		C530R	417.	12.30	73.	23.	18.	0.39
	HYDROGRAPH AT							
+		205D	405.	12.22	60.	19.	15.	0.32
	HYDROGRAPH AT							
+		205E	203.	12.32	41.	13.	10.	0.22
	2 COMBINED AT							
+		C529	596.	12.25	100.	31.	25.	0.54
	2 COMBINED AT							
+		C530	1005.	12.27	173.	54.	43.	0.93
	ROUTED TO							
+		530531	996.	12.32	173.	54.	43.	0.93
	HYDROGRAPH AT							
+		205F	197.	12.22	30.	9.	8.	0.16
	2 COMBINED AT							
+		C531	1172.	12.30	202.	63.	50.	1.09
	ROUTED TO							
+		531532	1162.	12.37	202.	63.	50.	1.09
	HYDROGRAPH AT							
+		205G	214.	12.23	33.	10.	8.	0.19
	2 COMBINED AT							
+		C532L	1344.	12.33	235.	73.	59.	1.27
	HYDROGRAPH AT							
+		205H	237.	12.33	47.	14.	12.	0.26
	2 COMBINED AT							
+		C532	1578.	12.33	282.	87.	70.	1.53
	ROUTED TO							
+		532533	1575.	12.37	282.	87.	70.	1.53
	HYDROGRAPH AT							
+		205I	367.	12.28	56.	16.	13.	0.35
	2 COMBINED AT							
+		C533	1920.	12.33	337.	103.	82.	1.89
	ROUTED TO							
+		533534	1889.	12.50	337.	103.	82.	1.89
	HYDROGRAPH AT							
+		205J	361.	12.28	50.	13.	10.	0.37
	2 COMBINED AT							
+		C534R	2142.	12.48	386.	115.	93.	2.25
	HYDROGRAPH AT							
+		205K	183.	12.37	35.	9.	7.	0.25
	2 COMBINED AT							
+		C534	2310.	12.47	420.	124.	100.	2.50
	ROUTED TO							
+		534535	2300.	12.53	420.	124.	100.	2.50

+	HYDROGRAPH AT	205L	147.	12.17	15.	4.	3.	0.12
+	2 COMBINED AT	C535	2346.	12.52	435.	128.	103.	2.62
+	ROUTED TO	535536	2320.	12.65	435.	128.	103.	2.62
+	HYDROGRAPH AT	205M	210.	12.05	26.	7.	6.	0.14
+	2 COMBINED AT	C536R	2354.	12.65	460.	135.	108.	2.76
+	HYDROGRAPH AT	205N	141.	12.22	22.	6.	4.	0.16
+	2 COMBINED AT	C536I	2430.	12.63	482.	140.	113.	2.91
+	ROUTED TO	C536O	321.	14.07	307.	140.	113.	2.91
+	ROUTED TO	536537	321.	14.12	307.	140.	113.	2.91
+	HYDROGRAPH AT	206A	224.	12.02	26.	8.	6.	0.13
+	2 COMBINED AT	C537	358.	12.07	313.	148.	119.	3.04
+	ROUTED TO	537538	351.	12.12	313.	148.	119.	3.04
+	HYDROGRAPH AT	206B	169.	12.02	21.	6.	5.	0.09
+	2 COMBINED AT	C538I	499.	12.07	327.	154.	124.	3.14
+	ROUTED TO	C538O	456.	12.15	324.	154.	124.	3.14
+	ROUTED TO	538540	448.	12.25	324.	154.	124.	3.14
+	HYDROGRAPH AT	206C	35.	12.05	4.	1.	1.	0.02
+	2 COMBINED AT	C540R	468.	12.25	326.	155.	125.	3.16
+	HYDROGRAPH AT	206D	114.	12.02	14.	4.	4.	0.06
+	ROUTED TO	539540	111.	12.08	14.	4.	4.	0.06
+	HYDROGRAPH AT	206E	38.	12.02	4.	1.	1.	0.02
+	2 COMBINED AT	C540L	147.	12.03	18.	6.	5.	0.09
+	2 COMBINED AT	C540	561.	12.20	339.	161.	130.	3.24
+	ROUTED TO	540541	548.	12.40	339.	161.	130.	3.24
+	HYDROGRAPH AT	206F	247.	12.03	29.	9.	7.	0.16
+	2 COMBINED AT	C541	633.	12.22	358.	169.	136.	3.40
+	ROUTED TO	541548	632.	12.25	358.	169.	136.	3.40
+	HYDROGRAPH AT	206G	125.	12.07	18.	5.	4.	0.09
+	HYDROGRAPH AT	BB523R	18.	12.25	1.	0.	0.	0.23
+	ROUTED TO	523548	15.	12.50	1.	0.	0.	0.23

+	3 COMBINED AT	C548L	726.	12.12	374.	174.	141.	3.72
+	HYDROGRAPH AT	206H	106.	12.02	13.	4.	3.	0.06
+	ROUTED TO	542543	105.	12.05	13.	4.	3.	0.06
+	HYDROGRAPH AT	206I	40.	12.00	5.	1.	1.	0.02
+	2 COMBINED AT	C543	143.	12.02	17.	5.	4.	0.08
+	DIVERSION TO	D543R	143.	12.02	17.	5.	4.	0.08
+	HYDROGRAPH AT	D543L	0.	0.02	0.	0.	0.	0.08
+	ROUTED TO	543544	0.	0.02	0.	0.	0.	0.08
+	HYDROGRAPH AT	206K	96.	12.02	11.	3.	3.	0.06
+	2 COMBINED AT	C544	96.	12.02	11.	3.	3.	0.14
+	ROUTED TO	544545	95.	12.05	11.	3.	3.	0.14
+	DIVERSION TO	D545R	48.	12.05	6.	2.	1.	0.14
+	HYDROGRAPH AT	D545L	48.	12.05	6.	2.	1.	0.14
+	ROUTED TO	545546	47.	12.07	6.	2.	1.	0.14
+	HYDROGRAPH AT	206L	106.	12.02	12.	3.	3.	0.06
+	2 COMBINED AT	C546	152.	12.02	18.	5.	4.	0.20
+	ROUTED TO	546547	152.	12.03	18.	5.	4.	0.20
+	HYDROGRAPH AT	BB543R	143.	12.02	17.	5.	4.	0.08
+	ROUTED TO	543547	140.	12.08	17.	5.	4.	0.08
+	HYDROGRAPH AT	BB545R	48.	12.05	6.	2.	1.	0.14
+	ROUTED TO	545547	47.	12.10	6.	2.	1.	0.14
+	HYDROGRAPH AT	206J	111.	12.02	14.	4.	3.	0.06
+	4 COMBINED AT	C547	443.	12.03	54.	16.	13.	0.26
+	ROUTED TO	547548	436.	12.08	54.	16.	13.	0.26
+	HYDROGRAPH AT	206M	109.	12.02	14.	4.	3.	0.06
+	2 COMBINED AT	C548R	535.	12.05	68.	21.	16.	0.32
+	2 COMBINED AT	C548	1241.	12.08	436.	194.	157.	4.04
+	ROUTED TO	548549	1216.	12.23	435.	194.	157.	4.04
+	HYDROGRAPH AT	206N	260.	12.03	35.	11.	9.	0.15
+	2 COMBINED AT	C549L	1370.	12.20	462.	205.	166.	4.19

+	HYDROGRAPH AT	207A	254.	12.30	46.	14.	11.	0.26
+	HYDROGRAPH AT	207B	202.	12.30	38.	12.	9.	0.21
+	2 COMBINED AT	C550	455.	12.30	84.	26.	21.	0.46
+	ROUTED TO	550552	450.	12.37	84.	26.	21.	0.46
+	HYDROGRAPH AT	207C	197.	12.22	27.	8.	6.	0.17
+	2 COMBINED AT	C552L	617.	12.32	111.	33.	27.	0.64
+	HYDROGRAPH AT	207D	255.	12.12	40.	13.	10.	0.20
+	ROUTED TO	551552	252.	12.20	40.	13.	10.	0.20
+	HYDROGRAPH AT	207E	178.	12.12	33.	11.	8.	0.16
+	2 COMBINED AT	C552R	420.	12.17	73.	23.	19.	0.35
+	2 COMBINED AT	C552	1001.	12.27	183.	56.	45.	0.99
+	ROUTED TO	552553	998.	12.30	183.	56.	45.	0.99
+	HYDROGRAPH AT	207F	153.	12.13	25.	8.	6.	0.13
+	2 COMBINED AT	C553	1127.	12.28	208.	64.	51.	1.12
+	ROUTED TO	553556	1121.	12.32	208.	64.	51.	1.12
+	HYDROGRAPH AT	207G	190.	12.28	36.	10.	8.	0.24
+	2 COMBINED AT	C556L	1309.	12.32	244.	73.	59.	1.35
+	HYDROGRAPH AT	207H	181.	12.07	27.	9.	7.	0.12
+	ROUTED TO	554555	178.	12.12	27.	9.	7.	0.12
+	HYDROGRAPH AT	207I	120.	12.03	16.	5.	4.	0.07
+	2 COMBINED AT	C555	289.	12.07	43.	14.	11.	0.20
+	ROUTED TO	555556	282.	12.18	43.	14.	11.	0.20
+	HYDROGRAPH AT	207J	154.	12.03	21.	7.	5.	0.09
+	2 COMBINED AT	C556R	404.	12.08	64.	20.	16.	0.29
+	2 COMBINED AT	C556	1626.	12.27	307.	94.	75.	1.64
+	ROUTED TO	556557	1619.	12.32	307.	94.	75.	1.64
+	HYDROGRAPH AT	207K	209.	12.05	28.	9.	7.	0.13
+	2 COMBINED AT	C557R	1720.	12.30	334.	102.	82.	1.77
+	HYDROGRAPH AT	207L	136.	12.03	17.	5.	4.	0.08
+	2 COMBINED AT	C557	1780.	12.28	351.	107.	86.	1.85

+	ROUTED TO	557558	1770.	12.33	351.	107.	86.	1.85
+	HYDROGRAPH AT	207M	205.	12.02	23.	7.	5.	0.12
+	2 COMBINED AT	C558	1821.	12.33	373.	113.	91.	1.97
+	ROUTED TO	558560	1813.	12.37	373.	113.	91.	1.97
+	HYDROGRAPH AT	207O	227.	12.02	25.	7.	6.	0.13
+	2 COMBINED AT	C560R	1857.	12.37	397.	120.	97.	2.10
+	HYDROGRAPH AT	207N	87.	12.02	10.	3.	3.	0.05
+	ROUTED TO	559560	85.	12.08	10.	3.	3.	0.05
+	2 COMBINED AT	C560I	1892.	12.35	407.	124.	99.	2.15
+	ROUTED TO	C560O	283.	13.78	263.	123.	99.	2.15
+	ROUTED TO	560585	283.	13.88	263.	123.	99.	2.15
+	HYDROGRAPH AT	210A	213.	12.02	22.	6.	5.	0.12
+	2 COMBINED AT	C585	339.	12.03	270.	129.	104.	2.27
+	HYDROGRAPH AT	208A	253.	12.00	31.	10.	8.	0.14
+	ROUTED TO	561563	251.	12.03	31.	10.	8.	0.14
+	HYDROGRAPH AT	208B	46.	12.02	6.	2.	2.	0.03
+	2 COMBINED AT	C563R	297.	12.02	37.	12.	10.	0.17
+	HYDROGRAPH AT	208C	85.	12.10	13.	4.	3.	0.07
+	ROUTED TO	562563	83.	12.18	13.	4.	3.	0.07
+	HYDROGRAPH AT	208D	126.	12.02	17.	5.	4.	0.08
+	2 COMBINED AT	C563L	197.	12.05	30.	10.	8.	0.14
+	2 COMBINED AT	C563	491.	12.03	67.	22.	17.	0.31
+	ROUTED TO	563564	483.	12.08	67.	22.	17.	0.31
+	HYDROGRAPH AT	208E	107.	12.02	14.	5.	4.	0.06
+	2 COMBINED AT	C564R	579.	12.07	81.	26.	21.	0.37
+	HYDROGRAPH AT	208F	122.	12.02	16.	5.	4.	0.07
+	2 COMBINED AT	C564	696.	12.05	97.	31.	25.	0.44
+	ROUTED TO	564565	681.	12.13	96.	31.	25.	0.44
+	HYDROGRAPH AT	208G	224.	12.03	30.	10.	8.	0.13
+	2 COMBINED AT	C565	870.	12.08	126.	41.	33.	0.57

+	ROUTED TO 565568	862.	12.13	126.	41.	33.	0.57
+	HYDROGRAPH AT 208H	59.	12.07	9.	3.	2.	0.04
+	2 COMBINED AT C568L	916.	12.13	135.	43.	35.	0.61
+	HYDROGRAPH AT 208I	204.	12.02	26.	8.	7.	0.12
+	HYDROGRAPH AT 208J	128.	12.03	18.	6.	5.	0.08
+	2 COMBINED AT C566	330.	12.02	44.	14.	11.	0.20
+	ROUTED TO 566567	326.	12.07	44.	14.	11.	0.20
+	HYDROGRAPH AT 208K	88.	12.00	11.	4.	3.	0.05
+	2 COMBINED AT C567L	408.	12.03	56.	18.	14.	0.25
+	HYDROGRAPH AT 208L	101.	12.02	13.	4.	3.	0.06
+	2 COMBINED AT C567	508.	12.03	69.	22.	18.	0.31
+	ROUTED TO 567568	497.	12.12	69.	22.	18.	0.31
+	HYDROGRAPH AT 208M	276.	12.03	39.	13.	10.	0.16
+	2 COMBINED AT C568R	752.	12.07	108.	35.	28.	0.46
+	2 COMBINED AT C568	1638.	12.10	243.	78.	63.	1.07
+	ROUTED TO 568573	1622.	12.15	242.	78.	63.	1.07
+	HYDROGRAPH AT 208N	78.	12.05	12.	4.	3.	0.05
+	2 COMBINED AT C573L	1687.	12.15	255.	82.	66.	1.12
+	HYDROGRAPH AT 208O	392.	12.03	52.	17.	13.	0.23
+	ROUTED TO 569570	389.	12.05	52.	17.	13.	0.23
+	HYDROGRAPH AT 208P	111.	12.00	15.	5.	4.	0.06
+	2 COMBINED AT C570R	496.	12.03	66.	21.	17.	0.29
+	HYDROGRAPH AT 208Q	158.	12.03	22.	7.	6.	0.09
+	2 COMBINED AT C570	652.	12.03	89.	29.	23.	0.38
+	HYDROGRAPH AT 208R	19.	12.00	3.	1.	1.	0.01
+	ROUTED TO 571572	19.	12.02	3.	1.	1.	0.01
+	2 COMBINED AT C572	671.	12.03	91.	29.	23.	0.39
+	ROUTED TO 572573	667.	12.05	91.	29.	23.	0.39
+	HYDROGRAPH AT 208S	129.	12.02	18.	6.	5.	0.07
+	2 COMBINED AT C573R	792.	12.03	109.	35.	28.	0.46

+	2 COMBINED AT	C573	2380.	12.10	363.	117.	94.	1.58
+	HYDROGRAPH AT	208T	239.	12.02	30.	9.	8.	0.13
+	HYDROGRAPH AT	208U	252.	12.00	30.	10.	8.	0.13
+	2 COMBINED AT	C574	489.	12.00	60.	19.	15.	0.27
+	ROUTED TO	574575	488.	12.02	60.	19.	15.	0.27
+	HYDROGRAPH AT	208V	53.	12.00	6.	2.	2.	0.03
+	2 COMBINED AT	C575	541.	12.02	67.	21.	17.	0.29
+	ROUTED TO	575576	537.	12.03	67.	21.	17.	0.29
+	HYDROGRAPH AT	208W	93.	12.00	12.	4.	3.	0.05
+	2 COMBINED AT	C576	628.	12.02	78.	24.	20.	0.34
+	ROUTED TO	576577	628.	12.03	78.	24.	20.	0.34
+	2 COMBINED AT	C577	2969.	12.08	440.	141.	114.	1.92
+	ROUTED TO	577578	2951.	12.10	440.	141.	114.	1.92
+	HYDROGRAPH AT	208X	135.	12.02	16.	5.	4.	0.08
+	2 COMBINED AT	C578I	3058.	12.10	456.	146.	118.	2.00
+	ROUTED TO	C578O	460.	12.93	326.	146.	118.	2.00
+	ROUTED TO	578587	459.	12.98	326.	146.	118.	2.00
+	HYDROGRAPH AT	210B	178.	12.03	23.	7.	6.	0.11
+	ROUTED TO	C586O	168.	12.08	23.	7.	6.	0.11
+	ROUTED TO	586587	167.	12.13	23.	7.	6.	0.11
+	2 COMBINED AT	C587	477.	12.97	345.	153.	123.	2.11
+	ROUTED TO	587595	476.	13.00	345.	153.	123.	2.11
+	HYDROGRAPH AT	210C	135.	12.02	15.	4.	3.	0.08
+	2 COMBINED AT	C595L	553.	12.08	356.	157.	127.	2.19
+	HYDROGRAPH AT	210D	250.	12.02	30.	9.	7.	0.14
+	ROUTED TO	588590	248.	12.05	30.	9.	7.	0.14
+	HYDROGRAPH AT	210E	52.	12.02	6.	2.	1.	0.03
+	2 COMBINED AT	C590L	299.	12.03	36.	11.	8.	0.17
+	HYDROGRAPH AT	210F	165.	12.02	21.	7.	5.	0.09
+	ROUTED TO	589590	164.	12.05	21.	7.	5.	0.09

+	HYDROGRAPH AT	210G	282.	12.02	35.	11.	9.	0.16
+	2 COMBINED AT	C590R	444.	12.03	56.	18.	14.	0.25
+	2 COMBINED AT	C590	741.	12.03	91.	28.	22.	0.42
+	HYDROGRAPH AT	210H	127.	12.02	14.	4.	3.	0.07
+	ROUTED TO	592593	126.	12.05	14.	4.	3.	0.07
+	2 COMBINED AT	C593	866.	12.03	105.	32.	26.	0.49
+	ROUTED TO	593594	859.	12.05	105.	32.	26.	0.49
+	HYDROGRAPH AT	210I	86.	12.03	11.	3.	2.	0.05
+	2 COMBINED AT	C594	944.	12.05	116.	35.	28.	0.54
+	ROUTED TO	594595	929.	12.13	116.	35.	28.	0.54
+	HYDROGRAPH AT	210J	183.	12.02	21.	6.	5.	0.10
+	2 COMBINED AT	C595R	1082.	12.08	136.	40.	32.	0.64
+	2 COMBINED AT	C595	1629.	12.08	485.	197.	159.	2.83
+	ROUTED TO	595596	1619.	12.15	484.	197.	159.	2.83
+	HYDROGRAPH AT	210K	145.	12.00	16.	4.	3.	0.08
+	2 COMBINED AT	C596	1696.	12.13	498.	201.	162.	2.91
+	HYDROGRAPH AT	209A	549.	12.08	75.	24.	19.	0.37
+	ROUTED TO	579580	546.	12.10	75.	24.	19.	0.37
+	HYDROGRAPH AT	209C	98.	12.05	14.	5.	4.	0.06
+	2 COMBINED AT	C580R	639.	12.08	89.	28.	23.	0.43
+	HYDROGRAPH AT	209B	146.	12.02	19.	6.	5.	0.08
+	2 COMBINED AT	C580	771.	12.05	107.	34.	27.	0.51
+	ROUTED TO	580581	765.	12.10	107.	34.	27.	0.51
+	HYDROGRAPH AT	209D	432.	12.02	54.	17.	14.	0.24
+	2 COMBINED AT	C581R	1164.	12.05	161.	51.	41.	0.76
+	HYDROGRAPH AT	209E	250.	12.03	34.	11.	9.	0.15
+	2 COMBINED AT	C581	1409.	12.05	194.	62.	50.	0.91
+	ROUTED TO	581582	1389.	12.10	194.	62.	50.	0.91
+	HYDROGRAPH AT	209F	273.	12.15	46.	14.	12.	0.23
+	2 COMBINED AT	C582R	1654.	12.10	239.	76.	61.	1.13

+	HYDROGRAPH AT	209G	348.	12.02	46.	15.	12.	0.20
+	2 COMBINED AT	C582	1968.	12.08	285.	91.	73.	1.34
+	ROUTED TO	582583	1950.	12.12	285.	91.	73.	1.34
+	HYDROGRAPH AT	209H	136.	12.03	16.	5.	4.	0.08
+	2 COMBINED AT	C583	2065.	12.12	300.	95.	77.	1.42
+	ROUTED TO	583584	2039.	12.18	300.	95.	77.	1.42
+	HYDROGRAPH AT	209I	326.	12.02	34.	10.	8.	0.18
+	2 COMBINED AT	C584I	2209.	12.15	334.	105.	84.	1.60
+	ROUTED TO	C584O	393.	12.90	319.	105.	84.	1.60
+	ROUTED TO	584597	392.	13.07	319.	105.	84.	1.60
+	HYDROGRAPH AT	210L	230.	12.02	24.	7.	5.	0.14
+	2 COMBINED AT	C597	483.	12.07	340.	111.	90.	1.74
+	ROUTED TO	597598	473.	12.17	340.	111.	90.	1.74
+	HYDROGRAPH AT	210M	264.	12.03	30.	8.	7.	0.16
+	2 COMBINED AT	C598	691.	12.10	367.	120.	96.	1.90
+	HYDROGRAPH AT	210N	81.	12.00	8.	2.	2.	0.05
+	4 COMBINED AT	C599	2655.	12.10	1122.	443.	356.	7.13
+	ROUTED TO	599608	2649.	12.13	1122.	443.	356.	7.13
+	HYDROGRAPH AT	211K	191.	12.00	21.	6.	5.	0.10
+	2 COMBINED AT	C608L	2752.	12.10	1139.	448.	361.	7.24
+	HYDROGRAPH AT	211G	11.	12.05	2.	1.	1.	0.01
+	ROUTED TO	604606	11.	12.23	2.	1.	1.	0.01
+	HYDROGRAPH AT	211I	70.	12.03	9.	3.	2.	0.04
+	2 COMBINED AT	C606R	78.	12.03	12.	4.	3.	0.05
+	HYDROGRAPH AT	211H	133.	12.00	14.	4.	3.	0.07
+	ROUTED TO	C605O	107.	12.08	14.	4.	3.	0.07
+	2 COMBINED AT	C606	184.	12.05	26.	8.	6.	0.12
+	ROUTED TO	606607	182.	12.08	26.	8.	6.	0.12
+	HYDROGRAPH AT	211J	28.	12.00	3.	1.	1.	0.01
+	2 COMBINED AT	C607	207.	12.05	29.	9.	7.	0.14

	ROUTED TO						
+	607608	206.	12.08	29.	9.	7.	0.14
	2 COMBINED AT						
+	C608	2950.	12.10	1165.	456.	367.	7.37
	ROUTED TO						
+	608613	2938.	12.12	1165.	456.	367.	7.37
	HYDROGRAPH AT						
+	211M	152.	12.00	19.	6.	5.	0.08
	ROUTED TO						
+	610611	152.	12.03	19.	6.	5.	0.08
	HYDROGRAPH AT						
+	211N	39.	12.00	5.	2.	1.	0.02
	2 COMBINED AT						
+	C611R	190.	12.02	24.	8.	6.	0.10
	HYDROGRAPH AT						
+	211O	78.	12.00	10.	3.	2.	0.04
	ROUTED TO						
+	C609O	56.	12.08	9.	3.	2.	0.04
	ROUTED TO						
+	609611	56.	12.12	9.	3.	2.	0.04
	2 COMBINED AT						
+	C611I	242.	12.02	34.	11.	9.	0.14
	ROUTED TO						
+	C611O	143.	12.20	34.	11.	8.	0.14
	DIVERSION TO						
+	D611R	143.	12.20	34.	11.	8.	0.14
	HYDROGRAPH AT						
+	D611L	0.	0.02	0.	0.	0.	0.14
	ROUTED TO						
+	611612	0.	0.02	0.	0.	0.	0.14
	HYDROGRAPH AT						
+	211P	65.	12.00	8.	3.	2.	0.03
	2 COMBINED AT						
+	C612	64.	12.00	8.	3.	2.	0.17
	2 COMBINED AT						
+	C613	2971.	12.12	1170.	458.	369.	7.55
	ROUTED TO						
+	613621	2968.	12.13	1170.	458.	369.	7.55
	HYDROGRAPH AT						
+	211L	169.	12.02	20.	6.	5.	0.10
	2 COMBINED AT						
+	C621L	3075.	12.12	1186.	464.	374.	7.64
	HYDROGRAPH AT						
+	211Q	39.	12.00	4.	1.	1.	0.02
	ROUTED TO						
+	616617	39.	12.02	4.	1.	1.	0.02
	HYDROGRAPH AT						
+	211R	155.	12.02	18.	6.	5.	0.08
	2 COMBINED AT						
+	C617L	193.	12.02	23.	7.	6.	0.10
	HYDROGRAPH AT						
+	211U	37.	12.07	7.	2.	2.	0.03
	DIVERSION TO						
+	D614R	26.	12.07	5.	1.	1.	0.03
	HYDROGRAPH AT						
+	D614L	11.	12.07	2.	1.	1.	0.03
	2 COMBINED AT						
+	C617	204.	12.02	25.	8.	6.	0.13
	ROUTED TO						
+	617618	200.	12.07	25.	8.	6.	0.13

	HYDROGRAPH AT						
+	211S	83.	12.03	10.	3.	2.	0.05
	2 COMBINED AT						
+	C618I	282.	12.05	35.	11.	9.	0.18
	ROUTED TO						
+	C618O	280.	12.07	30.	10.	8.	0.18
	HYDROGRAPH AT						
+	BB614R	26.	12.07	5.	1.	1.	0.03
	ROUTED TO						
+	614615	26.	12.10	5.	1.	1.	0.03
	HYDROGRAPH AT						
+	211V	9.	12.02	2.	1.	0.	0.00
	2 COMBINED AT						
+	C615	34.	12.07	6.	2.	2.	0.03
	DIVERSION TO						
+	D615R	12.	12.07	2.	0.	0.	0.03
	HYDROGRAPH AT						
+	D615L	22.	12.07	5.	2.	1.	0.03
	ROUTED TO						
+	615618	22.	12.07	5.	2.	1.	0.03
	2 COMBINED AT						
+	C618	302.	12.07	34.	11.	10.	0.19
	ROUTED TO						
+	618619	299.	12.13	34.	11.	10.	0.19
	HYDROGRAPH AT						
+	211T	127.	12.00	17.	6.	5.	0.07
	2 COMBINED AT						
+	C619L	399.	12.07	51.	17.	14.	0.26
	HYDROGRAPH AT						
+	BB615R	12.	12.07	2.	0.	0.	0.03
	ROUTED TO						
+	615619	11.	12.17	2.	0.	0.	0.03
	2 COMBINED AT						
+	C619I	408.	12.07	52.	17.	14.	0.25
	ROUTED TO						
+	C619O	185.	12.40	52.	17.	14.	0.25
	DIVERSION TO						
+	D619L	0.	0.02	0.	0.	0.	0.25
	HYDROGRAPH AT						
+	D619R	185.	12.40	52.	17.	14.	0.25
	ROUTED TO						
+	619620	185.	12.42	52.	17.	14.	0.25
	HYDROGRAPH AT						
+	BB619L	0.	0.02	0.	0.	0.	0.25
	ROUTED TO						
+	619620	0.	0.02	0.	0.	0.	0.25
	HYDROGRAPH AT						
+	211W	59.	12.00	8.	3.	2.	0.03
	3 COMBINED AT						
+	C620R	223.	12.03	60.	20.	17.	0.28
	HYDROGRAPH AT						
+	BB611R	143.	12.20	34.	11.	8.	0.14
	ROUTED TO						
+	611620	143.	12.22	34.	11.	8.	0.14
	2 COMBINED AT						
+	C620	355.	12.05	94.	30.	25.	0.42
	ROUTED TO						
+	620621	354.	12.08	94.	30.	25.	0.42
	2 COMBINED AT						
+	C621	3417.	12.12	1271.	492.	397.	7.93

+	ROUTED TO 621622	3391.	12.20	1269.	492.	397.	7.93
+	HYDROGRAPH AT 211X	362.	12.05	52.	17.	14.	0.21
+	2 COMBINED AT C622R	3648.	12.17	1310.	508.	409.	8.14
+	HYDROGRAPH AT 211A	249.	12.02	28.	8.	6.	0.14
+	ROUTED TO C600O	241.	12.07	28.	8.	6.	0.14
+	ROUTED TO 600601	238.	12.12	28.	8.	6.	0.14
+	HYDROGRAPH AT 211B	195.	12.02	21.	6.	5.	0.11
+	2 COMBINED AT C601	419.	12.03	49.	14.	11.	0.25
+	ROUTED TO 601602	415.	12.08	49.	14.	11.	0.25
+	HYDROGRAPH AT 211C	77.	12.02	10.	3.	2.	0.04
+	2 COMBINED AT C602L	487.	12.07	59.	17.	14.	0.30
+	HYDROGRAPH AT 211D	103.	12.05	14.	4.	4.	0.07
+	2 COMBINED AT C602	589.	12.07	73.	21.	17.	0.37
+	ROUTED TO 602603	581.	12.12	73.	21.	17.	0.37
+	HYDROGRAPH AT 211E	281.	12.02	34.	11.	9.	0.16
+	2 COMBINED AT C603	833.	12.07	107.	32.	26.	0.52
+	ROUTED TO 603622	816.	12.13	107.	32.	26.	0.52
+	HYDROGRAPH AT 211F	190.	12.03	28.	9.	7.	0.11
+	2 COMBINED AT C622L	979.	12.12	134.	41.	33.	0.63
+	2 COMBINED AT C622	4552.	12.15	1428.	545.	440.	8.78
+	ROUTED TO 622549	4513.	12.23	1427.	545.	439.	8.78
+	HYDROGRAPH AT 211Y	158.	12.03	22.	7.	6.	0.09
+	2 COMBINED AT C549R	4597.	12.23	1442.	551.	444.	8.87
+	2 COMBINED AT C549	5802.	12.22	1866.	733.	592.	13.06
+	ROUTED TO 549626	5750.	12.30	1864.	733.	592.	13.06
+	HYDROGRAPH AT 211Z	137.	12.02	16.	5.	4.	0.08
+	2 COMBINED AT C626C	5790.	12.30	1873.	738.	596.	13.14
+	HYDROGRAPH AT 211AA	57.	12.03	8.	2.	2.	0.03
+	ROUTED TO 625626	56.	12.08	8.	2.	2.	0.03
+	HYDROGRAPH AT 211AB	79.	12.00	10.	3.	3.	0.04

	ROUTED TO							
+		623624	79.	12.00	10.	3.	3.	0.04
	HYDROGRAPH AT							
+		211AC	51.	12.02	7.	2.	2.	0.03
	2 COMBINED AT							
+		C624	130.	12.00	17.	5.	4.	0.07
	ROUTED TO							
+		624626	129.	12.03	17.	5.	4.	0.07
	HYDROGRAPH AT							
+		211AD	78.	12.02	11.	3.	3.	0.04
	2 COMBINED AT							
+		C626R	207.	12.02	28.	9.	7.	0.11
	3 COMBINED AT							
+		C626	5886.	12.30	1896.	748.	604.	13.28
	ROUTED TO							
+		626627	5876.	12.32	1896.	748.	604.	13.28
	HYDROGRAPH AT							
+		211AE	63.	12.02	8.	2.	2.	0.03
	2 COMBINED AT							
+		C627	5890.	12.32	1900.	750.	605.	13.32
	HYDROGRAPH AT							
+		211AF	102.	12.00	13.	4.	3.	0.05

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

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1*****************************************
 *  HEC-2 WATER SURFACE PROFILES          *
 *                                        *
 *  Version   4.6.2;  May 1991            *
 *                                        *
 *  RUN DATE    17OCT96    TIME   17:05:49 *
 *****************************************
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*************************************
*  U.S. ARMY CORPS OF ENGINEERS     *
*  HYDROLOGIC ENGINEERING CENTER    *
*  609 SECOND STREET, SUITE D       *
*  DAVIS, CALIFORNIA 95616-4687     *
*          (916) 756-1104           *
*************************************
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X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX             XXXXXXX
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THIS RUN EXECUTED 17OCT96 17:05:49

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*************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
*************************************
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T1   *  FOUNTAIN HILLS ADMP                          File:  EX-AS.IH2
T2   *  Project No. 63                                 By:  ccc
T3   *  Ex Cond/No Dam
T4   *  Extracted from the original Ftn Hills FDS model w/ following changes:
T4   *   (a) The discharge values are changed to reflect discharges
T5   *        for the existing condition with or without Dam 4.
T6   *   (b) Cross-sections above Dam 4 are removed.
T7   *  NOTES:
T9   *   (a) Sources of 100-yr discharge for the existing condition:
T9   *   (b) Runs are for the existing with or without Dam 4.
```

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	2	0	0	0.02	0	0	0	1504.47	

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	1	0	-1	0	0	0	-1	0	0	0

```
J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    150        101        110

        HEC-1 Concentration Point C627  : 24-hour storm controls

QT        3       4134       4134       3187

        Start Hydraulically Similar Reach AS1
                See Exhibit 1, Manning's n Value Map.
NC    0.080      0.080      0.060       0.1        0.3

  Section 1.521 is section 1 of 3 for Normal Depth Calculation
ET                           9.1                                          9944.73    10036.23
          HEC-1 Concentration Point C627:  24-Hr storm controls.
                START Similar Hydraulic Reach  AS1
                See Exhibit 1, Manning's n Value Map.
                Section 1 of 3 for SLOPE-AREA METHOD (Normal Depth Calculation)
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                Left overbank is non effective flow area:  Hard coded GR's
                          from STA 9804.9 to 9826.6 @ EL 1505
X1    1.521        19     9953.3    10031.7         0          0        0.0                  -0.6
GR   1520.9    9765.7     1520.9     9776.5    1510.2     9790.9       1505     9804.9       1505     9819.3
GR     1505    9826.6     1504.9     9837.0    1505.2     9869.5     1505.3     9886.6     1506.6     9894.6
GR   1506.9    9916.2     1505.2     9935.3    1505.0     9943.3     1500.4     9953.3     1500.1     9973.9
GR   1499.9   10000.0     1500.0    10001.2    1500.1    10031.7     1510.6    10042.9
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  Section 1.523 is section 2 of 3 for Normal Depth Calculation

ET                          9.1                                                                  9944.72    10036.23
                Section 2 of 3 for SLOPE-AREA METHOD (Normal Depth Calculation)
                Left overbank is non effective flow area:  Hard coded GR's
                          from STA 9804.9 to 9826.6 @ EL 1505
X1    1.523        19     9953.3    10031.7        10        10        10                   -0.4
GR   1520.9    9765.7     1520.9     9776.5    1510.2    9790.9      1505    9804.9        1505    9819.3
GR     1505    9826.6     1504.9     9837.0    1505.2    9869.5    1505.3    9886.6      1506.6    9894.6
GR   1506.9    9916.2     1505.2     9935.3    1505.0    9943.3    1500.4    9953.3      1500.1    9973.9
GR   1499.9   10000.0     1500.0    10001.2    1500.1   10031.7    1510.6   10042.9

  Section 1.525 is section 3 of 3 for Normal Depth Calculation

ET                          9.1                                                                  9944.71    10036.23
                Section 3 of 3 for SLOPE-AREA METHOD (Normal Depth Calculation)
                Left overbank is non effective flow area:  Hard coded GR's
                          from STA 9804.9 to 9826.6 @ EL 1505
X1    1.525        19     9953.3    10031.7        10        10        10                   -0.2
GR   1520.9    9765.7     1520.9     9776.5    1510.2    9790.9      1505    9804.9        1505    9819.3
GR     1505    9826.6     1504.9     9837.0    1505.2    9869.5    1505.3    9886.6      1506.6    9894.6
GR   1506.9    9916.2     1505.2     9935.3    1505.0    9943.3    1500.4    9953.3      1500.1    9973.9
GR   1499.9   10000.0     1500.0    10001.2    1500.1   10031.7    1510.6   10042.9


NH        3       .08     9953.3       .06   10031.7       .08   10042.9
ET                          9.1                                                                  9944.71    10036.24
                Left overbank is non effective flow area:  Hard coded GR's
                          from STA 9804.9 to 9826.6 @ EL 1505
                STREAM DISTANCE IN MILES ABOVE CONFLUENCE WITH VERDE RIVER.
X1    1.527        19     9953.3    10031.7        10        10        10
GR   1520.9    9765.7     1520.9     9776.5    1510.2    9790.9      1505    9804.9        1505    9819.3
GR     1505    9826.6     1504.9     9837.0    1505.2    9869.5    1505.3    9886.6      1506.6    9894.6
GR   1506.9    9916.2     1505.2     9935.3    1505.0    9943.3    1500.4    9953.3      1500.1    9973.9
GR   1499.9   10000.0     1500.0    10001.2    1500.1   10031.7    1510.6   10042.9


NH        3       .08     9983.5       .06   10020.7       .08   10077.8
ET                          9.1                                                                  9918.34    10050.50
X1    1.577        18     9983.5    10020.7       320       250     259.4
GR   1517.9    9859.9     1517.6     9873.1    1510.0    9892.1    1510.5    9914.2      1507.7    9921.4
GR   1506.7    9935.0     1504.4     9943.4    1503.6    9960.5    1504.3    9968.1      1504.3    9983.5
GR   1503.5    9990.1     1503.3    10000.0    1503.2   10015.5    1504.5   10020.7      1506.0   10045.0
GR   1513.2   10058.7     1520.8    10069.3    1515.4   10077.8
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NH        3       .08     9951.6       .06   10064.9       .08   10258.6
ET                          9.1                                                                  9945.09    10071.55
X1    1.602        18     9951.6    10064.9       135       150     136.1
GR   1517.6    9879.3     1517.3     9905.8    1516.8    9931.5    1507.8    9951.6      1507.5    9972.2
GR   1506.9   10000.0     1507.5    10009.0    1508.0   10040.9    1508.1   10064.9      1511.6   10073.8
GR   1511.7   10094.5     1512.6    10111.3    1513.1   10146.6    1513.4   10172.0      1513.4   10189.2
GR   1518.4   10204.8     1520.3    10233.0    1520.6   10258.6

        AS 1.636 GR Data Surveyed by ALS
        Check Section # 1
        Ashbrook Wash:  Section #4 = 1.636 River Miles

NH        3       .08    10021.4       .06   10056.4       .08   10259.4
ET                          9.1                                                                  9995.39    10192.22
                Channel has been filled.  GR Data Surveyed By ALS.
X1    1.636        12     9995.4    10056.4       170       180     180.1
GR   1518.7    9899.4    1518.97     9905.4    1520.40    9921.4   1518.85    9995.4      1511.1   10021.4
GR   1510.6   10051.4    1512.85    10056.4   1514.15   10188.4   1518.85   10199.4      1521.4   10210.4
GR   1523.6   10239.4    1524.35    10259.4

        AS 1.686 GR Data Surveyed by ALS
        Check Section # 2
        Ashbrook Wash:  Section # 5 = 1.686 River Miles

NH        3       .08       9990       .06     10037       .08     10286
ET                          9.1                                                                  9871.80    10079.53
                Channel has been filled.  GR Data Surveyed By ALS.
X1    1.686        18       9990     10037       250       250     262.6
GR   1523.4      9778    1523.54      9787   1523.16      9860   1518.61      9877    1516.21      9990
GR   1515.0      9997    1512.11     10003   1512.11     10008   1514.21     10014    1518.11     10037
GR   1517.7     10064    1521.11     10087   1523.91     10113   1523.41     10140    1526.81     10235
GR   1527.2     10267    1525.61     10281   1526.19     10286

        HEC-1 Concentration Point C626

QT        3      4127       4127      3180

NH        3       .08    10036.3       .06   10076.3       .08   10136.4
ET                          9.1                                                                  9881.69    10080.63
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          HEC-1 Concentration Point C626:  24-Hr storm controls.
X1    1.727        33    10036.3    10076.3       200       220     213.9
GR   1525.4    9773.1     1526.8     9782.8    1528.1    9795.5    1528.2    9811.6    1528.2    9823.0
GR   1527.6    9831.4     1527.6     9847.0    1527.5    9860.8    1526.4    9872.8    1521.1    9888.3
GR   1521.0    9896.3     1520.1     9900.9    1520.6    9909.4    1520.9    9928.2    1519.3    9936.6
GR   1520.9    9944.6     1521.3     9953.6    1520.7    9959.1    1521.3    9980.3    1521.3    9990.2
GR   1521.2   10000.0     1521.7    10010.3    1520.9   10025.6    1519.7   10032.7    1520.6   10036.3
GR   1520.4   10050.7     1519.2    10070.6    1520.6   10076.3    1525.9   10084.6    1525.9   10090.7
GR   1524.0   10103.1     1524.4    10117.7    1524.2   10136.4
```



```
NH        3       .08       9987       .06   10035.2       .08   10229.1
ET                          9.1                                            9967.78   10160.89
X1    1.855        25       9987   10035.2       680       700     677.4
GR   1539.3    9855.7     1539.0     9869.5    1540.0    9876.5    1540.0    9899.3    1539.0    9947.6
GR   1536.1    9957.5     1533.2     9975.6    1532.2    9987.0    1528.1    9997.9    1527.7   10000.0
GR   1527.4   10006.0     1528.5    10011.5    1530.8   10023.4    1531.5   10035.2    1531.7   10060.0
GR   1531.3   10086.0     1531.0    10104.4    1531.7   10114.8    1532.0   10153.2    1535.7   10164.8
GR   1537.3   10172.5     1536.4    10188.1    1536.7   10195.9    1536.8   10218.8    1536.0   10229.1

      START Hydraulically Similar Reach   AS2
                 See Exhibit 1, Manning's n Value Map.

NH        3      .113       9980      .125   10068.8       .12   10159.1
ET                          9.1                                            9927.73   10119.83
                 START Hydraulically Similar Reach AS2
                 See Exhibit 1, Manning's n Value Map.
X1    1.980        20       9980   10112.6       660       640     659.3
GR   1552.8    9825.0     1552.6     9835.2    1554.2    9846.3    1553.9    9873.7    1553.7    9902.3
GR   1548.2    9918.4     1543.8     9934.7    1543.4    9951.4    1543.0    9980.0    1540.4    9991.3
GR   1540.4   10000.0     1540.9    10009.4    1540.9   10031.2    1541.8   10041.5    1542.2   10068.8
GR   1542.5   10112.6     1547.3    10123.5    1550.0   10135.9    1550.2   10147.1    1548.6   10159.1

NH        3      .113       9988.7     .125   10018.5       .12   10374.7
ET                          9.1                                            9939.26   10125.75
X1    2.071        25       9948.9   10084.3       490       475     480.4
GR   1558.5    9830.3     1558.2     9841.5    1560.2    9851.9    1561.1    9872.6    1560.7    9903.1
GR   1560.3    9926.3     1555.9     9935.6    1551.6    9948.9    1550.5    9976.2    1549.7    9988.7
GR   1547.4   10000.0     1547.2    10009.4    1548.9   10018.5    1549.7   10051.1    1550.9   10066.1
GR   1551.4   10084.3     1551.3    10115.3    1554.8   10126.0    1556.4   10140.0    1557.0   10181.0
GR   1557.2   10221.1     1556.9    10253.7    1556.8   10302.9    1556.7   10342.5    1556.2   10374.7

         BALBOA  WASH   Tributary

        HEC-1 Concentration Point C549

QT        3       4068       4068      3095

NH        3      .113       9946.9     .125      10000       .12   10156.6
ET                          9.1                                            9894.22   10100.95
          HEC-1 Concentration Point C549:  24-Hr storm controls.
                 BALBOA WASH Tributary
X1    2.095        17       9925.4     10000       120       140     128.7
GR   1563.1    9785.9     1562.5     9828.1    1559.3    9843.4    1558.2    9878.0    1556.2    9905.9
GR   1554.1    9925.4     1553.2     9946.9    1552.7    9967.5    1551.9    9990.9    1553.6   10000.0
GR   1553.6   10020.9     1553.5    10051.4    1552.2   10065.1    1555.0   10078.1    1556.9   10099.0
GR   1558.7   10124.6     1559.1    10156.6

        HEC-1 Concentration Point C549R
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QT        3       3132       3132      2112

NH        3      .113       9955.4     .125   10023.9       .12   10088.5
ET                          9.1                                            9827.06   10054.90
          HEC-1 Concentration Point C549R:  24-Hr storm controls.
X1    2.200        12       9955.4   10023.9       570       490     552.7
GR   1570.0    9815.8     1566.0     9822.2    1561.3    9843.3    1561.5    9862.7    1561.2    9899.8
GR   1560.8    9955.4     1560.1     9974.9    1560.6    9994.7    1560.5   10000.0    1559.9   10023.9
GR   1564.7   10042.4     1565.5    10088.5

NH        3      .113       9924.6     .125   10048.8       .12   10070.5
ET                          9.1                                            9840.32   10052.48
X1    2.279        12       9924.6   10048.8       380       430     415.5
GR   1576.1    9821.9     1573.1     9829.6    1566.2    9847.2    1566.0    9924.6    1565.7    9950.2
GR   1565.7    9950.2     1565.3    10000.0    1565.1   10035.2    1565.1   10035.2    1567.0   10048.8
GR   1573.7   10061.8     1573.6    10070.5
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NH        3       .113     9895.6       .125     10021.3         .12       10071
ET                          9.1                                                          9856.22    10063.59
X1    2.304         12     9864.7    10021.3         115         150        134.1
GR   1576.0     9842.8     1574.3     9848.1      1566.3      9864.7       1566.1     9895.6      1565.3      9901.8
GR   1566.3     9909.1     1566.2     9959.0      1566.1     10000.0       1567.3    10021.3      1567.4     10051.7
GR   1569.2    10061.5     1574.6    10071.0

  ******************************************************************************
  **************************    Culvert    622    ****************************
  ******************************************************************************

        HEC-1 Concentration Point C622

QT        3       3097       3097       2053

NH        3       .113     9955.7       .125     10033.7         .12      10081.2
ET                          9.1                                                          9878.25    10065.35
          HEC-1 Concentration Point C622:  24-Hr storm controls.
         CULVERT  622:  ASHBROOK WASH and SAGUARO BOULEVARD
            Culvert 622     Downstream: expanded flow. (SECTION 1 OF SC ROUTINE)
X1    2.382         17     9955.7    10033.7         405         405        410.2
GR   1587.5     9836.8     1584.1     9848.5      1583.7      9862.1       1572.2     9884.1      1572.8      9921.5
GR   1573.1     9932.4     1571.9     9945.0      1573.2      9955.7       1571.5     9973.7      1571.3      9982.8
GR   1571.7    10000.0     1571.2    10013.0      1571.6     10021.4       1572.5    10033.7      1572.7     10059.9
GR   1577.2    10069.5     1582.8    10081.2

        Use NC Record to set Contraction and Expansion Coefficients for Culvert.

NC     .113        .12       .125         0.3         0.5
NH        3      0.113     9984.6       0.125     10018.2       0.120     10450.2

ET                          9.1                                                          9992.30    10011.71
1
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            Culvert 622  Outlet.  3-60" CMP's          (SECTION 2 OF SC ROUTINE)
              Photogrammetric x-sec. located 28' Downstream. (No Elev. Adjust.)
               Base Channel Elevations were  raised to Culvert Invert EL  1574.0
X1    2.405         23     9992.3    10011.7         115         130        123.1
X3       10                                                                  1581.98     1581.98
GR   1590.3     9743.4     1588.7     9776.2      1586.8      9814.6       1586.1     9855.5      1585.0      9898.6
GR   1584.0     9942.0     1574.9     9961.5      1574.4      9984.6         1574    9992.30        1574     10000.0
GR     1574    10011.7       1574    10018.2        1574     10034.9       1575.4    10050.7      1583.7     10077.0
GR   1584.1    10104.3     1585.5    10116.2      1585.1     10161.0       1585.0    10198.3      1585.0     10267.7
GR   1585.0    10347.6     1585.0    10430.9      1592.2     10450.2


SC    3.024        0.9       2.63         0          5           0         121         2.3    1575.82     1574.01

NH        3      0.113     9951.1       0.125     10036.5       0.120     10339.6

ET                          9.1                                                          9853.96    10091.50
            Culvert 622  Inlet.   3-60" CMP's          (SECTION 3 OF SC ROUTINE)
              Photogrammetric x-sec. located 10' Upstream. (No Elev. Adjust.)
               Base Channel Elevations were lowered to Culvert Invert EL 1575.82
            Culvert 622 BT information surveyed by ALS. West top of curb.
            Culvert 622 BT information coded per figure 3.16 (HEC-2, Sept 90)
            Right overbank is non effective flow area:  Hard coded GR's
                from STA 10194.7 to STA 10308.4 @ EL 1587.6
X1    2.428         32       9995    10012.2         121         121        121
X2                           2     1580.82     1584.12
X3       10                                                                  1584.06     1584.06
X4        2    1584.75       9929     1584.3       10055

BT      -27     9684.3     1588.8                 9704.9      1587.9                  9720.8      1589.3
BT             9739.1     1589.1                 9769.2      1588.2                  9815.4      1587.5
BT             9842.7     1586.7                 9885.4      1586.1                  9927.0      1584.9
BT               9929    1584.75                   9950    1584.73                   10000     1584.06
BT              10050    1584.38                  10055     1584.3                 10061.0      1585.6
BT            10103.1     1586.9                10121.0      1586.7                 10138.5      1588.1
BT            10179.4     1588.2                10194.7      1587.6                 10209.6      1587.6
BT            10223.3     1587.6                10240.6      1587.6                 10254.4      1587.6
BT            10276.8     1587.6                10308.4      1587.6                 10339.6      1587.9

GR   1588.8     9684.3     1587.9     9704.9      1589.3      9720.8       1589.1     9739.1      1588.2      9769.2
GR   1587.5     9815.4     1586.7     9842.7      1586.1      9885.4       1584.9     9927.0      1583.9      9940.1
GR   1580.4     9951.1     1578.2     9974.5      1578.3      9994.3      1575.82       9995    1575.82       10000
GR   1575.8    10004.3    1575.82    10012.2      1576.6     10024.8       1580.2    10036.5      1585.6     10061.0
GR   1586.9    10103.1     1586.7    10121.0      1588.1     10138.5       1588.2    10179.4      1587.6     10194.7
GR   1587.6    10209.6     1587.6    10223.3      1587.6     10240.6       1587.6    10254.4      1587.6     10276.8
GR   1587.6    10308.4     1587.9    10339.6

          Return  Contraction and Expansion coefficients to Normal
1
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NC                                        0.1        0.3

NH        3       .113       9987       .125     10037.3         .12     10256.5
ET                            9.1                                                                  9887.27    10119.65
            Culvert 622     Upstream:  expanded flow.  (SECTION 4 OF SC ROUTINE)
                LEGEND WASH Tributary
X1    2.448         21       9987    10037.3        105        110       104.6
GR   1588.2     9881.6     1584.5     9896.3     1580.2     9905.4      1580.5     9927.7     1580.7     9987.0
GR   1579.7    10000.0     1579.3    10023.3     1581.4    10037.3      1581.5    10070.4     1578.8    10079.3
GR   1580.7    10084.0     1582.0    10090.7     1585.8    10099.6      1586.9    10122.3     1587.8    10158.4
GR   1588.1    10191.4     1587.9    10205.6     1586.9    10215.9      1587.1    10233.5     1586.8    10248.9
GR   1587.3    10256.5

       START Hydraulically Similar Reach   AS3
                See Exhibit 1, Manning's n Value Map.

         LEGEND  WASH   Tributary

       HEC-1 Concentration Point C622R

QT        3       2618       2618       1384

  ******************************************************************************
  ***************************    Culvert    M7    ******************************
  ******************************************************************************

  Culvert M7    Downstream fully expanded flow.  Special Culvert Section # 1

NH        3         .1      9973.9       .045     10050.6          .1       10236
ET                            9.1                                                                  9936.33    10058.71
          HEC-1 Concentration Point C622R:  24-hr storm controls.
                START Hydraulically Similar Reach AS3
                See Exhibit 1, Manning's n Value Map.
         CULVERT  M7 :  ASHBROOK WASH and BAYFIELD DRIVE
            Culvert M7      Downstream: expanded flow. (SECTION 1 OF SC ROUTINE)
X1    2.494         19      9973.9    10050.6        260        220       245.9
GR   1593.7     9831.1     1593.1     9860.6     1592.1     9894.6      1591.5     9922.3     1587.6     9934.7
GR   1583.1     9948.0     1583.0     9973.9     1582.7     9990.8      1582.4    10000.0     1581.7    10022.3
GR   1581.2    10039.0     1584.0    10050.6     1589.6    10065.5      1589.7    10103.0     1590.1    10140.4
GR   1590.5    10179.7     1591.0    10217.4     1589.8    10228.5      1589.0    10236.0

       Use NC Record to set Contraction and Expansion Coefficients for Culvert.

NC                                        0.3        0.5
NH        3      0.100      9975.4      0.045     10029.2      0.100       10246

       Culvert  M7 OUTLET              Special Culvert Section # 2


ET                            9.1                                                                  9991.00    10009.71
1
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            Culvert M7   Outlet.  3-60" CMP's          (SECTION 2 OF SC ROUTINE)
              Photogrammetric x-sec. located 12' Downstream. (No Elev. Adjust.)
X1    2.529         23       9991    10009.7        195        170       180.7
X3       10                                                                          1589.94    1589.94
GR   1599.3     9738.5     1599.3     9742.0     1599.7     9753.7      1599.8     9774.5     1598.6     9855.8
GR   1596.9     9878.6     1595.1     9919.4     1593.9     9939.3      1585.5     9960.4     1585.4     9975.4
GR   1583.1     9982.0    1583.25    9991.00     1583.4    10000.0     1583.15    10009.70    1582.9    10019.4
GR   1584.9    10029.2     1591.0    10046.7     1592.2    10061.9      1591.8    10083.1     1591.0    10119.4
GR   1590.8    10162.4     1591.0    10209.0     1591.2    10246.0

      3-60" CMP's

SC    3.024         0.9       2.63         0          5          0          84        2.3    1584.98    1584.71

NH        4      0.100      9987.3      0.045     10015.3      0.100     10047.9      0.002    10248.3

ET                            9.1                                                                  9945.80    10052.29
                Right bank is non effective flow area:  Hard coded GR's
                        from STA 10072.3 to 10248.3 @ EL 1600
            Culvert M7    Inlet.   3-60"   CMP's       (SECTION 3 OF SC ROUTINE)
              Photogrammetric x-sec. located 12' Upstream. (No Elev. Adjust.)
              Base Channel Elevations were lowered to Culvert Invert EL 1584.98
            Culvert M7  BT information Surveyed by ALS. North top of curb.
            Culvert M7  BT information coded per figure 3.16 (HEC-2, Sept 90)
X1    2.545         24      9993.7    10007.8         84         84          84
X2                               2    1589.98     1592.5                                                                    15
X3       10                                                                          1592.2     1592.2
X4        2     1592.8      9960.5     1592.2      10039

BT      -20     9757.4      1601.3                 9793.4     1601.3                 9824.3     1600.4
BT             9849.3      1599.4                 9882.7     1597.8                 9904.6     1596.8
BT             9916.7      1595.6                 9939.5     1594.8                 9958.1     1593.2
BT            9960.50      1592.8                 9971.5    1592.38                  10000    1592.38
BT              10039      1592.2                10047.9     1593.0                10072.3       1600
BT            10099.9        1600                10138.6       1600                10173.4       1600
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BT            10214.6      1600              10248.3       1600

GR   1601.3    9757.4    1601.3    9793.4    1600.4    9824.3    1599.4    9849.3    1597.8    9882.7
GR   1596.8    9904.6    1595.6    9916.7    1594.8    9939.5    1593.2    9958.1    1590.5    9974.9
GR   1589.1    9987.3   1584.98    9993.7   1584.98   10000.0   1584.98   10007.8    1588.8   10015.3
GR   1589.7   10030.8    1592.2   10038.9    1593.0   10047.9      1600   10072.3      1600   10099.9
GR     1600   10138.6      1600   10173.4      1600   10214.6      1600   10248.3

         Return  Contraction and Expansion coefficients to Normal

NC                                   0.1       0.3

NH       3        .1    9989.8      .045   10010.8        .1   10139.4
ET                         9.1                                                   9930.61   10114.81
1
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            Culvert M7      Upstream:  expanded flow.  (SECTION 4 OF SC ROUTINE)
X1    2.558        19    9989.8   10010.8        70        70      71.3
GR   1597.4    9874.5    1596.1    9893.4    1594.9    9929.4    1589.1    9945.1    1589.2    9954.1
GR   1587.8    9960.3    1587.7    9967.7    1588.6    9970.9    1588.5    9989.8    1587.0   10000.0
GR   1587.0   10003.7    1588.4   10010.8    1588.3   10026.5    1589.1   10037.9    1593.7   10053.1
GR   1594.2   10081.5    1594.4   10112.2    1594.7   10126.6    1595.4   10139.4

NH       3        .1   10023.2      .045   10028.9        .1   10066.3
ET                         9.1                                                   9938.75   10044.51
X1    2.670        25    9959.8   10044.5       575       610     593.5
GR   1609.4    9650.9    1606.6    9663.7    1607.0    9681.1    1606.2    9700.5    1606.7    9704.7
GR   1607.0    9721.1    1606.1    9740.1    1605.4    9772.0    1604.4    9828.4    1603.9    9847.0
GR   1602.9    9870.2    1599.8    9888.9    1599.2    9926.0    1594.4    9947.4    1595.0    9959.8
GR   1594.7    9980.3    1594.4    9987.8    1594.3    9995.5    1594.3   10000.0    1594.0   10015.2
GR   1594.5   10023.2    1592.6   10028.9    1599.0   10044.5    1606.1   10059.3    1610.0   10066.3

NH       3        .1    9968.9      .045    9992.6        .1   10066.9
ET                         9.1                                                   9949.46   10045.96
            Left overbank is non effective flow area:  Hard coded GR's
               from STA 9927.3 to 9946.4 @ EL 1607.5
X1    2.785        21    9968.9    9992.6       610       610     607.2
GR   1615.1    9809.0    1614.0    9841.4    1613.1    9875.0    1612.6    9886.4    1611.9    9903.0
GR   1610.5    9913.4    1607.5    9927.3    1607.5    9935.5    1607.5    9941.1    1607.5    9946.4
GR   1604.9    9953.7    1602.6    9968.9    1601.6    9977.4    1600.4    9988.3    1601.7    9992.6
GR   1601.8   10000.0    1602.1   10007.9    1603.9   10021.0    1605.3   10041.1    1607.4   10050.3
GR   1614.9   10066.9

NH       3        .1     10000      .045     10033        .1   10137.3
ET                         9.1                                                   9934.70   10055.59
X1    2.807        23     10000   10047.1       115       120     112.3
GR   1614.4    9896.8    1613.4    9911.0    1609.9    9929.0    1605.4    9939.7    1603.2    9949.3
GR   1604.1    9959.7    1604.2    9975.1    1603.9    9991.9    1604.4   10000.0    1603.9   10009.4
GR   1602.3   10015.1    1603.1   10033.0    1606.0   10047.1    1607.7   10056.7    1610.5   10070.3
GR   1613.5   10081.1    1617.3   10089.4    1622.1   10096.0    1627.3   10102.8    1632.4   10110.3
GR   1639.4   10119.5    1644.5   10126.9    1650.2   10137.3

NH       3        .1     10000      .045   10027.6        .1     10133
ET                         9.1                                                   9980.85   10074.87
X1    2.899        21    9990.2   10036.9       485       490     489.4
GR   1623.7    9891.7    1622.9    9911.2    1621.7    9939.2    1621.3    9947.9    1618.1    9965.3
GR   1613.2    9978.1    1611.0    9990.2    1610.7   10000.0    1609.6   10012.9    1610.3   10027.6
GR   1610.6   10036.9    1609.9   10050.9    1610.1   10060.7    1611.2   10070.2    1613.0   10075.8
GR   1615.1   10083.4    1618.4   10092.6    1620.4   10099.0    1621.2   10110.7    1621.5   10116.6
GR   1638.3   10133.0

1
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NH       3        .1    9971.8      .045   10023.9        .1   10128.6
ET                         9.1                                                   9959.81   10064.07
X1    3.008        29    9962.7   10023.9       575       600     573.7
GR   1630.8    9799.0    1631.8    9817.3    1631.6    9843.0    1631.1    9864.0    1631.0    9876.2
GR   1631.1    9882.4    1630.6    9891.7    1629.0    9913.4    1628.9    9921.5    1627.7    9938.8
GR   1625.3    9948.5    1621.1    9962.7    1619.7    9971.8    1618.7    9986.5    1617.8   10000.0
GR   1618.7   10005.4    1618.1   10015.6    1620.5   10023.9    1620.1   10039.5    1618.7   10052.9
GR   1619.3   10056.9    1622.3   10065.0    1624.3   10076.9    1625.7   10081.4    1628.5   10096.9
GR   1628.8   10111.2    1629.7   10114.7    1629.8   10118.3    1631.1   10128.6

NH       3        .1    9988.7      .045   10017.8        .1   10148.2
ET                         9.1                                                   9948.20   10032.87
               ARROW WASH Tributary
X1    3.121        24    9988.7   10017.8       565       600     598.0
GR   1641.5    9787.2    1640.8    9824.7    1640.9    9830.1    1637.9    9837.6    1637.4    9868.2
GR   1636.6    9880.2    1636.6    9890.8    1636.4    9910.9    1634.2    9929.4    1629.3    9961.2
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GR   1629.1     9977.0     1628.9     9988.7     1625.8    10000.0     1629.3    10017.8     1630.5    10027.0
GR   1632.7    10043.1     1636.2    10055.6     1637.4    10065.6     1638.3    10080.0     1638.6    10096.9
GR   1639.3    10113.9     1640.1    10128.6     1640.8    10138.9     1641.3    10148.2

          ARROW  WASH   Tributary

        HEC-1 Concentration Point C621

NH        3        .1       9980       .045    10023.3        .1    10215.8

QT        3      2491       2491       1184

ET                          9.1                                                          9969.40    10050.61
          HEC-1 Concentration Point C621:  24-hr storm controls
X1    3.208        22       9980    10050.6        260       335       456.4
GR   1649.5     9756.0     1651.8     9776.8     1647.5     9794.4     1646.6     9801.3     1647.8     9814.7
GR   1647.5     9869.3     1646.9     9890.1     1645.9     9904.2     1644.9     9915.9     1644.5     9930.6
GR   1642.7     9943.5     1638.2     9980.0     1635.9    10000.0     1637.0    10023.3     1639.7    10050.6
GR   1646.4    10072.8     1647.3    10112.6     1647.8    10137.9     1648.1    10157.1     1648.6    10177.8
GR   1649.1    10195.3     1649.2    10215.8


NH        3        .1     9998.3       .045    10036.8        .1    10258.8
ET                          9.1                                                          9988.22    10058.81
X1    3.241        34     9998.3    10036.8        175       175       177.3
GR   1655.6     9679.6     1654.7     9699.2     1654.0     9722.2     1652.9     9744.9     1651.8     9769.6
GR   1651.6     9787.1     1651.0     9809.3     1649.9     9822.4     1649.0     9839.1     1648.3     9863.0
GR   1647.4     9889.1     1647.0     9922.3     1646.1     9955.6     1646.0     9974.8     1645.7     9983.9
GR   1641.4     9998.3     1640.9    10000.0     1641.4    10013.6     1641.9    10036.8     1643.9    10055.3
GR   1645.5    10066.3     1647.1    10079.1     1649.4    10094.6     1650.9    10109.4     1652.2    10123.1
GR   1652.6    10145.6     1653.7    10155.4     1654.1    10164.4     1654.1    10190.1     1653.6    10210.6
GR   1654.6    10230.9     1656.8    10239.6     1657.3    10248.5     1657.9    10258.8

        HEC-1 Concentration Point C613
1
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QT        3      2160       2160        972

NH        3        .1     9994.8       .045      10014        .1      10196
ET                          9.1                                                          9986.79    10100.35
          HEC-1 Concentration Point C613:  24-hr storm controls.
X1    3.323        30     9986.8    10035.6        420       440       429.5
GR   1661.3     9850.1     1660.8     9863.7     1663.4     9877.7     1663.2     9892.7     1658.3     9909.9
GR   1657.2     9934.0     1656.7     9948.5     1656.4     9961.8     1655.6     9978.7     1654.5     9986.8
GR   1649.8     9994.8     1649.8    10000.0     1651.4    10014.0     1652.0    10035.6     1651.5    10056.8
GR   1651.0    10074.8     1650.4    10089.9     1650.3    10093.9     1653.2    10099.9     1656.3    10104.6
GR   1658.7    10112.2     1660.4    10118.8     1660.6    10128.2     1661.2    10138.4     1662.0    10146.3
GR   1663.1    10154.2     1663.3    10161.8     1663.7    10171.9     1663.6    10187.9     1663.3    10196.0


NH        3        .1       9986       .045    10028.9        .1    10250.3
ET                          9.1                                                          9976.51    10061.39
X1    3.421        29     9977.8    10028.9        510       505       518.2
GR   1667.8     9775.1     1668.8     9788.5     1669.6     9813.4     1670.1     9817.7     1670.2     9880.7
GR   1669.5     9899.9     1668.4     9935.3     1667.7     9953.4     1667.1     9965.8     1662.4     9977.8
GR   1660.1     9986.0     1660.0    10000.0     1660.5    10016.3     1661.0    10028.9     1661.4    10051.0
GR   1661.9    10057.7     1665.2    10069.8     1668.4    10078.2     1670.4    10084.7     1670.6    10110.0
GR   1670.9    10124.0     1673.8    10138.4     1674.2    10151.7     1674.0    10161.5     1674.3    10210.7
GR   1674.3    10222.3     1675.4    10233.3     1675.3    10239.5     1674.2    10250.3

  ******************************************************************************
  ***************************    Culvert  608     ******************************
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        HEC-1 Concentration Point C608

QT        3      2154       2154        972

NH        3        .1     9973.3       .045    10019.6        .1    10305.1
ET                          9.1                                                          9965.79    10048.85
          HEC-1 Concentration Point C608:  24-Hr storm controls.
         CULVERT  608:  ASHBROOK WASH and HAMPSTEAD DRIVE
            Culvert 608     Downstream: expanded flow. (SECTION 1 OF SC ROUTINE)
X1    3.487        38     9973.3    10019.6        350       340       351.5
GR   1683.7     9708.3     1682.9     9729.6     1682.8     9752.4     1680.6     9768.8     1680.0     9782.9
GR   1679.7     9846.6     1678.4     9856.0     1677.3     9873.6     1677.2     9905.2     1675.0     9916.4
GR   1675.0     9949.4     1670.5     9960.7     1668.0     9973.3     1667.2     9982.3     1666.6     9990.5
GR   1666.6    10000.0     1666.7    10012.0     1668.6    10019.6     1669.8    10032.0     1669.0    10043.4
GR   1670.4    10059.0     1671.5    10065.9     1676.5    10081.4     1677.2    10093.7     1677.2    10109.9
GR   1676.8    10124.4     1678.8    10132.2     1680.3    10140.9     1681.0    10151.4     1681.0    10168.1
GR   1681.6    10224.8     1682.0    10244.0     1682.9    10255.5     1682.1    10265.9     1682.7    10274.1
GR   1683.4    10288.2     1683.5    10303.3     1683.5    10305.1

        Use NC Record to set Contraction and Expansion Coefficients for Culvert.
1
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NC                                        0.3        0.5
NH        3      0.100     9978.5      0.045    10029.4      0.100    10282.7

ET                            9.1                                                          9988.69    10017.10
             Culvert 608  Outlet.   3-10'x 7' Box       (SECTION 2 OF SC ROUTINE)
               Photogrammetric x-sec. located 24.4' Downstream. (No Elev. Adjust.
X1    3.519        30     9988.7    10017.1       170        170      168.3
X3       10                                                                   1678.5     1678.5
GR   1688.0    9703.2     1686.8     9716.7    1686.3     9734.4     1685.9    9751.2     1684.6     9768.9
GR   1681.6    9793.0     1682.1     9800.9    1681.3     9839.1     1680.2    9861.1     1679.0     9880.8
GR   1680.4    9889.8     1679.0     9923.2    1674.9     9945.8     1673.2    9957.2     1672.5     9978.5
GR   1670.8    9988.7     1670.8    10000.0    1670.6    10017.1     1671.7   10029.4     1675.6    10052.6
GR   1678.0   10070.8     1679.1    10110.3    1680.8    10149.4     1682.6   10183.3     1683.9    10203.9
GR   1683.9   10221.3     1683.4    10222.7    1683.5    10254.8     1683.9   10257.7     1684.3    10282.7

SC    3.013       0.5       2.63         0          7         10       61.5       8.1    1673.19    1672.71

NH        3      0.100     9980.8      0.045    10013.8      0.100    10300

ET                            9.1                                                          9980.79    10013.80
             Culvert 608  Inlet.    3-10'x7'  Box       (SECTION 3 OF SC ROUTINE)
               Photogrammetric x-sec. located 10' Upstream. (No Elev. Adjust.)
             Culvert 608 BT information Surveyed by ALS. West top of curb.
X1    3.531        21     9980.8    10013.8      61.5       61.5       61.5
X2                            2    1680.19    1681.95
X3       10                                                                   1681.57    1681.57

BT      -11    9708.7     1690.0                 9800    1684.76                 9850    1682.76
BT             9900     1681.89                 9950    1681.57                10000    1681.87
BT            10050     1682.36                10100    1682.86                10150    1683.35
BT            10200      1683.8                10300     1685.5

GR   1690.0    9708.7     1686.7     9747.3    1683.8     9786.3     1680.6    9833.4     1678.7     9874.1
GR   1677.5    9920.2     1677.2     9952.6    1677.1     9974.2     1673.1    9980.8     1671.8     9991.0
GR   1673.2   10000.0     1671.7    10013.8    1672.3    10022.9     1677.1   10025.3     1679.3    10033.9
GR   1679.8   10071.4     1680.7    10123.5    1682.0    10161.6     1682.7   10205.9     1682.8    10240.9
GR   1685.5     10300

          Return  Contraction and Expansion coefficients to Normal

NC                                        0.1        0.3

NH        3        .1     9962.2      .045    10028.7       .1     10309.5
ET                            9.1                                                          9950.19    10057.31
             Culvert 608     Upstream:  expanded flow.  (SECTION 4 OF SC ROUTINE)
X1    3.544        30     9950.2    10057.3        75         75       71.3
GR   1691.5    9663.5     1686.9     9680.4    1686.0     9706.3     1684.4    9731.7     1682.5     9764.7
GR   1680.6    9792.6     1679.2     9806.3    1678.1     9851.1     1677.0    9894.2     1677.4     9903.1
GR   1677.6    9933.6     1676.9     9950.2    1673.8     9962.2     1674.0    9972.0     1674.2    10000.0
GR   1673.7   10013.1     1674.6    10028.7    1675.2    10047.5     1676.7   10057.3     1676.5    10070.2
GR   1682.7   10078.0     1683.3    10092.7    1683.0    10114.2     1684.9   10143.3     1687.2    10167.5
GR   1689.5   10185.7     1690.3    10216.9    1691.0    10240.9     1690.4   10277.5     1691.3    10309.5
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       START Hydraulically Similar Reach   AS4
                See Exhibit 1, Manning's n Value Map.

NH        3       .055     9955.4      .045    10034.2       .025     10161
ET                            9.1                                                          9955.39    10034.21
                START Hydraulically Similar Reach AS4
                See Exhibit 1, Manning's n Value Map.
X1    3.621        28     9955.4    10034.2       390        390      403.4
GR   1691.4    9676.9     1688.2     9688.9    1686.9     9712.0     1686.0    9717.7     1687.0     9723.9
GR   1687.7    9739.3     1687.0     9758.2    1687.3     9796.4     1686.8    9824.6     1686.0     9865.2
GR   1686.2    9883.7     1685.9     9907.3    1685.1     9933.7     1681.9    9955.4     1681.2     9977.5
GR   1679.1    9988.6     1678.4    10000.0    1678.3    10006.7     1681.4   10019.6     1681.9    10034.2
GR   1684.1   10047.5     1689.9    10063.4    1689.5    10072.5     1691.2   10082.2     1691.6    10106.4
GR   1692.2   10121.9     1693.5    10147.6    1693.4    10161.0

NH        3       .055      9990      .045    10062.7       .025     10093.5
ET                            9.1                                                          9980.06    10065.09
X1    3.701        19      9990    10062.7       385        420      421.7
GR   1695.8    9795.3     1692.7     9813.0    1693.7     9821.0     1693.5    9846.3     1694.8     9855.2
GR   1694.3    9877.5     1693.0     9914.9    1692.7     9947.1     1691.9    9964.8     1688.7     9981.9
GR   1687.9    9990.0     1685.2     9994.1    1684.8    10000.0     1686.3   10012.3     1687.8    10035.8
GR   1687.5   10048.9     1688.1    10062.7    1694.0    10077.7     1700.2   10093.5

NH        3       .055     9967.1      .045    10049.3       .025     10220.3
ET                            9.1                                                          9962.68    10051.51
X1    3.764        20     9978.8    10035.2       330        315      332.8
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GR   1706.0     9923.7     1699.5     9938.0     1694.2     9951.2     1695.0     9957.9     1691.5     9967.1
GR   1691.8     9978.8     1690.9     9993.0     1690.3    10000.0     1690.6    10008.6     1691.2    10016.2
GR   1689.7    10023.7     1692.7    10035.2     1692.8    10049.3     1696.1    10068.4     1699.2    10081.5
GR   1700.2    10102.1     1701.1    10140.3     1702.4    10180.7     1703.2    10210.1     1703.5    10220.3

  ******************************************************************************
  **************************   No Dam 4          ******************************
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV=     .100 CEHV=     .300
*SECNO 1.521

3265 DIVIDED FLOW

          HEC-1 Concentration Point C627:  24-Hr storm controls.
                START Similar Hydraulic Reach  AS1
                See Exhibit 1, Manning's n Value Map.
                Section 1 of 3 for SLOPE-AREA METHOD (Normal Depth Calculation)
                Left overbank is non effective flow area:  Hard coded GR's
                          from STA 9804.9 to 9826.6 @ EL 1505
     1.521      5.17   1504.47   1503.81   1504.47   1506.03      1.56       .00       .00   1499.80
    4134.0    105.6    3977.2      51.2      28.1     390.9      13.2        .0        .0   1499.50
       .00      3.75     10.18      3.89      .080      .060      .080      .000   1499.30   9804.71
   .019818       0.        0.        0.         0        12         0       .00    147.20  10037.00

*SECNO 1.523

3265 DIVIDED FLOW

                Section 2 of 3 for SLOPE-AREA METHOD (Normal Depth Calculation)
                Left overbank is non effective flow area:  Hard coded GR's
                          from STA 9804.9 to 9826.6 @ EL 1505
     1.523      5.17   1504.67   1504.01       .00   1506.22      1.56       .20       .00   1500.00
    4134.0    105.5    3977.3      51.2      28.0     390.7      13.2        .1        .0   1499.70
       .00      3.76     10.18      3.89      .080      .060      .080      .000   1499.50   9804.72
   .019844      10.       10.       10.         0        13         0       .00    146.92  10037.00

*SECNO 1.525

3265 DIVIDED FLOW

                Section 3 of 3 for SLOPE-AREA METHOD (Normal Depth Calculation)
                Left overbank is non effective flow area:  Hard coded GR's
                          from STA 9804.9 to 9826.6 @ EL 1505
     1.525      5.16   1504.86   1504.31       .00   1506.42      1.56       .20       .00   1500.20
    4134.0    105.3    3977.5      51.2      27.9     390.5      13.2        .2        .1   1499.90
       .00      3.78     10.19      3.89      .080      .060      .080      .000   1499.70   9804.72
   .019880      10.       10.       10.         0        10         0       .00    146.53  10037.00

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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

1490 NH CARD USED
*SECNO 1.527

3265 DIVIDED FLOW

                Left overbank is non effective flow area:  Hard coded GR's
                          from STA 9804.9 to 9826.6 @ EL 1505
                STREAM DISTANCE IN MILES ABOVE CONFLUENCE WITH VERDE RIVER.
     1.527      5.16   1505.06   1504.41       .00   1506.62      1.56       .20       .00   1500.40
    4134.0    105.1    3977.7      51.2      27.7     390.4      13.1        .3        .1   1500.10
       .00      3.79     10.19      3.89      .080      .060      .080      .000   1499.90   9804.73
   .019912      10.       10.       10.         0        13         0       .00    146.20  10036.99
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1490 NH CARD USED
*SECNO 1.577

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.40

     1.577      6.51   1509.71   1508.07       .00   1510.45       .74      3.75       .08   1504.30
    4134.0    1613.0    1940.3     580.7     298.5     231.1     121.2       3.7       1.0   1504.50
       .01      5.40      8.40      4.79      .080      .060      .080      .000   1503.20   9916.25
   .010136      320.      259.      250.         2        11         0       .00    135.79  10052.04


1490 NH CARD USED
*SECNO 1.602

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .63

     1.602      4.45   1511.35   1511.03       .00   1512.72      1.37      2.08       .19   1507.80
    4134.0      57.7    4023.7      52.6      14.1     423.8      13.5       5.5       1.4   1508.10
       .02      4.08      9.50      3.90      .080      .060      .080      .000   1506.90   9943.66
   .025327      135.      136.      150.         2        14         0       .00    129.53  10073.18


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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


1490 NH CARD USED
*SECNO 1.636

3301 HV CHANGED MORE THAN HVINS

                Channel has been filled.  GR Data Surveyed By ALS.
     1.636      5.68   1516.28   1515.81       .00   1517.14       .86      4.36       .05   1518.85
    4134.0        .0    2061.7    2072.3        .0     230.8     372.7       7.6       2.1   1512.85
       .02       .00      8.93      5.56      .000      .067      .080      .000   1510.60  10004.01
   .023227      170.      180.      180.         2        11         0       .00    189.38  10193.39


1490 NH CARD USED
*SECNO 1.686

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.40

                Channel has been filled.  GR Data Surveyed By ALS.
     1.686      8.46   1520.57   1519.81       .00   1521.28       .71      4.13       .02   1516.21
    4134.0    1567.8    2215.7     350.6     364.6     265.2      99.9      11.5       3.3   1518.11
       .03      4.30      8.36      3.51      .080      .060      .080      .000   1512.11   9869.67
   .011797      250.      263.      250.         3        11         0       .00    213.71  10083.38


1490 NH CARD USED
*SECNO 1.727
          HEC-1 Concentration Point C626:  24-Hr storm controls.
     1.727      4.66   1523.86   1523.32       .00   1524.68       .81      3.36       .03   1520.60
    4127.0    2690.8    1406.7      29.5     453.7     151.8       8.3      14.7       4.3   1520.60
       .04      5.93      9.27      3.54      .080      .060      .080      .000   1519.20   9880.23
   .023823      200.      214.      220.         2        11         0       .00    201.18  10081.41


1490 NH CARD USED
*SECNO 1.855

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.43

     1.855      7.62   1535.02   1534.00       .00   1535.69       .67     11.00       .01   1532.20
    4127.0     111.5    2115.4    1900.1      36.7     261.2     421.4      25.2       7.4   1531.50
       .07      3.04      8.10      4.51      .080      .060      .080      .000   1527.40   9964.26
   .011592      680.      677.      700.         5        14         0       .00    198.40  10162.66


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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
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    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

1490 NH CARD USED
*SECNO 1.980

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .66

               START Hydraulically Similar Reach AS2
               See Exhibit 1, Manning's n Value Map.
     1.980      5.94   1546.34   1544.71       .00   1546.78       .44      11.07       .02   1543.00
    4127.0     638.3    3439.1      49.5     147.5     620.8      16.7       36.5      10.4   1542.50
       .11      4.33      5.54      2.96      .113      .123      .120       .000   1540.40   9925.29
   .026935      660.      659.      640.         3        11         0        .00    196.03  10121.32

1490 NH CARD USED
*SECNO 2.071

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.41

     2.071      8.24   1555.44   1552.83       .00   1555.75       .31       8.95       .01   1551.60
    4127.0      52.2    3541.5     533.3      22.8     763.2     154.0       46.0      12.5   1551.40
       .14      2.29      4.64      3.46      .113      .118      .120       .000   1547.20   9937.03
   .013634      490.      480.      475.         3        12         0        .00    194.54  10131.57

1490 NH CARD USED
*SECNO 2.095
          HEC-1 Concentration Point C549:  24-Hr storm controls.
               BALBOA WASH Tributary
     2.095      5.84   1557.74   1556.02       .00   1558.16       .41       2.38       .03   1554.10
    4068.0     227.5    1986.7    1853.8      67.2     359.6     378.0       48.7      13.2   1553.60
       .14      3.39      5.52      4.90      .113      .122      .120       .000   1551.90   9884.37
   .025169      120.      129.      140.         2         8         0        .00    226.63  10111.00

1490 NH CARD USED
*SECNO 2.200
3280 CROSS SECTION      2.20 EXTENDED       .22 FEET

          HEC-1 Concentration Point C549R:  24-Hr storm controls.
     2.200      5.82   1565.72   1562.93       .00   1565.88       .15       7.69       .03   1560.80
    3132.0    1739.9    1211.8     180.3     552.7     368.7      92.1       60.0      16.2   1559.90
       .19      3.15      3.29      1.96      .113      .125      .120       .000   1559.90   9823.44
   .008110      570.      553.      490.         5        11         0        .00    265.06  10088.50

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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

1490 NH CARD USED
*SECNO 2.279
     2.279      4.76   1569.86   1567.72       .00   1570.07       .21       4.17       .02   1566.00
    3132.0    1129.4    1989.0      13.6     307.9     535.3       7.9       68.5      18.4   1567.00
       .22      3.67      3.72      1.71      .113      .125      .120       .000   1565.10   9837.87
   .013946      380.      416.      430.         3        14         0        .00    216.47  10054.34

1490 NH CARD USED
*SECNO 2.304
     2.304      6.03   1571.33   1568.48       .00   1571.49       .16       1.42       .00   1566.30
    3132.0      55.0    2654.4     422.6      26.2     797.2     154.4       71.3      19.0   1567.30
       .23      2.10      3.33      2.74      .113      .122      .120       .000   1565.30   9854.28
   .008601      115.      134.      150.         0        19         0        .00    210.96  10065.24

1490 NH CARD USED
*SECNO 2.382

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .67

          HEC-1 Concentration Point C622:  24-Hr storm controls.
         CULVERT  622:  ASHBROOK WASH and SAGUARO BOULEVARD
            Culvert 622      Downstream: expanded flow. (SECTION 1 OF SC ROUTINE)
     2.382      5.02   1576.22   1574.35       .00   1576.50       .28       4.97       .03   1573.20
    3097.0    1152.4    1535.1     409.5     276.9     349.0     108.3       79.3      20.9   1572.50
       .26      4.16      4.40      3.78      .113      .125      .120       .000   1571.20   9876.40
   .018611      405.      410.      405.         2        11         0        .00    191.03  10067.42

CCHV=      .300 CEHV=      .500
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1490 NH CARD USED
*SECNO 2.405
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
            Culvert 622  Outlet.  3-60" CMP's          (SECTION 2 OF SC ROUTINE)
              Photogrammetric x-sec. located 28' Downstream. (No Elev. Adjust.)
               Base Channel Elevations were  raised to Culvert Invert EL  1574.0
     2.405      7.98   1581.98   1581.98       .00   1582.21       .23      1.35       .01   1574.00
    3097.0    1086.5     627.2    1383.3     283.0     154.8     368.8      81.5      21.4   1574.00
       .27      3.84      4.05      3.75      .116      .125      .121      .000   1574.00   9946.33
   .007278      115.      123.      130.         0        23         0       .00    125.23  10071.55


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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


SPECIAL CULVERT

SC  CUNO      CUNV      ENTLC     COFQ      RDLEN     RISE      SPAN      CULVLN    CHRT      SCL       ELCHU     ELCHD
     3         .024      .90      2.63       .00      5.00       .00    121.00      2         3      1575.82   1574.01

CHART  2 - CORRUGATED METAL PIPE CULVERT
SCALE  3 - PIPE PROJECTING FROM FILL

5130, EGIC= 1731.35..MAY BE TOO LARGE IF INLET CONTROLS.
5135, EGOC= 1728.33 ..MAY BE TOO LARGE IF OUTLET CONTROLS.
1490 NH CARD USED
*SECNO 2.428

SPECIAL CULVERT INLET CONTROL + WEIR FLOW, EG =   1587.36

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.44

SPECIAL CULVERT

     EGIC      EGOC        H4     QWEIR     QCULV       VCH     ACULV     ELTRD    WEIRLN
   1731.35   1728.33      5.15     2340.      746.     3.568      58.9   1584.12      309.


            Culvert 622  Inlet.   3-60" CMP's          (SECTION 3 OF SC ROUTINE)
              Photogrammetric x-sec. located 10' Upstream. (No Elev. Adjust.)
               Base Channel Elevations were lowered to Culvert Invert EL 1575.82
            Culvert 622 BT information surveyed by ALS. West top of curb.
            Culvert 622 BT information coded per figure 3.16 (HEC-2, Sept 90)
            Right overbank is non effective flow area:  Hard coded GR's
                from STA 10194.7 to STA 10308.4 @ EL 1587.6
     2.428      11.45   1587.25       .00       .00   1587.36       .12      5.15       .00   1575.82
    3097.0    1362.6     701.7    1032.7     578.4     196.7     400.6      84.3      22.0   1575.82
       .28      2.36      3.57      2.58      .122      .125      .124      .000   1575.80   9824.05
   .003497      121.      121.      121.         2         0         0       .00    303.78  10127.83


CCHV=     .100 CEHV=     .300
1490 NH CARD USED
*SECNO 2.448

3265 DIVIDED FLOW

3280 CROSS SECTION      2.45 EXTENDED       .30 FEET

            Culvert 622     Upstream:  expanded flow.  (SECTION 4 OF SC ROUTINE)
                LEGEND WASH Tributary
     2.448       8.80   1587.60   1582.56       .00   1587.67       .07       .30       .00   1580.70
    3097.0    1443.4     857.1     796.5     643.3     386.3     446.5      87.5      22.7   1581.40
       .30      2.24      2.22      1.78      .113      .125      .120      .000   1578.80   9884.00
   .002311      105.      105.      110.         2        26         0       .00    314.04  10256.50


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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


1490 NH CARD USED
*SECNO 2.494
         HEC-1 Concentration Point C622R:  24-hr storm controls.
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                 START Hydraulically Similar Reach AS3
                 See Exhibit 1, Manning's n Value Map.
          CULVERT  M7 :  ASHBROOK WASH and BAYFIELD DRIVE
             Culvert M7      Downstream: expanded flow. (SECTION 1 OF SC ROUTINE)
     2.494      6.77   1587.97   1585.33       .00   1588.34       .37       .58       .09   1583.00
    2618.0     316.0    2278.8      23.1     162.4     439.5      21.0      93.4      23.9   1584.00
       .31      1.95      5.19      1.10      .100      .045      .100      .000   1581.20   9933.53
   .002419      260.      246.      220.         2        14         0       .00    127.63  10061.16


CCHV=     .300 CEHV=     .500
1490 NH CARD USED
*SECNO 2.529
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
             Culvert M7   Outlet.  3-60" CMP's          (SECTION 2 OF SC ROUTINE)
               Photogrammetric x-sec. located 12' Downstream. (No Elev. Adjust.)
     2.529      6.84   1589.99   1589.99       .00   1590.49       .50       .52       .07   1583.25
    2618.0     848.9     857.1     912.0     192.7     125.1     164.4      95.7      24.4   1583.15
       .32      4.41      6.85      5.55      .058      .045      .048      .000   1583.15   9949.12
   .003412      195.      181.      170.         0        16         0       .00     94.69  10043.81


SPECIAL CULVERT

SC  CUNO      CUNV      ENTLC     COFQ      RDLEN     RISE      SPAN      CULVLN    CHRT      SCL       ELCHU     ELCHD
     3         .024       .90      2.63       .00      5.00       .00     84.00      2         3       1584.98   1584.71

CHART  2 - CORRUGATED METAL PIPE CULVERT
SCALE  3 - PIPE PROJECTING FROM FILL

5130, EGIC= 1696.91..MAY BE TOO LARGE IF INLET CONTROLS.
5135, EGOC= 1680.41 ..MAY BE TOO LARGE IF OUTLET CONTROLS.
1490 NH CARD USED
*SECNO 2.545

SPECIAL CULVERT INLET CONTROL + WEIR FLOW, EG =   1596.07

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.45

SPECIAL CULVERT

     EGIC      EGOC        H4     QWEIR     QCULV       VCH     ACULV     ELTRD    WEIRLN
   1696.91   1680.41      5.58     1909.      726.     6.468      58.9   1592.50      147.


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                 Right bank is non effective flow area:  Hard coded GR's
                          from STA 10072.3 to 10248.3 @ EL 1600
             Culvert M7    Inlet.   3-60"   CMP's       (SECTION 3 OF SC ROUTINE)
               Photogrammetric x-sec. located 12' Upstream. (No Elev. Adjust.)
                Base Channel Elevations were lowered to Culvert Invert EL 1584.98
             Culvert M7  BT information Surveyed by ALS. North top of curb.
             Culvert M7  BT information coded per figure 3.16 (HEC-2, Sept 90)
     2.545     10.70   1595.68       .00       .00   1596.07       .39      5.58       .00   1584.98
    2618.0     544.0     976.3    1097.7     235.3     150.9     244.5      96.8      24.6   1584.98
       .32      2.31      6.47      4.49      .072      .045      .043      .000   1584.98   9915.83
   .001625       84.       84.       84.         2         0         0       .00    141.43  10057.26


FLOW DISTRIBUTION FOR SECNO=      2.55          CWSEL=   1595.68

STA=    9916.    9975.    9987.    9994.   10008.   10015.   10031.   10048.   10057.
  PER Q=      4.8      5.4     10.6     37.3     13.2      7.9      3.7     17.1
   AREA=    107.0     73.0     55.3    150.9     66.0     99.8     66.2     12.6
    VEL=      1.2      1.9      5.0      6.5      5.3      2.1      1.5     35.5
  DEPTH=      1.8      5.9      8.6     10.7      8.8      6.4      3.9      1.3

CCHV=     .100 CEHV=     .300
1490 NH CARD USED
*SECNO 2.558
3280 CROSS SECTION      2.56 EXTENDED       .58 FEET

             Culvert M7      Upstream:  expanded flow.  (SECTION 4 OF SC ROUTINE)
     2.558      8.98   1595.98   1591.90       .00   1596.21       .23       .12       .02   1588.50
    2618.0     895.3     997.3     725.4     414.1     175.9     414.0      98.1      24.9   1588.40
       .33      2.16      5.67      1.75      .100      .045      .100      .000   1587.00   9897.04
   .001759       70.       71.       70.         2        14         0       .00    242.36  10139.40


1490 NH CARD USED
*SECNO 2.670

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .23
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     2.670      5.82   1598.42   1597.32       .00   1599.09       .68      2.75       .13   1595.00
    2618.0     451.9    2166.1        .0      81.9     318.6        .0     107.7      27.4   1599.00
       .35      5.52      6.80       .00      .100      .097      .000      .000   1592.60   9929.52
   .033467      575.      594.      610.         3        11         0       .00    113.54  10043.06


1490 NH CARD USED
*SECNO 2.785
1
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.92

            Left overbank is non effective flow area:  Hard coded GR's
                from STA 9927.3 to 9946.4 @ EL 1607.5
     2.785      7.24   1607.64   1606.68       .00   1608.75      1.11      9.52       .13   1602.60
    2618.0     223.4    1555.8     838.8      72.0     147.6     221.9     113.5      29.0   1601.70
       .38      3.10     10.54      3.78      .100      .045      .100      .000   1600.40   9926.69
   .009048      610.      607.      610.         4         8         0       .00    124.13  10050.81


1490 NH CARD USED
*SECNO 2.807

3301 HV CHANGED MORE THAN HVINS

     2.807      6.99   1609.29   1606.69       .00   1609.63       .34       .80       .08   1604.40
    2618.0    1086.6    1478.8      52.6     333.3     268.4      29.6     115.0      29.4   1606.00
       .38      3.26      5.51      1.78      .100      .064      .100      .000   1602.30   9930.45
   .005631      115.      112.      120.         2        14         0       .00    133.97  10064.42


1490 NH CARD USED
*SECNO 2.899

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .44

     2.899      4.27   1613.87   1613.72       .00   1615.25      1.38      5.31       .31   1611.00
    2618.0      79.2    1793.3     745.5      22.0     166.9     130.4     120.3      30.7   1610.60
       .40      3.60     10.75      5.72      .100      .055      .100      .000   1609.60   9976.36
   .029178      485.      489.      490.         1        11         0       .00    102.58  10078.94


1490 NH CARD USED
*SECNO 3.008

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.76

     3.008      5.49   1623.29   1622.39       .00   1624.18       .89      8.87       .05   1621.10
    2618.0      12.0    2163.7     442.3       8.1     264.4     138.8     125.2      32.2   1620.50
       .42      1.49     8.18      3.19      .100      .046      .100      .000   1617.80   9955.31
   .009405      575.      574.      600.         4         8         0       .00    115.55  10070.87


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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


1490 NH CARD USED
*SECNO 3.121

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
                ARROW WASH Tributary
     3.121      7.01   1632.81   1632.81       .00   1634.61      1.80      7.07       .27   1628.90
    2618.0     557.1    1919.5     141.4     141.7     155.4      46.3     130.3      33.7   1629.30
       .44      3.93     12.35      3.05      .100      .045      .100      .000   1625.80   9938.41
   .015521      565.      598.      600.         0        11         0       .00    105.09  10043.50
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1490 NH CARD USED
*SECNO 3.208
          HEC-1 Concentration Point C621:  24-hr storm controls
     3.208      4.92   1640.82   1640.71       .00   1642.29      1.48      7.65       .03   1638.20
    2491.0      70.9    2417.1       2.9      27.8     244.5       2.1     133.1      34.5   1639.70
       .45      2.55      9.89      1.41      .100      .050      .100      .000   1635.90   9958.77
   .020840      260.      456.      335.         2        19         0       .00     95.53  10054.30


1490 NH CARD USED
*SECNO 3.241
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
     3.241      5.27   1646.17   1646.17       .00   1647.89      1.72      3.13       .07   1641.40
    2491.0     131.1    2077.2     282.7      43.0     181.6      78.4     134.3      34.9   1641.90
       .45      3.05     11.44      3.60      .100      .045      .100      .000   1640.90   9953.03
   .015197      175.      177.      175.         0         8         0       .00    118.63  10071.66


1490 NH CARD USED
*SECNO 3.323

3301 HV CHANGED MORE THAN HVINS

          HEC-1 Concentration Point C613:  24-hr storm controls.
     3.323      5.07   1654.87   1653.51       .00   1655.32       .44      7.30       .13   1654.50
    2160.0        .3    1034.5    1125.1        .5     176.5     233.4     137.8      36.1   1652.00
       .48       .67      5.86      4.82      .100      .081      .100      .000   1649.80   9984.05
   .019153      420.      430.      440.         4        19         0       .00    118.39  10102.44
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


1490 NH CARD USED
*SECNO 3.421

3301 HV CHANGED MORE THAN HVINS

     3.421      4.30   1664.30   1663.83       .00   1665.37      1.07      9.87       .19   1662.40
    2160.0       8.8    1756.3     394.9       4.6     195.4      96.9     142.0      37.4   1661.00
       .49      1.90      8.99      4.08      .100      .056      .100      .000   1660.00   9972.94
   .019268      510.      518.      505.         4        15         0       .00     93.56  10066.51


1490 NH CARD USED
*SECNO 3.487
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
          HEC-1 Concentration Point C608:  24-Hr storm controls.
         CULVERT  608:  ASHBROOK WASH and HAMPSTEAD DRIVE
            Culvert 608     Downstream: expanded flow. (SECTION 1 OF SC ROUTINE)
     3.487      4.46   1671.06   1671.06       .00   1672.56      1.50      6.03       .13   1668.00
    2154.0      62.0    1930.1     162.0      23.1     186.3      64.4     144.3      38.1   1668.60
       .50      2.68     10.36      2.52      .100      .045      .100      .000   1666.60   9959.30
   .015514      350.      352.      340.         0         8         0       .00    103.81  10063.12


CCHV=     .300 CEHV=     .500
1490 NH CARD USED
*SECNO 3.519

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1678.50 ELREA=      1678.50

            Culvert 608  Outlet.   3-10'x 7' Box       (SECTION 2 OF SC ROUTINE)
              Photogrammetric x-sec. located 24.4' Downstream. (No Elev. Adjust.
     3.519      5.75   1676.35   1676.35       .00   1679.19      2.84      2.72       .67   1670.80
    2154.0        .0    2154.0        .0        .0     159.3        .0     145.1      38.4   1670.60
       .51       .00     13.52       .00      .000      .045      .000      .000   1670.60   9988.70
   .016817      170.      168.      170.         0        11         0       .00     28.40  10017.10
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
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    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


SPECIAL CULVERT

SC  CUNO      CUNV      ENTLC     COFQ      RDLEN     RISE      SPAN      CULVLN    CHRT      SCL       ELCHU     ELCHD
     3         .013      .50       2.63      .00       7.00      10.00     61.50     8         1       1673.19   1672.71

CHART  8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL
SCALE  1 - WINGWALLS FLARED 30 TO 75 DEGREES

1490 NH CARD USED
*SECNO 3.531

SPECIAL CULVERT INLET CONTROL + WEIR FLOW, EG =   1682.23

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  5.03

SPECIAL CULVERT

     EGIC      EGOC       H4      QWEIR     QCULV      VCH      ACULV     ELTRD    WEIRLN
   1682.85   1682.69     3.04      104.     2049.     3.832     210.0   1681.95     156.


           Culvert 608  Inlet.    3-10'x7'  Box       (SECTION 3 OF SC ROUTINE)
             Photogrammetric x-sec. located 10' Upstream. (No Elev. Adjust.)
           Culvert 608 BT information Surveyed by ALS. West top of curb.
     3.531     10.39   1682.09       .00       .00   1682.23       .14      3.04       .00   1673.10
    2154.0     594.4    1217.4     342.2     606.2     317.7     362.8     146.1      38.7   1671.70
       .51       .98      3.83       .94      .100      .045      .100      .000   1671.70   9811.45
   .000665       62.       62.       62.         2         0         0       .00    355.93  10167.38


CCHV=     .100 CEHV=     .300
1490 NH CARD USED
*SECNO 3.544
           Culvert 608     Upstream:  expanded flow.  (SECTION 4 OF SC ROUTINE)
     3.544      8.54   1682.24   1676.88       .00   1682.28       .04       .04       .01   1676.90
    2154.0     573.3    1495.8      84.8     686.6     826.5      93.4     148.6      39.2   1676.70
       .53       .84      1.81       .91      .100      .069      .100      .000   1673.70   9768.56
   .000461       75.       71.       75.         2        17         0       .00    308.86  10077.42


1490 NH CARD USED
*SECNO 3.621

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3720 CRITICAL DEPTH ASSUMED
                START Hydraulically Similar Reach AS4
                See Exhibit 1, Manning's n Value Map.
     3.621      4.98   1683.28   1683.28       .00   1684.60      1.32       .56       .38   1681.90
    2154.0      19.0    2097.7      37.3       6.5     225.9       5.8     157.0      41.1   1681.90
       .54      2.94      9.29      6.45      .055      .045      .025      .000   1678.30   9946.03
   .019622      390.      403.      390.         0        14         0       .00     96.53  10042.56


1490 NH CARD USED
*SECNO 3.701
     3.701      5.41   1690.21   1689.85       .00   1691.24      1.04      6.61       .03   1687.90
    2154.0      87.7    2028.8      37.5      21.5     243.8       5.6     159.4      42.0   1688.10
       .55      4.08      8.32      6.65      .055      .045      .025      .000   1684.80   9973.85
   .012876      385.      422.      420.         4         5         0       .00     94.20  10068.05


1490 NH CARD USED
*SECNO 3.764

3265 DIVIDED FLOW

     3.764      4.74   1694.44   1694.14       .00   1695.45      1.01      4.21       .00   1691.80
    2154.0     283.0    1699.6     171.5      44.5     199.7      31.8     161.5      42.7   1692.70
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      .57      6.36      8.51      5.39      .047      .045      .040      .000   1689.70   9950.58
  .012487      330.      333.      315.         3        15         0       .00    102.21  10058.85

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T1   *  FOUNTAIN HILLS ADMP                              File:  EX-AS.IH2
T2   *  Project No. 63                                     By:  ccc
T3   *  Ex Cond/With Dam
T4   *  Extracted from the original Ftn Hills FDS model w/ following changes:
T4   *    (a) The discharge values are changed to reflect discharges
T5   *         for the existing condition with or without Dam 4.
T6   *    (b) Cross-sections above Dam 4 are removed.
T7   *  NOTES:
T9   *    (a) Sources of 100-yr discharge for the existing condition:
T9   *    (b) Runs are for the existing with or without Dam 4.

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0        4         0         0      0.02         0         0         0   1503.75

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     15         0        -1         0         0         0        -1         0         0         0

1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*PROF 2

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV=     .100 CEHV=     .300
*SECNO 1.521
          HEC-1 Concentration Point C627:  24-Hr storm controls.
                START Similar Hydraulic Reach  AS1
                See Exhibit 1, Manning's n Value Map.
                Section 1 of 3 for SLOPE-AREA METHOD (Normal Depth Calculation)
                Left overbank is non effective flow area:  Hard coded GR's
                          from STA 9804.9 to 9826.6 @ EL 1505
     1.521      4.45   1503.75   1503.15   1503.75   1505.04      1.29       .00       .00   1499.80
    3187.0      65.9    3087.1      34.0      17.0     334.4       9.6        .0        .0   1499.50
       .00      3.89      9.23      3.53      .080      .060      .080      .000   1499.30   9944.71
   .020082        0.        0.        0.         0        10         0       .00     91.52  10036.23

*SECNO 1.523
                Section 2 of 3 for SLOPE-AREA METHOD (Normal Depth Calculation)
                Left overbank is non effective flow area:  Hard coded GR's
                          from STA 9804.9 to 9826.6 @ EL 1505
     1.523      4.45   1503.95   1503.35       .00   1505.24      1.29       .20       .00   1500.00
    3187.0      65.9    3087.1      34.0      17.0     334.5       9.6        .1        .0   1499.70
       .00      3.89      9.23      3.53      .080      .060      .080      .000   1499.50   9944.71
   .020068       10.       10.       10.         0        11         0       .00     91.52  10036.23

*SECNO 1.525
                Section 3 of 3 for SLOPE-AREA METHOD (Normal Depth Calculation)
                Left overbank is non effective flow area:  Hard coded GR's
                          from STA 9804.9 to 9826.6 @ EL 1505
     1.525      4.45   1504.15   1503.55       .00   1505.44      1.29       .20       .00   1500.20
    3187.0      65.9    3087.1      34.0      17.0     334.6       9.6        .2        .0   1499.90
       .00      3.89      9.23      3.52      .080      .060      .080      .000   1499.70   9944.71
   .020051       10.       10.       10.         0        11         0       .00     91.53  10036.24

1490 NH CARD USED
*SECNO 1.527
                Left overbank is non effective flow area:  Hard coded GR's
                          from STA 9804.9 to 9826.6 @ EL 1505
                STREAM DISTANCE IN MILES ABOVE CONFLUENCE WITH VERDE RIVER.
1
   17OCT96      17:05:49                                                                          PAGE   29

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST
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     1.527      4.45   1504.35   1503.75       .00   1505.64       1.29       .20       .00   1500.40
    3187.0      66.0    3087.0      34.0      17.0     334.7        9.6        .2        .1   1500.10
       .00      3.88      9.22      3.52      .080      .060       .080      .000   1499.90   9944.71
   .020029       10.       10.       10.         0        11          0       .00     91.53  10036.24


1490 NH CARD USED
*SECNO 1.577

3301 HV CHANGED MORE THAN HVINS

     1.577      5.68   1508.88   1507.50       .00   1509.52        .64      3.82       .06   1504.30
    3187.0    1213.5    1559.2     414.3     244.5     200.8       96.3       3.1        .8   1504.50
       .01      4.96      7.76      4.30      .080      .060       .080      .000   1503.20   9918.35
   .010457      320.      259.      250.         2         8          0       .00    132.15  10050.49


1490 NH CARD USED
*SECNO 1.602

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .60

     1.602      3.81   1510.71   1510.49       .00   1511.92       1.21      2.22       .17   1507.80
    3187.0      36.0    3120.0      31.0       9.5     350.7        8.7       4.5       1.2   1508.10
       .02      3.80      8.90      3.58      .080      .060       .080      .000   1506.90   9945.10
   .028625      135.      136.      150.         2        14          0       .00    126.44  10071.54


1490 NH CARD USED
*SECNO 1.636
                Channel has been filled.  GR Data Surveyed By ALS.
     1.636      5.18   1515.78   1515.43       .00   1516.54        .76      4.57       .05   1518.85
    3187.0        .0    1720.8    1466.2        .0     204.9      304.0       6.4       1.8   1512.85
       .02       .00      8.40      4.82      .000      .067       .080      .000   1510.60  10005.70
   .022710      170.      180.      180.         3        11          0       .00    186.51  10192.21


1490 NH CARD USED
*SECNO 1.686
                Channel has been filled.  GR Data Surveyed By ALS.
1
   17OCT96      17:05:49                                                                          PAGE   30

    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


     1.686      7.89   1520.00   1519.36       .00   1520.63        .63      4.08       .01   1516.21
    3187.0    1115.2    1846.5     225.3     296.4     238.3       74.4       9.6       3.0   1518.11
       .04      3.76      7.75      3.03      .080      .060       .080      .000   1512.11   9871.80
   .011703      250.      263.      250.         3        11          0       .00    207.72  10079.52


1490 NH CARD USED
*SECNO 1.727

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .69

          HEC-1 Concentration Point C626:  24-Hr storm controls.
     1.727      4.16   1523.36   1522.90       .00   1524.06        .70      3.41       .02   1520.60
    3180.0    2026.9    1133.8      19.3     376.0     131.8        6.0      12.3       3.9   1520.60
       .05      5.39      8.60      3.23      .080      .060       .080      .000   1519.20   9881.69
   .024779      200.      214.      220.         2        14          0       .00    198.94  10080.62


1490 NH CARD USED
*SECNO 1.855

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.49

     1.855      7.05   1534.45   1533.55       .00   1535.02        .57     10.95       .01   1532.20
    3180.0      64.0    1732.4    1383.6      24.9     234.0      350.0      21.1       7.0   1531.50
       .08      2.57      7.40      3.95      .080      .060       .080      .000   1527.40   9967.78
   .011217      680.      677.      700.         5        14          0       .00    193.11  10160.89


1490 NH CARD USED
*SECNO 1.980

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .63

                START Hydraulically Similar Reach AS2
                See Exhibit 1, Manning's n Value Map.
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     1.980      5.28   1545.68   1544.28       .00   1546.06       .38     11.02       .02   1543.00
    3180.0     423.9    2725.5      30.6     112.3     533.4      11.5      30.6       9.9   1542.50
       .12      3.78      5.11      2.66      .113      .123      .120      .000   1540.40   9927.73
   .027958      660.      659.      640.         4        11         0       .00    192.09  10119.82


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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


1490 NH CARD USED
*SECNO 2.071

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.46

     2.071      7.52   1554.72   1552.43       .00   1554.97       .25      8.90       .01   1551.60
    3180.0      29.5    2782.1     368.4      15.0     665.9     122.3      38.7      12.0   1551.40
       .15      1.96      4.18      3.01      .113      .118      .120      .000   1547.20   9939.25
   .013159      490.      480.      475.         4         6         0       .00    186.50  10125.75


1490 NH CARD USED
*SECNO 2.095

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .68

          HEC-1 Concentration Point C549:  24-Hr storm controls.
                BALBOA WASH Tributary
     2.095      5.14   1557.04   1555.57       .00   1557.40       .36      2.39       .03   1554.10
    3095.0     126.8    1582.0    1386.2      41.6     306.7     302.9      40.9      12.6   1553.60
       .16      3.05      5.16      4.58      .113      .121      .120      .000   1551.90   9894.25
   .027069      120.      129.      140.         2        11         0       .00    206.68  10100.92


1490 NH CARD USED
*SECNO 2.200
          HEC-1 Concentration Point C549R:  24-Hr storm controls.
     2.200      5.01   1564.91   1562.48       .00   1565.02       .11      7.60       .03   1560.80
    2112.0    1158.0     860.4      93.6     447.5     313.3      49.7      50.0      15.3   1559.90
       .21      2.59      2.75      1.88      .113      .125      .120      .000   1559.90   9827.07
   .007031      570.      553.      490.         5         8         0       .00    227.75  10054.82


1490 NH CARD USED
*SECNO 2.279

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .67

     2.279      3.80   1568.90   1567.27       .00   1569.06       .17      4.03       .02   1566.00
    2112.0     724.3    1382.9       4.8     226.0     416.3       3.5      56.7      17.3   1567.00
       .25      3.21      3.32      1.38      .113      .125      .120      .000   1565.10   9840.31
   .015581      380.      416.      430.         3        18         0       .00    212.17  10052.49


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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


1490 NH CARD USED
*SECNO 2.304
     2.304      5.09   1570.39   1568.00       .00   1570.50       .12      1.43       .01   1566.30
    2112.0      30.7    1828.7     252.6      17.4     651.0     114.1      58.8      17.9   1567.30
       .26      1.77      2.81      2.21      .113      .122      .120      .000   1565.30   9856.21
   .008018      115.      134.      150.         1        19         0       .00    207.38  10063.59


1490 NH CARD USED
*SECNO 2.382

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .61

          HEC-1 Concentration Point C622:  24-Hr storm controls.
         CULVERT  622:  ASHBROOK WASH and SAGUARO BOULEVARD
           Culvert 622      Downstream: expanded flow. (SECTION 1 OF SC ROUTINE)
     2.382      4.06   1575.26   1573.86       .00   1575.48       .22      4.94       .03   1573.20
    2053.0     722.8    1078.3     251.9     201.1     273.6      76.7      65.1      19.8   1572.50
       .29      3.59      3.94      3.29      .113      .125      .120      .000   1571.20   9878.25
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   .020680      405.      410.      405.        2        11         0       .00    187.11  10065.36

CCHV=     .300 CEHV=     .500
1490 NH CARD USED
*SECNO 2.405

3235 SLOPE TOO STEEP, EXCEEDS        .10


3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1581.98 ELREA=      1581.98

            Culvert 622  Outlet.  3-60" CMP's          (SECTION 2 OF SC ROUTINE)
              Photogrammetric x-sec. located 28' Downstream. (No Elev. Adjust.)
               Base Channel Elevations were  raised to Culvert Invert EL  1574.0
     2.405      7.01   1581.01   1581.01       .00   1584.55      3.54      5.05      1.66   1574.00
    2053.0        .0    2053.0       .0        .0     135.9        .0      66.1      20.1   1574.00
       .29       .00     15.10       .00      .000      .125      .000      .000   1574.00   9992.30
   .120386      115.      123.      130.         0        14         0       .00     19.40  10011.70


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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


SPECIAL CULVERT

SC  CUNO      CUNV      ENTLC     COFQ      RDLEN     RISE      SPAN      CULVLN    CHRT      SCL       ELCHU     ELCHD
     3         .024      .90      2.63       .00      5.00       .00    121.00      2         3      1575.82   1574.01

CHART  2 - CORRUGATED METAL PIPE CULVERT
SCALE  3 - PIPE PROJECTING FROM FILL

5130, EGIC= 1645.66..MAY BE TOO LARGE IF INLET CONTROLS.
5135, EGOC= 1645.32 ..MAY BE TOO LARGE IF OUTLET CONTROLS.
1490 NH CARD USED
*SECNO 2.428

SPECIAL CULVERT INLET CONTROL + WEIR FLOW, EG =   1586.64

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  7.46

SPECIAL CULVERT

     EGIC      EGOC        H4     QWEIR     QCULV       VCH     ACULV     ELTRD    WEIRLN
   1645.66   1645.32      2.09     1358.      716.     2.696      58.9   1584.12      248.


            Culvert 622  Inlet.   3-60" CMP's          (SECTION 3 OF SC ROUTINE)
              Photogrammetric x-sec. located 10' Upstream. (No Elev. Adjust.)
               Base Channel Elevations were lowered to Culvert Invert EL 1575.82
            Culvert 622 BT information surveyed by ALS. West top of curb.
            Culvert 622 BT information coded per figure 3.16 (HEC-2, Sept 90)
            Right overbank is non effective flow area:  Hard coded GR's
                from STA 10194.7 to STA 10308.4 @ EL 1587.6
     2.428     10.77   1586.57       .00       .00   1586.64       .07      2.09       .00   1575.82
    2053.0     870.2     498.7     684.0     470.8     185.0     331.0      67.6      20.4   1575.82
       .31      1.85      2.70      2.07      .123      .125      .124      .000   1575.80   9851.99
   .002165      121.      121.      121.         2         0         0       .00    240.41  10092.39


CCHV=     .100 CEHV=     .300
1490 NH CARD USED
*SECNO 2.448
            Culvert 622     Upstream:  expanded flow.  (SECTION 4 OF SC ROUTINE)
                LEGEND WASH Tributary
     2.448      8.00   1586.80   1582.07       .00   1586.84       .04       .19       .00   1580.70
    2053.0     962.8     586.9     503.3     562.2     346.0     341.8      70.3      21.0   1581.40
       .33      1.71      1.70      1.47      .113      .125      .120      .000   1578.80   9887.17
   .001564      105.      105.      110.         3        17         0       .00    233.01  10120.18


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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


1490 NH CARD USED
*SECNO 2.494
          HEC-1 Concentration Point C622R:  24-hr storm controls.
                START Hydraulically Similar Reach AS3
                See Exhibit 1, Manning's n Value Map.
         CULVERT  M7 :  ASHBROOK WASH and BAYFIELD DRIVE
            Culvert M7      Downstream: expanded flow. (SECTION 1 OF SC ROUTINE)
     2.494       5.87   1587.07   1584.32       .00   1587.22       .15       .35       .03   1583.00
    1384.0      155.4    1220.3       8.3     127.4     370.5      12.5      75.3      22.0   1584.00
       .35       1.22      3.29       .66      .100      .045      .100      .000   1581.20   9936.27
   .001226       260.      246.      220.         2        18         0       .00    122.50  10058.77


CCHV=     .300 CEHV=     .500
1490 NH CARD USED
*SECNO 2.529

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1589.94 ELRRA=      1589.94

            Culvert M7   Outlet.  3-60" CMP's          (SECTION 2 OF SC ROUTINE)
              Photogrammetric x-sec. located 12' Downstream. (No Elev. Adjust.)
     2.529       5.68   1588.83   1588.83       .00   1591.61      2.78       .55       1.31   1583.25
    1384.0         .0    1384.0        .0        .0     103.5        .0      76.6      22.3   1583.15
       .35        .00     13.37       .00      .000      .045      .000      .000   1583.15   9991.00
   .016740       195.      181.      170.         0         8         0       .00     18.70  10009.70


SPECIAL CULVERT

SC  CUNO       CUNV       ENTLC      COFQ       RDLEN      RISE       SPAN       CULVLN     CHRT       SCL        ELCHU      ELCHD
     3          .024       .90       2.63       .00        5.00       .00        84.00      2          3        1584.98    1584.71

CHART  2 - CORRUGATED METAL PIPE CULVERT
SCALE  3 - PIPE PROJECTING FROM FILL

5140, NORMAL DEPTH EXCEEDS CULVERT HEIGHT
5130, EGIC= 1618.20..MAY BE TOO LARGE IF INLET CONTROLS.
5135, EGOC= 1606.39 ..MAY BE TOO LARGE IF OUTLET CONTROLS.
1490 NH CARD USED
*SECNO 2.545

SPECIAL CULVERT INLET CONTROL + WEIR FLOW, EG =   1594.48
1
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  3.72

SPECIAL CULVERT

     EGIC       EGOC        H4       QWEIR      QCULV       VCH       ACULV      ELTRD     WEIRLN
   1618.20    1606.39      2.87       736.       654.      5.065       58.9    1592.50       110.


                Right bank is non effective flow area:  Hard coded GR's
                        from STA 10072.3 to 10248.3 @ EL 1600
            Culvert M7    Inlet.   3-60"   CMP's        (SECTION 3 OF SC ROUTINE)
              Photogrammetric x-sec. located 12' Upstream. (No Elev. Adjust.)
               Base Channel Elevations were lowered to Culvert Invert EL 1584.98
            Culvert M7  BT information Surveyed by ALS. North top of curb.
            Culvert M7  BT information coded per figure 3.16 (HEC-2, Sept 90)
     2.545       9.27   1594.25       .00        .00   1594.48       .23      2.87       .00   1584.98
    1384.0      293.0     661.9     429.1      148.1     130.7      177.0      77.2      22.4   1584.98
       .36       1.98      5.06      2.42       .067      .045       .060      .000   1584.98   9945.91
   .001208        84.       84.       84.          2         0          0       .00    106.34  10052.25
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FLOW DISTRIBUTION FOR SECNO=      2.55          CWSEL=   1594.25

STA=    9946.    9987.    9994.   10008.   10015.   10031.   10052.
  PER Q=      8.4     12.7     47.8     16.0      8.4      6.5
   AREA=    102.0     46.1    130.7     55.2     77.5     44.3
    VEL=      1.1      3.8      5.1      4.0      1.5      2.0
  DEPTH=      2.5      7.2      9.3      7.4      5.0      2.1

CCHV=     .100 CEHV=     .300
1490 NH CARD USED
*SECNO 2.558
          Culvert M7      Upstream:  expanded flow.  (SECTION 4 OF SC ROUTINE)
     2.558      7.45   1594.45   1590.72       .00   1594.57       .13       .08       .01   1588.50
    1384.0     479.6     581.7     322.7     304.4     143.8     226.3      78.1      22.7   1588.40
       .37      1.58      4.05      1.43      .100      .045      .100      .000   1587.00   9930.63
   .001173       70.       71.       70.         2        18         0       .00    183.85  10114.47


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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


1490 NH CARD USED
*SECNO 2.670

3235 SLOPE TOO STEEP, EXCEEDS        .10


3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
     2.670      3.75   1596.35   1596.35       .00   1597.27       .93      2.28       .24   1595.00
    1384.0     181.2    1202.8        .0      28.9     152.0        .0      83.9      24.6   1599.00
       .39      6.28      7.92       .00      .100      .096      .000      .000   1592.60   9938.72
   .110893      575.      594.      610.         0         8         0       .00     99.31  10038.03


1490 NH CARD USED
*SECNO 2.785

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  4.27

            Left overbank is non effective flow area:  Hard coded GR's
                from STA 9927.3 to 9946.4 @ EL 1607.5
     2.785      6.01   1606.41   1605.24       .00   1607.01       .59      9.70       .03   1602.60
    1384.0      92.5     887.4     404.1      43.7     118.8     153.7      87.3      26.0   1601.70
       .42      2.12      7.47      2.63      .100      .045      .100      .000   1600.40   9949.45
   .006076      610.      607.      610.         9        11         0       .00     96.54  10045.99


1490 NH CARD USED
*SECNO 2.807
     2.807      5.21   1607.51   1605.80       .00   1607.74       .23       .69       .04   1604.40
    1384.0     555.3     822.6       6.1     213.3     184.5       6.4      88.3      26.3   1606.00
       .43      2.60      4.46       .95      .100      .064      .100      .000   1602.30   9934.68
   .006070      115.      112.      120.         4        14         0       .00    120.94  10055.63


1490 NH CARD USED
*SECNO 2.899

3301 HV CHANGED MORE THAN HVINS

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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .44

     2.899      3.10   1612.70   1612.56       .00   1613.63       .93      5.68       .21   1611.00
    1384.0      18.5     979.9     385.6       8.0     112.6      83.9      91.7      27.5   1610.60
       .45      2.32      8.70      4.60      .100      .054      .100      .000   1609.60   9980.83
   .030706      485.      489.      490.         2        11         0       .00     94.05  10074.88
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1490 NH CARD USED
*SECNO 3.008

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.83

     3.008      4.15   1621.95   1621.07       .00   1622.53       .58      8.87       .04   1621.10
    1384.0       1.0    1190.3     192.7       1.3     183.3      81.6      94.8      28.8   1620.50
       .47       .79      6.49      2.36      .100      .045      .100      .000   1617.80   9959.79
   .009141      575.      574.      600.         5        12         0       .00    104.29  10064.08


1490 NH CARD USED
*SECNO 3.121

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
                ARROW WASH Tributary
     3.121      5.51   1631.31   1631.31       .00   1632.64      1.33      7.12       .23   1628.90
    1384.0     217.9    1132.9      33.1      73.4     111.6      15.3      98.0      30.1   1629.30
       .49      2.97     10.15      2.16      .100      .045      .100      .000   1625.80   9948.17
   .016284      565.      598.      600.         0        11         0       .00     84.74  10032.91


1490 NH CARD USED
*SECNO 3.208
          HEC-1 Concentration Point C621:  24-hr storm controls
     3.208      3.60   1639.50   1639.37       .00   1640.41       .91      7.73       .04   1638.20
    1184.0      10.9    1173.1        .0       7.0     152.6        .0      99.7      30.8   1639.70
       .51      1.56      7.69       .00      .100      .046      .000      .000   1635.90   9969.35
   .019420      260.      456.      335.         2        14         0       .00     79.36  10048.71


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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


1490 NH CARD USED
*SECNO 3.241
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
     3.241      3.52   1644.42   1644.42       .00   1645.65      1.24      3.40       .10   1641.40
    1184.0      39.8    1068.1      76.1      15.2     114.1      29.0     100.4      31.1   1641.90
       .51      2.61      9.36      2.63      .100      .045      .100      .000   1640.90   9988.20
   .018919      175.      177.      175.         0         8         0       .00     70.64  10058.84


1490 NH CARD USED
*SECNO 3.323

3301 HV CHANGED MORE THAN HVINS

          HEC-1 Concentration Point C613:  24-hr storm controls.
     3.323      3.70   1653.50   1652.53       .00   1653.74       .24      7.98       .10   1654.50
     972.0        .0     475.9     496.1        .0     110.5     143.3     102.4      32.0   1652.00
       .54       .00      4.31      3.46      .000      .080      .100      .000   1649.80   9988.50
   .017940      420.      430.      440.         4        19         0       .00    111.86  10100.36


1490 NH CARD USED
*SECNO 3.421
     3.421      2.91   1662.91   1662.56       .00   1663.53       .62      9.68       .12   1662.40
     972.0        .3     836.0     135.7        .3     124.2      48.1     104.9      33.2   1661.00
       .57       .80      6.73      2.82      .100      .056      .100      .000   1660.00   9976.50
   .019785      510.      518.      505.         2        19         0       .00     84.90  10061.40


1490 NH CARD USED
*SECNO 3.487

3265 DIVIDED FLOW

          HEC-1 Concentration Point C608:  24-Hr storm controls.
         CULVERT  608:  ASHBROOK WASH and HAMPSTEAD DRIVE
            Culvert 608     Downstream: expanded flow. (SECTION 1 OF SC ROUTINE)
     3.487      2.89   1669.49   1669.46       .00   1670.57      1.07      6.90       .14   1668.00
     972.0       9.5     955.0       7.5       5.6     113.9       7.2     106.1      33.8   1668.60
       .58      1.69      8.38      1.04      .100      .045      .100      .000   1666.60   9965.78
   .019573      350.      352.      340.         2         5         0       .00     75.57  10048.89


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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

CCHV=     .300 CEHV=     .500
1490 NH CARD USED
*SECNO 3.519

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1678.50 ELREA=      1678.50

          Culvert 608  Outlet.   3-10'x 7' Box       (SECTION 2 OF SC ROUTINE)
            Photogrammetric x-sec. located 24.4' Downstream. (No Elev. Adjust.
   3.519      3.44   1674.04   1674.04       .00   1675.71      1.67      3.33       .30   1670.80
   972.0        .0     972.0       .0        .0      93.8        .0     106.5      34.0   1670.60
     .58       .00     10.37       .00      .000      .045      .000      .000   1670.60   9988.70
 .020036      170.      168.      170.         0        11         0       .00     28.40  10017.10


SPECIAL CULVERT

SC  CUNO      CUNV      ENTLC     COFQ      RDLEN     RISE      SPAN      CULVLN    CHRT      SCL       ELCHU     ELCHD
    3         .013      .50       2.63      .00       7.00      10.00     61.50     8         1         1673.19   1672.71

CHART  8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL
SCALE  1 - WINGWALLS FLARED 30 TO 75 DEGREES

1490 NH CARD USED
*SECNO 3.531

SPECIAL CULVERT OUTLET CONTROL
EGIC =   1678.273  EGOC =   1678.780  PCWSE=   1674.042  ELTRD=   1681.950


3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  3.07

SPECIAL CULVERT

     EGIC      EGOC       H4      QWEIR     QCULV      VCH      ACULV     ELTRD    WEIRLN
  1678.27   1678.78     3.07        0.      972.     4.961     210.0   1681.95        0.


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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1681.57 ELREA=      1681.57

          Culvert 608  Inlet.    3-10'x7'  Box       (SECTION 3 OF SC ROUTINE)
            Photogrammetric x-sec. located 10' Upstream. (No Elev. Adjust.)
          Culvert 608 BT information Surveyed by ALS. West top of curb.
   3.531      6.70   1678.40       .00       .00   1678.78       .38      3.07       .00   1673.10
   972.0        .0     972.0       .0        .0     195.9        .0     106.7      34.0   1671.70
     .59       .00      4.96       .00      .000      .045      .000      .000   1671.70   9980.80
 .002123       62.       62.       62.         2         0         0       .00     33.00  10013.80


CCHV=     .100 CEHV=     .300
1490 NH CARD USED
*SECNO 3.544

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.44

          Culvert 608     Upstream:  expanded flow.  (SECTION 4 OF SC ROUTINE)
   3.544      5.17   1678.87   1675.79       .00   1678.92       .05       .10       .03   1676.90
   972.0      87.7     858.6      25.7      152.4     465.7      32.8     107.4      34.3   1676.70
     .60       .58      1.84       .78      .100      .069      .100      .000   1673.70   9819.78
 .001028       75.       71.       75.         2        17         0       .00    253.40  10073.18
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1490 NH CARD USED
*SECNO 3.621

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
                 START Hydraulically Similar Reach AS4
                 See Exhibit 1, Manning's n Value Map.
     3.621      3.77   1682.07   1682.07       .00   1682.93       .87      1.16       .25   1681.90
     972.0       .0     972.0       .0        .1     130.0        .1     111.0      35.8   1681.90
       .61      .04      7.47       .10      .055      .045      .025      .000   1678.30   9954.27
   .026545      390.     403.      390.         0        19         0       .00     80.93  10035.20


1490 NH CARD USED
*SECNO 3.701
1
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.59

     3.701      4.32   1689.12   1688.64       .00   1689.62       .51      6.65       .04   1687.90
     972.0      16.4     950.8       4.9       7.1     164.7       1.3     112.5      36.6   1688.10
       .63      2.31      5.77      3.69      .055      .045      .025      .000   1684.80   9979.67
   .010461      385.     422.      420.         5         5         0       .00     85.62  10065.29


1490 NH CARD USED
*SECNO 3.764
     3.764      3.43   1693.13   1692.94       .00   1693.81       .68      4.13       .05   1691.80
     972.0     101.0     858.7      12.3      20.9     125.5       5.7     113.7      37.3   1692.70
       .65      4.84      6.84      2.14      .046      .045      .044      .000   1689.70   9962.80
   .014989      330.     333.      315.         3        19         0       .00     88.43  10051.23


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                                                                    THIS RUN EXECUTED 17OCT96    17:05:57
*************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
*************************************


NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST


Ex Cond/No Dam

SUMMARY PRINTOUT TABLE  101

      SECNO     EGOC      ELLC      EGIC      ELTRD     QCULV     QWEIR     CLASS     H4        DEPTH     CWSEL     VCH       EG

*     2.428   1728.33   1580.82   1731.35   1584.12    746.47   2339.68     16.00      5.15     11.45   1587.25      3.57  1587.36
*     2.428   1645.32   1580.82   1645.66   1584.12    715.50   1357.77     16.00      2.09     10.77   1586.57      2.70  1586.64

*     2.545   1680.41   1589.98   1696.91   1592.50    725.95   1908.52     16.00      5.58     10.70   1595.68      6.47  1596.07
*     2.545   1606.39   1589.98   1618.20   1592.50    653.57    735.84     16.00      2.87      9.27   1594.25      5.06  1594.48

*     3.531   1682.69   1680.19   1682.85   1681.95   2048.61    104.02     16.00      3.04     10.39   1682.09      3.83  1682.23
*     3.531   1678.78   1680.19   1678.27   1681.95    972.00       .00      7.00      3.07      6.70   1678.40      4.96  1678.78

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Ex Cond/No Dam

SUMMARY PRINTOUT TABLE  110

      SECNO     CWSEL     DIFKWS      EG        TOPWID    QLOB      QCH       QROB      PERENC    STENCL    STCHL     STCHR     STENCR

      1.521   1504.47       .00   1506.03    147.20    105.60   3977.18     51.22       .00       .00   9953.30  10031.70       .00
```

	1.521	1503.75	.00	1505.04	91.52	65.92	3087.12	33.97	.00	.00	9953.30	10031.70	.00
	1.523	1504.67	.00	1506.22	146.92	105.46	3977.33	51.21	.00	.00	9953.30	10031.70	.00
	1.523	1503.95	.00	1505.24	91.52	65.93	3087.09	33.97	.00	.00	9953.30	10031.70	.00
	1.525	1504.86	.00	1506.42	146.53	105.27	3977.55	51.18	.00	.00	9953.30	10031.70	.00
	1.525	1504.15	.00	1505.44	91.53	65.95	3087.07	33.98	.00	.00	9953.30	10031.70	.00
	1.527	1505.06	.00	1506.62	146.20	105.11	3977.74	51.15	.00	.00	9953.30	10031.70	.00
	1.527	1504.35	.00	1505.64	91.53	65.97	3087.03	33.99	.00	.00	9953.30	10031.70	.00
*	1.577	1509.71	.00	1510.45	135.79	1612.97	1940.33	580.70	.00	.00	9983.50	10020.70	.00
	1.577	1508.88	.00	1509.52	132.15	1213.46	1559.22	414.31	.00	.00	9983.50	10020.70	.00
*	1.602	1511.35	.00	1512.72	129.53	57.67	4023.73	52.60	.00	.00	9951.60	10064.90	.00
*	1.602	1510.71	.00	1511.92	126.44	35.96	3120.01	31.03	.00	.00	9951.60	10064.90	.00
	1.636	1516.28	.00	1517.14	189.38	.00	2061.74	2072.25	.00	.00	9995.40	10056.40	.00
	1.636	1515.78	.00	1516.54	186.51	.00	1720.80	1466.20	.00	.00	9995.40	10056.40	.00
*	1.686	1520.57	.00	1521.28	213.71	1567.77	2215.65	350.58	.00	.00	9990.00	10037.00	.00
	1.686	1520.00	.00	1520.63	207.72	1115.20	1846.47	225.33	.00	.00	9990.00	10037.00	.00
	1.727	1523.86	.00	1524.68	201.18	2690.80	1406.70	29.50	.00	.00	10036.30	10076.30	.00
*	1.727	1523.36	.00	1524.06	198.94	2026.94	1133.75	19.30	.00	.00	10036.30	10076.30	.00
*	1.855	1535.02	.00	1535.69	198.40	111.46	2115.39	1900.15	.00	.00	9987.00	10035.20	.00
*	1.855	1534.45	.00	1535.02	193.11	64.01	1732.40	1383.58	.00	.00	9987.00	10035.20	.00
*	1.980	1546.34	.00	1546.78	196.03	638.33	3439.13	49.54	.00	.00	9980.00	10112.60	.00
*	1.980	1545.68	.00	1546.06	192.09	423.90	2725.55	30.55	.00	.00	9980.00	10112.60	.00
*	2.071	1555.44	.00	1555.75	194.54	52.22	3541.51	533.26	.00	.00	9948.90	10084.30	.00
*	2.071	1554.72	.00	1554.97	186.50	29.52	2782.08	368.40	.00	.00	9948.90	10084.30	.00
	2.095	1557.74	.00	1558.16	226.63	227.54	1986.65	1853.81	.00	.00	9925.40	10000.00	.00
*	2.095	1557.04	.00	1557.40	206.68	126.80	1582.01	1386.18	.00	.00	9925.40	10000.00	.00
	2.200	1565.72	.00	1565.88	265.06	1739.93	1211.77	180.30	.00	.00	9955.40	10023.90	.00
	2.200	1564.91	.00	1565.02	227.75	1157.95	860.40	93.65	.00	.00	9955.40	10023.90	.00
	2.279	1569.86	.00	1570.07	216.47	1129.41	1989.01	13.58	.00	.00	9924.60	10048.80	.00
*	2.279	1568.90	.00	1569.06	212.17	724.31	1382.86	4.83	.00	.00	9924.60	10048.80	.00
	2.304	1571.33	.00	1571.49	210.96	55.02	2654.36	422.62	.00	.00	9864.70	10021.30	.00
	2.304	1570.39	.00	1570.50	207.38	30.71	1828.69	252.61	.00	.00	9864.70	10021.30	.00

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	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
*	2.382	1576.22	.00	1576.50	191.03	1152.36	1535.14	409.50	.00	.00	9955.70	10033.70	.00
*	2.382	1575.26	.00	1575.48	187.11	722.79	1078.32	251.89	.00	.00	9955.70	10033.70	.00
*	2.405	1581.98	.00	1582.21	125.23	1086.46	627.20	1383.34	.00	.00	9992.30	10011.70	.00
*	2.405	1581.01	.00	1584.55	19.40	.00	2053.00	.00	.00	.00	9992.30	10011.70	.00
*	2.428	1587.25	.00	1587.36	303.78	1362.64	701.71	1032.65	.00	.00	9995.00	10012.20	.00
*	2.428	1586.57	.00	1586.64	240.41	870.22	498.75	684.03	.00	.00	9995.00	10012.20	.00
	2.448	1587.60	.00	1587.67	314.04	1443.39	857.15	796.46	.00	.00	9987.00	10037.30	.00
	2.448	1586.80	.00	1586.84	233.01	962.83	586.92	503.25	.00	.00	9987.00	10037.30	.00
	2.494	1587.97	.00	1588.34	127.63	316.04	2278.82	23.15	.00	.00	9973.90	10050.60	.00
	2.494	1587.07	.00	1587.22	122.50	155.37	1220.33	8.30	.00	.00	9973.90	10050.60	.00
*	2.529	1589.99	.00	1590.49	94.69	848.91	857.06	912.03	.00	.00	9991.00	10009.70	.00
*	2.529	1588.83	.00	1591.61	18.70	.00	1384.00	.00	.00	.00	9991.00	10009.70	.00
*	2.545	1595.68	.00	1596.07	141.43	544.00	976.27	1097.73	.00	.00	9993.70	10007.80	.00
*	2.545	1594.25	.00	1594.48	106.34	292.96	661.91	429.13	.00	.00	9993.70	10007.80	.00
	2.558	1595.98	.00	1596.21	242.36	895.29	997.34	725.37	.00	.00	9989.80	10010.80	.00
	2.558	1594.45	.00	1594.57	183.85	479.55	581.75	322.70	.00	.00	9989.80	10010.80	.00
*	2.670	1598.42	.00	1599.09	113.54	451.95	2166.05	.00	.00	.00	9959.80	10044.50	.00
*	2.670	1596.35	.00	1597.27	99.31	181.17	1202.83	.00	.00	.00	9959.80	10044.50	.00
*	2.785	1607.64	.00	1608.75	124.13	223.43	1555.78	838.78	.00	.00	9968.90	9992.60	.00
*	2.785	1606.41	.00	1607.01	96.54	92.50	887.43	404.06	.00	.00	9968.90	9992.60	.00
	2.807	1609.29	.00	1609.63	133.97	1086.61	1478.76	52.63	.00	.00	10000.00	10047.10	.00
	2.807	1607.51	.00	1607.74	120.94	555.32	822.56	6.12	.00	.00	10000.00	10047.10	.00
*	2.899	1613.87	.00	1615.25	102.58	79.18	1793.29	745.52	.00	.00	9990.20	10036.90	.00
*	2.899	1612.70	.00	1613.63	94.05	18.49	979.87	385.64	.00	.00	9990.20	10036.90	.00

*	3.008	1623.29	.00	1624.18	115.55	12.01	2163.73	442.27	.00	.00	9962.70	10023.90	.00
*	3.008	1621.95	.00	1622.53	104.29	.99	1190.29	192.72	.00	.00	9962.70	10023.90	.00
*	3.121	1632.81	.00	1634.61	105.09	557.10	1919.54	141.35	.00	.00	9988.70	10017.80	.00
*	3.121	1631.31	.00	1632.64	84.74	217.93	1132.92	33.14	.00	.00	9988.70	10017.80	.00
	3.208	1640.82	.00	1642.29	95.53	70.95	2417.13	2.92	.00	.00	9980.00	10050.60	.00
	3.208	1639.50	.00	1640.41	79.36	10.88	1173.12	.00	.00	.00	9980.00	10050.60	.00
*	3.241	1646.17	.00	1647.89	118.63	131.13	2077.15	282.72	.00	.00	9998.30	10036.80	.00
*	3.241	1644.42	.00	1645.65	70.64	39.78	1068.14	76.08	.00	.00	9998.30	10036.80	.00
	3.323	1654.87	.00	1655.32	118.39	.34	1034.52	1125.13	.00	.00	9986.80	10035.60	.00
	3.323	1653.50	.00	1653.74	111.86	.00	475.90	496.10	.00	.00	9986.80	10035.60	.00

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	3.421	1664.30	.00	1665.37	93.56	8.78	1756.31	394.91	.00	.00	9977.80	10028.90	.00
	3.421	1662.91	.00	1663.53	84.90	.26	836.03	135.70	.00	.00	9977.80	10028.90	.00
*	3.487	1671.06	.00	1672.56	103.81	61.95	1930.06	161.98	.00	.00	9973.30	10019.60	.00
	3.487	1669.49	.00	1670.57	75.57	9.49	955.01	7.50	.00	.00	9973.30	10019.60	.00
*	3.519	1676.35	.00	1679.19	28.40	.00	2154.00	.00	.00	.00	9988.70	10017.10	.00
*	3.519	1674.04	.00	1675.71	28.40	.00	972.00	.00	.00	.00	9988.70	10017.10	.00
*	3.531	1682.09	.00	1682.23	355.93	594.36	1217.40	342.24	.00	.00	9980.80	10013.80	.00
*	3.531	1678.40	.00	1678.78	33.00	.00	972.00	.00	.00	.00	9980.80	10013.80	.00
	3.544	1682.24	.00	1682.28	308.86	573.32	1495.84	84.84	.00	.00	9950.20	10057.30	.00
*	3.544	1678.87	.00	1678.92	253.40	87.73	858.59	25.68	.00	.00	9950.20	10057.30	.00
*	3.621	1683.28	.00	1684.60	96.53	19.03	2097.71	37.26	.00	.00	9955.40	10034.20	.00
*	3.621	1682.07	.00	1682.93	80.93	.00	971.99	.01	.00	.00	9955.40	10034.20	.00
	3.701	1690.21	.00	1691.24	94.20	87.71	2028.78	37.51	.00	.00	9990.00	10062.70	.00
*	3.701	1689.12	.00	1689.62	85.62	16.38	950.76	4.86	.00	.00	9990.00	10062.70	.00
	3.764	1694.44	.00	1695.45	102.21	282.98	1699.56	171.46	.00	.00	9978.80	10035.20	.00
	3.764	1693.13	.00	1693.81	88.43	101.02	858.70	12.28	.00	.00	9978.80	10035.20	.00

Ex Cond/No Dam

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	1.521	.00	.00	.00	1499.30	4134.00	1504.47	1503.81	1506.03	198.18	10.18	432.18	293.65
	1.521	.00	.00	.00	1499.30	3187.00	1503.75	1503.15	1505.04	200.82	9.23	361.02	224.89
	1.523	10.00	.00	.00	1499.50	4134.00	1504.67	1504.01	1506.22	198.44	10.18	431.91	293.46
	1.523	10.00	.00	.00	1499.50	3187.00	1503.95	1503.35	1505.24	200.68	9.23	361.10	224.97
	1.525	10.00	.00	.00	1499.70	4134.00	1504.86	1504.31	1506.42	198.80	10.19	431.53	293.20
	1.525	10.00	.00	.00	1499.70	3187.00	1504.15	1503.55	1505.44	200.51	9.23	361.19	225.07
	1.527	10.00	.00	.00	1499.90	4134.00	1505.06	1504.41	1506.62	199.12	10.19	431.21	292.97
	1.527	10.00	.00	.00	1499.90	3187.00	1504.35	1503.75	1505.64	200.29	9.22	361.32	225.19
*	1.577	259.40	.00	.00	1503.20	4134.00	1509.71	1508.07	1510.45	101.36	8.40	650.79	410.62
	1.577	259.40	.00	.00	1503.20	3187.00	1508.88	1507.50	1509.52	104.57	7.76	541.65	311.66
*	1.602	136.10	.00	.00	1506.90	4134.00	1511.35	1511.03	1512.72	253.27	9.50	451.37	259.76
*	1.602	136.10	.00	.00	1506.90	3187.00	1510.71	1510.49	1511.92	286.25	8.90	368.80	188.37
	1.636	180.10	.00	.00	1510.60	4134.00	1516.28	1515.81	1517.14	232.27	8.93	603.49	271.25
	1.636	180.10	.00	.00	1510.60	3187.00	1515.78	1515.43	1516.54	227.10	8.40	508.92	211.48
*	1.686	262.60	.00	.00	1512.11	4134.00	1520.57	1519.81	1521.28	117.97	8.36	729.70	380.61
	1.686	262.60	.00	.00	1512.11	3187.00	1520.00	1519.36	1520.63	117.03	7.75	609.11	294.60
	1.727	213.90	.00	.00	1519.20	4127.00	1523.86	1523.32	1524.68	238.23	9.27	613.78	267.39
*	1.727	213.90	.00	.00	1519.20	3180.00	1523.36	1522.90	1524.06	247.79	8.60	513.79	202.02
*	1.855	677.40	.00	.00	1527.40	4127.00	1535.02	1534.00	1535.69	115.92	8.10	719.28	383.31
*	1.855	677.40	.00	.00	1527.40	3180.00	1534.45	1533.55	1535.02	112.17	7.40	608.83	300.26
*	1.980	659.30	.00	.00	1540.40	4127.00	1546.34	1544.71	1546.78	269.35	5.54	785.00	251.46
*	1.980	659.30	.00	.00	1540.40	3180.00	1545.68	1544.28	1546.06	279.58	5.11	657.15	190.18

*	2.071	480.40	.00	.00	1547.20	4127.00	1555.44	1552.83	1555.75	136.34	4.64	939.94	353.45
*	2.071	480.40	.00	.00	1547.20	3180.00	1554.72	1552.43	1554.97	131.59	4.18	803.20	277.22
	2.095	128.70	.00	.00	1551.90	4068.00	1557.74	1556.02	1558.16	251.69	5.52	804.73	256.42
*	2.095	128.70	.00	.00	1551.90	3095.00	1557.04	1555.57	1557.40	270.69	5.16	651.28	188.12
	2.200	552.70	.00	.00	1559.90	3132.00	1565.72	1562.93	1565.88	81.10	3.29	1013.39	347.79
	2.200	552.70	.00	.00	1559.90	2112.00	1564.91	1562.48	1565.02	70.31	2.75	810.57	251.87
	2.279	415.50	.00	.00	1565.10	3132.00	1569.86	1567.72	1570.07	139.46	3.72	851.12	265.21
*	2.279	415.50	.00	.00	1565.10	2112.00	1568.90	1567.27	1569.06	155.81	3.32	645.82	169.20
	2.304	134.10	.00	.00	1565.30	3132.00	1571.33	1568.48	1571.49	86.01	3.33	977.73	337.72
	2.304	134.10	.00	.00	1565.30	2112.00	1570.39	1568.00	1570.50	80.18	2.81	782.50	235.87

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	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	2.382	410.20	.00	.00	1571.20	3097.00	1576.22	1574.35	1576.50	186.11	4.40	734.16	227.01
*	2.382	410.20	.00	.00	1571.20	2053.00	1575.26	1573.86	1575.48	206.80	3.94	551.30	142.76
*	2.405	123.10	.00	.00	1574.00	3097.00	1581.98	1581.98	1582.21	72.78	4.05	806.65	363.02
*	2.405	123.10	.00	.00	1574.00	2053.00	1581.01	1581.01	1584.55	1203.86	15.10	135.93	59.17
*	2.428	121.00	1584.12	1580.82	1575.80	3097.00	1587.25	.00	1587.36	34.97	3.57	1175.68	523.72
*	2.428	121.00	1584.12	1580.82	1575.80	2053.00	1586.57	.00	1586.64	21.65	2.70	986.81	441.21
	2.448	104.60	.00	.00	1578.80	3097.00	1587.60	1582.56	1587.67	23.11	2.22	1476.15	644.16
	2.448	104.60	.00	.00	1578.80	2053.00	1586.80	1582.07	1586.84	15.64	1.70	1250.09	519.19
	2.494	245.90	.00	.00	1581.20	2618.00	1587.97	1585.33	1588.34	24.19	5.19	622.90	532.27
	2.494	245.90	.00	.00	1581.20	1384.00	1587.07	1584.32	1587.22	12.26	3.29	510.38	395.25
*	2.529	180.70	.00	.00	1583.15	2618.00	1589.99	1589.99	1590.49	34.12	6.85	482.26	448.21
*	2.529	180.70	.00	.00	1583.15	1384.00	1588.83	1588.83	1591.61	167.40	13.37	103.52	106.97
*	2.545	84.00	1592.50	1589.98	1584.98	2618.00	1595.68	.00	1596.07	16.25	6.47	630.77	649.35
*	2.545	84.00	1592.50	1589.98	1584.98	1384.00	1594.25	.00	1594.48	12.08	5.06	455.79	398.19
	2.558	71.30	.00	.00	1587.00	2618.00	1595.98	1591.90	1596.21	17.59	5.67	1004.00	624.25
	2.558	71.30	.00	.00	1587.00	1384.00	1594.45	1590.72	1594.57	11.73	4.05	674.48	404.13
*	2.670	593.50	.00	.00	1592.60	2618.00	1598.42	1597.32	1599.09	334.67	6.80	400.43	143.11
*	2.670	593.50	.00	.00	1592.60	1384.00	1596.35	1596.35	1597.27	1108.93	7.92	180.82	41.56
*	2.785	607.20	.00	.00	1600.40	2618.00	1607.64	1606.68	1608.75	90.48	10.54	441.52	275.23
*	2.785	607.20	.00	.00	1600.40	1384.00	1606.41	1605.24	1607.01	60.76	7.47	316.25	177.56
	2.807	112.30	.00	.00	1602.30	2618.00	1609.29	1606.69	1609.63	56.31	5.51	631.24	348.88
	2.807	112.30	.00	.00	1602.30	1384.00	1607.51	1605.80	1607.74	60.70	4.46	404.32	177.64
*	2.899	489.40	.00	.00	1609.60	2618.00	1613.87	1613.72	1615.25	291.78	10.75	319.23	153.26
*	2.899	489.40	.00	.00	1609.60	1384.00	1612.70	1612.56	1613.63	307.06	8.70	204.44	78.98
*	3.008	573.70	.00	.00	1617.80	2618.00	1623.29	1622.39	1624.18	94.05	8.18	411.31	269.95
*	3.008	573.70	.00	.00	1617.80	1384.00	1621.95	1621.07	1622.53	91.41	6.49	266.21	144.75
*	3.121	598.00	.00	.00	1625.80	2618.00	1632.81	1632.81	1634.61	155.21	12.35	343.36	210.14
*	3.121	598.00	.00	.00	1625.80	1384.00	1631.31	1631.31	1632.64	162.84	10.15	200.35	108.46
	3.208	456.40	.00	.00	1635.90	2491.00	1640.82	1640.71	1642.29	208.40	9.89	274.31	172.55
	3.208	456.40	.00	.00	1635.90	1184.00	1639.50	1639.37	1640.41	194.20	7.69	159.54	84.96
*	3.241	177.30	.00	.00	1640.90	2491.00	1646.17	1646.17	1647.89	151.97	11.44	303.10	202.06
*	3.241	177.30	.00	.00	1640.90	1184.00	1644.42	1644.42	1645.65	189.19	9.36	158.31	86.08
	3.323	429.50	.00	.00	1649.80	2160.00	1654.87	1653.51	1655.32	191.53	5.86	410.48	156.08
	3.323	429.50	.00	.00	1649.80	972.00	1653.50	1652.53	1653.74	179.40	4.31	253.80	72.57

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	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	3.421	518.20	.00	.00	1660.00	2160.00	1664.30	1663.83	1665.37	192.68	8.99	296.88	155.61
	3.421	518.20	.00	.00	1660.00	972.00	1662.91	1662.56	1663.53	197.85	6.73	172.54	69.10
*	3.487	351.50	.00	.00	1666.60	2154.00	1671.06	1671.06	1672.56	155.14	10.36	273.82	172.94
	3.487	351.50	.00	.00	1666.60	972.00	1669.49	1669.46	1670.57	195.73	8.38	126.72	69.48
*	3.519	168.30	.00	.00	1670.60	2154.00	1676.35	1676.35	1679.19	168.17	13.52	159.31	166.10
*	3.519	168.30	.00	.00	1670.60	972.00	1674.04	1674.04	1675.71	200.36	10.37	93.78	68.67
*	3.531	61.50	1681.95	1680.19	1671.70	2154.00	1682.09	.00	1682.23	6.65	3.83	1286.71	835.59
*	3.531	61.50	1681.95	1680.19	1671.70	972.00	1678.40	.00	1678.78	21.23	4.96	195.91	210.97

	3.544	71.30	.00	.00	1673.70	2154.00	1682.24	1676.88	1682.28	4.61	1.81	1606.46	1002.97
*	3.544	71.30	.00	.00	1673.70	972.00	1678.87	1675.79	1678.92	10.28	1.84	650.89	303.13
*	3.621	403.40	.00	.00	1678.30	2154.00	1683.28	1683.28	1684.60	196.22	9.29	238.13	153.77
*	3.621	403.40	.00	.00	1678.30	972.00	1682.07	1682.07	1682.93	265.45	7.47	130.21	59.66
	3.701	421.70	.00	.00	1684.80	2154.00	1690.21	1689.85	1691.24	128.76	8.32	270.94	189.83
*	3.701	421.70	.00	.00	1684.80	972.00	1689.12	1688.64	1689.62	104.61	5.77	173.07	95.03
	3.764	332.80	.00	.00	1689.70	2154.00	1694.44	1694.14	1695.45	124.87	8.51	276.06	192.76
	3.764	332.80	.00	.00	1689.70	972.00	1693.13	1692.94	1693.81	149.89	6.84	152.13	79.39

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Ex Cond/No Dam

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	1.521	4134.00	1504.47	.00	.00	.00	147.20	.00
	1.521	3187.00	1503.75	-.72	.00	.00	91.52	.00
	1.523	4134.00	1504.67	.00	.20	.00	146.92	10.00
	1.523	3187.00	1503.95	-.72	.20	.00	91.52	10.00
	1.525	4134.00	1504.86	.00	.20	.00	146.53	10.00
	1.525	3187.00	1504.15	-.71	.20	.00	91.53	10.00
	1.527	4134.00	1505.06	.00	.20	.00	146.20	10.00
	1.527	3187.00	1504.35	-.71	.20	.00	91.53	10.00
*	1.577	4134.00	1509.71	.00	4.65	.00	135.79	259.40
	1.577	3187.00	1508.88	-.83	4.53	.00	132.15	259.40
*	1.602	4134.00	1511.35	.00	1.64	.00	129.53	136.10
*	1.602	3187.00	1510.71	-.64	1.83	.00	126.44	136.10
	1.636	4134.00	1516.28	.00	4.93	.00	189.38	180.10
	1.636	3187.00	1515.78	-.50	5.07	.00	186.51	180.10
*	1.686	4134.00	1520.57	.00	4.29	.00	213.71	262.60
	1.686	3187.00	1520.00	-.57	4.22	.00	207.72	262.60
	1.727	4127.00	1523.86	.00	3.29	.00	201.18	213.90
*	1.727	3180.00	1523.36	-.51	3.36	.00	198.94	213.90
*	1.855	4127.00	1535.02	.00	11.15	.00	198.40	677.40
*	1.855	3180.00	1534.45	-.57	11.09	.00	193.11	677.40
*	1.980	4127.00	1546.34	.00	11.32	.00	196.03	659.30
*	1.980	3180.00	1545.68	-.66	11.23	.00	192.09	659.30
*	2.071	4127.00	1555.44	.00	9.10	.00	194.54	480.40
*	2.071	3180.00	1554.72	-.72	9.04	.00	186.50	480.40
	2.095	4068.00	1557.74	.00	2.31	.00	226.63	128.70
*	2.095	3095.00	1557.04	-.71	2.32	.00	206.68	128.70
	2.200	3132.00	1565.72	.00	7.98	.00	265.06	552.70
	2.200	2112.00	1564.91	-.81	7.88	.00	227.75	552.70
	2.279	3132.00	1569.86	.00	4.13	.00	216.47	415.50
*	2.279	2112.00	1568.90	-.96	3.98	.00	212.17	415.50
	2.304	3132.00	1571.33	.00	1.47	.00	210.96	134.10
	2.304	2112.00	1570.39	-.94	1.49	.00	207.38	134.10

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	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	2.382	3097.00	1576.22	.00	4.89	.00	191.03	410.20
*	2.382	2053.00	1575.26	-.96	4.87	.00	187.11	410.20
*	2.405	3097.00	1581.98	.00	5.76	.00	125.23	123.10
*	2.405	2053.00	1581.01	-.97	5.75	.00	19.40	123.10
*	2.428	3097.00	1587.25	.00	5.27	.00	303.78	121.00
*	2.428	2053.00	1586.57	-.68	5.56	.00	240.41	121.00
	2.448	3097.00	1587.60	.00	.35	.00	314.04	104.60
	2.448	2053.00	1586.80	-.80	.23	.00	233.01	104.60

	2.494	2618.00	1587.97	.00	.37	.00	127.63	245.90
	2.494	1384.00	1587.07	-.90	.27	.00	122.50	245.90
*	2.529	2618.00	1589.99	.00	2.02	.00	94.69	180.70
*	2.529	1384.00	1588.83	-1.16	1.77	.00	18.70	180.70
*	2.545	2618.00	1595.68	.00	5.69	.00	141.43	84.00
*	2.545	1384.00	1594.25	-1.43	5.41	.00	106.34	84.00
	2.558	2618.00	1595.98	.00	.30	.00	242.36	71.30
	2.558	1384.00	1594.45	-1.53	.20	.00	183.85	71.30
*	2.670	2618.00	1598.42	.00	2.44	.00	113.54	593.50
*	2.670	1384.00	1596.35	-2.07	1.90	.00	99.31	593.50
*	2.785	2618.00	1607.64	.00	9.22	.00	124.13	607.20
*	2.785	1384.00	1606.41	-1.22	10.07	.00	96.54	607.20
	2.807	2618.00	1609.29	.00	1.65	.00	133.97	112.30
	2.807	1384.00	1607.51	-1.78	1.10	.00	120.94	112.30
*	2.899	2618.00	1613.87	.00	4.58	.00	102.58	489.40
*	2.899	1384.00	1612.70	-1.17	5.19	.00	94.05	489.40
*	3.008	2618.00	1623.29	.00	9.42	.00	115.55	573.70
*	3.008	1384.00	1621.95	-1.33	9.25	.00	104.29	573.70
*	3.121	2618.00	1632.81	.00	9.52	.00	105.09	598.00
*	3.121	1384.00	1631.31	-1.50	9.35	.00	84.74	598.00
	3.208	2491.00	1640.82	.00	8.01	.00	95.53	456.40
	3.208	1184.00	1639.50	-1.31	8.20	.00	79.36	456.40
*	3.241	2491.00	1646.17	.00	5.35	.00	118.63	177.30
*	3.241	1184.00	1644.42	-1.75	4.91	.00	70.64	177.30
	3.323	2160.00	1654.87	.00	8.70	.00	118.39	429.50
	3.323	972.00	1653.50	-1.37	9.09	.00	111.86	429.50

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	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	3.421	2160.00	1664.30	.00	9.43	.00	93.56	518.20
	3.421	972.00	1662.91	-1.39	9.41	.00	84.90	518.20
*	3.487	2154.00	1671.06	.00	6.75	.00	103.81	351.50
	3.487	972.00	1669.49	-1.56	6.59	.00	75.57	351.50
*	3.519	2154.00	1676.35	.00	5.29	.00	28.40	168.30
*	3.519	972.00	1674.04	-2.31	4.55	.00	28.40	168.30
*	3.531	2154.00	1682.09	.00	5.74	.00	355.93	61.50
*	3.531	972.00	1678.40	-3.69	4.36	.00	33.00	61.50
	3.544	2154.00	1682.24	.00	.15	.00	308.86	71.30
*	3.544	972.00	1678.87	-3.37	.47	.00	253.40	71.30
*	3.621	2154.00	1683.28	.00	1.05	.00	96.53	403.40
*	3.621	972.00	1682.07	-1.22	3.20	.00	80.93	403.40
	3.701	2154.00	1690.21	.00	6.92	.00	94.20	421.70
*	3.701	972.00	1689.12	-1.09	7.05	.00	85.62	421.70
	3.764	2154.00	1694.44	.00	4.24	.00	102.21	332.80
	3.764	972.00	1693.13	-1.32	4.01	.00	88.43	332.80

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SUMMARY OF ERRORS AND SPECIAL NOTES

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WARNING SECNO=      1.577  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      1.602  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      1.602  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      1.686  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      1.727  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      1.855  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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WARNING SECNO=      1.855  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      1.980  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      1.980  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      2.071  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      2.071  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      2.095  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      2.279  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      2.382  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      2.382  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      2.405  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      2.405  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      2.405  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      2.405  PROFILE=  2  SLOPE TOO STEEP
CAUTION SECNO=      2.405  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      2.428  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      2.428  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      2.529  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      2.529  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      2.529  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      2.529  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      2.545  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      2.545  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      2.670  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=      2.670  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      2.670  PROFILE=  2  SLOPE TOO STEEP
CAUTION SECNO=      2.670  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      2.785  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      2.785  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      2.899  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
1
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WARNING SECNO=      2.899  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      3.008  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      3.008  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      3.121  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      3.121  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      3.121  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      3.121  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      3.241  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      3.241  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      3.241  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      3.241  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      3.487  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      3.487  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      3.519  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      3.519  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      3.519  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      3.519  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      3.531  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      3.531  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      3.544  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      3.621  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      3.621  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      3.621  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      3.621  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      3.701  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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1*****************************************                                    ****************************************
 *  HEC-2 WATER SURFACE PROFILES           *                                    *  U.S. ARMY CORPS OF ENGINEERS        *
 *                                         *                                    *  HYDROLOGIC ENGINEERING CENTER       *
 *  Version   4.6.2;  May 1991             *                                    *  609 SECOND STREET, SUITE D          *
 *                                         *                                    *  DAVIS, CALIFORNIA 95616-4687        *
 *  RUN DATE    17OCT96    TIME   17:26:36 *                                    *          (916) 756-1104              *
 *****************************************                                    ****************************************


                                        X     X  XXXXXXX   XXXXX              XXXXX
                                        X     X  X        X     X            X     X
                                        X     X  X        X                        X
                                        XXXXXXX  XXXX     X          XXXXX    XXXXX
                                        X     X  X        X                  X
                                        X     X  X        X     X            X
                                        X     X  XXXXXXX   XXXXX             XXXXXXX
1
   17OCT96      17:26:36                                                                                          PAGE    1


                                                                                   THIS RUN EXECUTED 17OCT96    17:26:36
 *************************************
  HEC-2 WATER SURFACE PROFILES

  Version   4.6.2;  May 1991
 *************************************


 T1    *  FOUNTAIN HILLS ADMP                                  File: FU-AS.IH2
 T2    *  Project No. 63                                         By: ccc
 T3    *  Fu Cond/No Dam
 T4    *  Extracted from Ftn Hills FDS model with changes as follows:
 T4    *    (a) The discharge values are changed to reflect discharges
 T5    *        with and without Dam 4.
 T6    *    (b) Cross-sections above Dam 4 were removed.
 T7    *  NOTES:
 T8    *    (a) Sources of 100-yr discharge for the future condition:
 T9    *            HEC1 Models ===> FUND4-24.* AND FUND4-6.*
 T9    *    (b) Runs are for future condition with and without Dam 4.


 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

        0         2         0         0      0.02         0         0         0    1503.7

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

       1         0        -1         0         0         0        -1         0         0         0


 J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     150        101        110

         HEC-1 Concentration Point C627  : 24-hour storm controls

 QT        3       5890       5890       4130

         Start Hydraulically Similar Reach AS1
                 See Exhibit 1, Manning's n Value Map.
 NC    0.080      0.080      0.060        0.1        0.3

   Section 1.521 is section 1 of 3 for Normal Depth Calculation
 ET                            9.1                                                                  9944.73    10036.23
           HEC-1 Concentration Point C627:  24-Hr storm controls.
                 START Similar Hydraulic Reach  AS1
                 See Exhibit 1, Manning's n Value Map.
1
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                 Section 1 of 3 for SLOPE-AREA METHOD (Normal Depth Calculation)
                 Left overbank is non effective flow area:  Hard coded GR's
                              from STA 9804.9 to 9826.6 @ EL 1505
 X1    1.521         19     9953.3    10031.7         0         0       0.0                  -0.6
 GR   1520.9     9765.7     1520.9     9776.5    1510.2    9790.9      1505    9804.9       1505    9819.3
 GR     1505     9826.6     1504.9     9837.0    1505.2    9869.5    1505.3    9886.6     1506.6    9894.6
 GR   1506.9     9916.2     1505.2     9935.3    1505.0    9943.3    1500.4    9953.3     1500.1    9973.9
 GR   1499.9    10000.0     1500.0    10001.2    1500.1   10031.7    1510.6   10042.9
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  Section 1.523 is section 2 of 3 for Normal Depth Calculation

ET                          9.1                                                          9944.72    10036.23
                 Section 2 of 3 for SLOPE-AREA METHOD (Normal Depth Calculation)
                 Left overbank is non effective flow area:  Hard coded GR's
                            from STA 9804.9 to 9826.6 @ EL 1505
X1    1.523        19     9953.3    10031.7        10        10        10                  -0.4
GR   1520.9    9765.7     1520.9     9776.5    1510.2    9790.9      1505    9804.9       1505     9819.3
GR     1505    9826.6     1504.9     9837.0    1505.2    9869.5    1505.3    9886.6     1506.6     9894.6
GR   1506.9    9916.2     1505.2     9935.3    1505.0    9943.3    1500.4    9953.3     1500.1     9973.9
GR   1499.9   10000.0     1500.0    10001.2    1500.1   10031.7    1510.6   10042.9

  Section 1.525 is section 3 of 3 for Normal Depth Calculation

ET                          9.1                                                          9944.71    10036.23
                 Section 3 of 3 for SLOPE-AREA METHOD (Normal Depth Calculation)
                 Left overbank is non effective flow area:  Hard coded GR's
                            from STA 9804.9 to 9826.6 @ EL 1505
X1    1.525        19     9953.3    10031.7        10        10        10                  -0.2
GR   1520.9    9765.7     1520.9     9776.5    1510.2    9790.9      1505    9804.9       1505     9819.3
GR     1505    9826.6     1504.9     9837.0    1505.2    9869.5    1505.3    9886.6     1506.6     9894.6
GR   1506.9    9916.2     1505.2     9935.3    1505.0    9943.3    1500.4    9953.3     1500.1     9973.9
GR   1499.9   10000.0     1500.0    10001.2    1500.1   10031.7    1510.6   10042.9

NH       3        .08     9953.3        .06   10031.7        .08   10042.9
ET                          9.1                                                          9944.71    10036.24
                 Left overbank is non effective flow area:  Hard coded GR's
                            from STA 9804.9 to 9826.6 @ EL 1505
                 STREAM DISTANCE IN MILES ABOVE CONFLUENCE WITH VERDE RIVER.
X1    1.527        19     9953.3    10031.7        10        10        10
GR   1520.9    9765.7     1520.9     9776.5    1510.2    9790.9      1505    9804.9       1505     9819.3
GR     1505    9826.6     1504.9     9837.0    1505.2    9869.5    1505.3    9886.6     1506.6     9894.6
GR   1506.9    9916.2     1505.2     9935.3    1505.0    9943.3    1500.4    9953.3     1500.1     9973.9
GR   1499.9   10000.0     1500.0    10001.2    1500.1   10031.7    1510.6   10042.9

NH       3        .08     9983.5        .06   10020.7        .08   10077.8
ET                          9.1                                                          9918.34    10050.50
X1    1.577        18     9983.5    10020.7       320       250       259.4
GR   1517.9    9859.9     1517.6     9873.1    1510.0    9892.1    1510.5    9914.2     1507.7     9921.4
GR   1506.7    9935.0     1504.4     9943.4    1503.6    9960.5    1504.3    9968.1     1504.3     9983.5
GR   1503.5    9990.1     1503.3    10000.0    1503.2   10015.5    1504.5   10020.7     1506.0    10045.0
GR   1513.2   10058.7     1520.8    10069.3    1515.4   10077.8
```



```
NH       3        .08     9951.6        .06   10064.9        .08   10258.6
ET                          9.1                                                          9945.09    10071.55
X1    1.602        18     9951.6    10064.9       135       150       136.1
GR   1517.6    9879.3     1517.3     9905.8    1516.8    9931.5    1507.8    9951.6     1507.5     9972.2
GR   1506.9   10000.0     1507.5    10009.0    1508.0   10040.9    1508.1   10064.9     1511.6    10073.8
GR   1511.7   10094.5     1512.6    10111.3    1513.1   10146.6    1513.4   10172.0     1513.4    10189.2
GR   1518.4   10204.8     1520.3    10233.0    1520.6   10258.6

        AS 1.636 GR Data Surveyed by ALS
        Check Section # 1
        Ashbrook Wash:  Section #4 = 1.636 River Miles

NH       3        .08    10021.4        .06   10056.4        .08   10259.4
ET                          9.1                                                          9995.39    10192.22
                 Channel has been filled.  GR Data Surveyed By ALS.
X1    1.636        12     9995.4    10056.4       170       180       180.1
GR   1518.7    9899.4    1518.97     9905.4   1520.40    9921.4    1518.85    9995.4     1511.1    10021.4
GR   1510.6   10051.4    1512.85    10056.4    1514.15   10188.4    1518.85   10199.4     1521.4    10210.4
GR   1523.6   10239.4    1524.35    10259.4

        AS 1.686 GR Data Surveyed by ALS
        Check Section # 2
        Ashbrook Wash:  Section # 5 = 1.686 River Miles

NH       3        .08       9990        .06      10037        .08      10286
ET                          9.1                                                          9871.80    10079.53
                 Channel has been filled.  GR Data Surveyed By ALS.
X1    1.686        18       9990      10037       250       250       262.6
GR   1523.4      9778    1523.54       9787   1523.16      9860    1518.61      9877    1516.21      9990
GR   1515.0      9997    1512.11      10003    1512.11     10008    1514.21     10014    1518.11     10037
GR   1517.7     10064    1521.11      10087    1523.91     10113    1523.41     10140    1526.81     10235
GR   1527.2     10267    1525.61      10281    1526.19     10286

        HEC-1 Concentration Point C626

QT       3      5886       5886       4117

NH       3        .08    10036.3        .06   10076.3        .08   10136.4
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ET                          9.1                                                                  9881.69    10080.63
          HEC-1 Concentration Point C626:  24-Hr storm controls.
X1    1.727        33    10036.3    10076.3        200        220       213.9
GR   1525.4    9773.1     1526.8     9782.8     1528.1     9795.5      1528.2     9811.6     1528.2     9823.0
GR   1527.6    9831.4     1527.6     9847.0     1527.5     9860.8      1526.4     9872.8     1521.1     9888.3
GR   1521.0    9896.3     1520.1     9900.9     1520.6     9909.4      1520.9     9928.2     1519.3     9936.6
GR   1520.9    9944.6     1521.3     9953.6     1520.7     9959.1      1521.3     9980.3     1521.3     9990.2
GR   1521.2   10000.0     1521.7    10010.3     1520.9    10025.6      1519.7    10032.7     1520.6    10036.3
GR   1520.4   10050.7     1519.2    10070.6     1520.6    10076.3      1525.9    10084.6     1525.9    10090.7
GR   1524.0   10103.1     1524.4    10117.7     1524.2    10136.4
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NH        3       .08       9987       .06    10035.2        .08    10229.1
ET                          9.1                                                                  9967.78    10160.89
X1    1.855        25       9987    10035.2        680        700       677.4
GR   1539.3    9855.7     1539.0     9869.5     1540.0     9876.5      1540.0     9899.3     1539.0     9947.6
GR   1536.1    9957.5     1533.2     9975.6     1532.2     9987.0      1528.1     9997.9     1527.7    10000.0
GR   1527.4   10006.0     1528.5    10011.5     1530.8    10023.4      1531.5    10035.2     1531.7    10060.0
GR   1531.3   10086.0     1531.0    10104.4     1531.7    10114.8      1532.0    10153.2     1535.7    10164.8
GR   1537.3   10172.5     1536.4    10188.1     1536.7    10195.9      1536.8    10218.8     1536.0    10229.1

       START Hydraulically Similar Reach   AS2
                See Exhibit 1, Manning's n Value Map.

NH        3      .113       9980      .125    10068.8        .12    10159.1
ET                          9.1                                                                  9927.73    10119.83
                START Hydraulically Similar Reach AS2
                See Exhibit 1, Manning's n Value Map.
X1    1.980        20       9980    10112.6        660        640       659.3
GR   1552.8    9825.0     1552.6     9835.2     1554.2     9846.3      1553.9     9873.7     1553.7     9902.3
GR   1548.2    9918.4     1543.8     9934.7     1543.4     9951.4      1543.0     9980.0     1540.4     9991.3
GR   1540.4   10000.0     1540.9    10009.4     1540.9    10031.2      1541.8    10041.5     1542.2    10068.8
GR   1542.5   10112.6     1547.3    10123.5     1550.0    10135.9      1550.2    10147.1     1548.6    10159.1

NH        3      .113       9988.7    .125    10018.5        .12    10374.7
ET                          9.1                                                                  9939.26    10125.75
X1    2.071        25       9948.9    10084.3        490        475       480.4
GR   1558.5    9830.3     1558.2     9841.5     1560.2     9851.9      1561.1     9872.6     1560.7     9903.1
GR   1560.3    9926.3     1555.9     9935.6     1551.6     9948.9      1550.5     9976.2     1549.7     9988.7
GR   1547.4   10000.0     1547.2    10009.4     1548.9    10018.5      1549.7    10051.1     1550.9    10066.1
GR   1551.4   10084.3     1551.3    10115.3     1554.8    10126.0      1556.4    10140.0     1557.0    10181.0
GR   1557.2   10221.1     1556.9    10253.7     1556.8    10302.9      1556.7    10342.5     1556.2    10374.7

        BALBOA  WASH   Tributary

       HEC-1 Concentration Point C549

QT        3       5802       5802      4013

NH        3      .113       9946.9    .125      10000        .12    10156.6
ET                          9.1                                                                  9894.22    10100.95
          HEC-1 Concentration Point C549:  24-Hr storm controls.
                BALBOA WASH Tributary
X1    2.095        17       9925.4    10000        120        140       128.7
GR   1563.1    9785.9     1562.5     9828.1     1559.3     9843.4      1558.2     9878.0     1556.2     9905.9
GR   1554.1    9925.4     1553.2     9946.9     1552.7     9967.5      1551.9     9990.9     1553.6    10000.0
GR   1553.6   10020.9     1553.5    10051.4     1552.2    10065.1      1555.0    10078.1     1556.9    10099.0
GR   1558.7   10124.6     1559.1    10156.6

       HEC-1 Concentration Point C549R
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QT        3       4597       4597      2760

NH        3      .113       9955.4    .125    10023.9        .12    10088.5
ET                          9.1                                                                  9827.06    10054.90
          HEC-1 Concentration Point C549R:  24-Hr storm controls.
X1    2.200        12       9955.4    10023.9        570        490       552.7
GR   1570.0    9815.8     1566.0     9822.2     1561.3     9843.3      1561.5     9862.7     1561.2     9899.8
GR   1560.8    9955.4     1560.1     9974.9     1560.6     9994.7      1560.5    10000.0     1559.9    10023.9
GR   1564.7   10042.4     1565.5    10088.5

NH        3      .113       9924.6    .125    10048.8        .12    10070.5
ET                          9.1                                                                  9840.32    10052.48
X1    2.279        12       9924.6    10048.8        380        430       415.5
GR   1576.1    9821.9     1573.1     9829.6     1566.2     9847.2      1566.0     9924.6     1565.7     9950.2
GR   1565.7    9950.2     1565.3    10000.0     1565.1    10035.2      1565.1    10035.2     1567.0    10048.8
GR   1573.7   10061.8     1573.6    10070.5
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NH        3       .113     9895.6       .125     10021.3         .12       10071
ET                          9.1                                                                  9856.22    10063.59
X1    2.304         12     9864.7    10021.3         115         150        134.1
GR   1576.0     9842.8     1574.3     9848.1      1566.3      9864.7       1566.1     9895.6      1565.3      9901.8
GR   1566.3     9909.1     1566.2     9959.0      1566.1     10000.0       1567.3    10021.3      1567.4     10051.7
GR   1569.2    10061.5     1574.6    10071.0

  ******************************************************************************
  **************************    Culvert    622    ******************************
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        HEC-1 Concentration Point C622

QT        3       4552       4552       2697

NH        3       .113     9955.7       .125     10033.7         .12      10081.2
ET                          9.1                                                                  9878.25    10065.35
          HEC-1 Concentration Point C622:  24-Hr storm controls.
         CULVERT  622:  ASHBROOK WASH and SAGUARO BOULEVARD
            Culvert 622     Downstream: expanded flow. (SECTION 1 OF SC ROUTINE)
X1    2.382         17     9955.7    10033.7         405         405        410.2
GR   1587.5     9836.8     1584.1     9848.5      1583.7      9862.1       1572.2     9884.1      1572.8      9921.5
GR   1573.1     9932.4     1571.9     9945.0      1573.2      9955.7       1571.5     9973.7      1571.3      9982.8
GR   1571.7    10000.0     1571.2    10013.0      1571.6     10021.4       1572.5    10033.7      1572.7     10059.9
GR   1577.2    10069.5     1582.8    10081.2

        Use NC Record to set Contraction and Expansion Coefficients for Culvert.

NC     .113        .12       .125        0.3        0.5
NH        3      0.113     9984.6      0.125     10018.2       0.120     10450.2

ET                          9.1                                                                  9992.30    10011.71
1
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            Culvert 622  Outlet.  3-60" CMP's          (SECTION 2 OF SC ROUTINE)
              Photogrammetric x-sec. located 28' Downstream. (No Elev. Adjust.)
              Base Channel Elevations were  raised to Culvert Invert EL  1574.0
X1    2.405         23     9992.3    10011.7         115         130        123.1
X3       10                                                                 1581.98     1581.98
GR   1590.3     9743.4     1588.7     9776.2      1586.8      9814.6       1586.1     9855.5      1585.0      9898.6
GR   1584.0     9942.0     1574.9     9961.5      1574.4      9984.6         1574     9992.30        1574     10000.0
GR     1574    10011.7       1574    10018.2        1574     10034.9       1575.4    10050.7      1583.7     10077.0
GR   1584.1    10104.3     1585.5    10116.2      1585.1     10161.0       1585.0    10198.3      1585.0     10267.7
GR   1585.0    10347.6     1585.0    10430.9      1592.2     10450.2


SC    3.024        0.9       2.63          0          5           0         121        2.3      1575.82     1574.01

NH        3      0.113     9951.1      0.125     10036.5       0.120     10339.6

ET                          9.1                                                                  9853.96    10091.50
            Culvert 622  Inlet.   3-60" CMP's          (SECTION 3 OF SC ROUTINE)
              Photogrammetric x-sec. located 10' Upstream. (No Elev. Adjust.)
              Base Channel Elevations were lowered to Culvert Invert EL 1575.82
            Culvert 622 BT information surveyed by ALS. West top of curb.
            Culvert 622 BT information coded per figure 3.16 (HEC-2, Sept 90)
            Right overbank is non effective flow area:  Hard coded GR's
                from STA 10194.7 to STA 10308.4 @ EL 1587.6
X1    2.428         32       9995    10012.2         121         121        121
X2                           2    1580.82     1584.12
X3       10                                                                 1584.06     1584.06
X4        2    1584.75       9929     1584.3       10055

BT      -27     9684.3     1588.8                 9704.9      1587.9                  9720.8      1589.3
BT             9739.1     1589.1                 9769.2      1588.2                  9815.4      1587.5
BT             9842.7     1586.7                 9885.4      1586.1                  9927.0      1584.9
BT               9929    1584.75                   9950     1584.73                   10000     1584.06
BT              10050    1584.38                  10055      1584.3                 10061.0      1585.6
BT            10103.1     1586.9                10121.0      1586.7                 10138.5      1588.1
BT            10179.4     1588.2                10194.7      1587.6                 10209.6      1587.6
BT            10223.3     1587.6                10240.6      1587.6                 10254.4      1587.6
BT            10276.8     1587.6                10308.4      1587.6                 10339.6      1587.9

GR   1588.8     9684.3     1587.9     9704.9      1589.3      9720.8       1589.1     9739.1      1588.2      9769.2
GR   1587.5     9815.4     1586.7     9842.7      1586.1      9885.4       1584.9     9927.0      1583.9      9940.1
GR   1580.4     9951.1     1578.2     9974.5      1578.3      9994.3      1575.82       9995     1575.82       10000
GR   1575.8    10004.3    1575.82    10012.2      1576.6     10024.8       1580.2    10036.5      1585.6     10061.0
GR   1586.9    10103.1     1586.7    10121.0      1588.1     10138.5       1588.2    10179.4      1587.6     10194.7
GR   1587.6    10209.6     1587.6    10223.3      1587.6     10240.6       1587.6    10254.4      1587.6     10276.8
GR   1587.6    10308.4     1587.9    10339.6

          Return  Contraction and Expansion coefficients to Normal
1
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NC                                        0.1        0.3

NH        3       .113       9987       .125     10037.3        .12     10256.5
ET                            9.1                                                                  9887.27    10119.65
            Culvert 622     Upstream:  expanded flow.  (SECTION 4 OF SC ROUTINE)
                LEGEND WASH Tributary
X1    2.448        21       9987    10037.3        105        110       104.6
GR   1588.2    9881.6     1584.5     9896.3     1580.2     9905.4      1580.5     9927.7     1580.7     9987.0
GR   1579.7   10000.0     1579.3    10023.3     1581.4    10037.3      1581.5    10070.4     1578.8    10079.3
GR   1580.7   10084.0     1582.0    10090.7     1585.8    10099.6      1586.9    10122.3     1587.8    10158.4
GR   1588.1   10191.4     1587.9    10205.6     1586.9    10215.9      1587.1    10233.5     1586.8    10248.9
GR   1587.3   10256.5

       START Hydraulically Similar Reach   AS3
                See Exhibit 1, Manning's n Value Map.

         LEGEND  WASH   Tributary

        HEC-1 Concentration Point C622R

QT        3      3648       3648       1877

  ******************************************************************************
  ***************************    Culvert    M7    ******************************
  ******************************************************************************

  Culvert M7    Downstream fully expanded flow.  Special Culvert Section # 1

NH        3        .1     9973.9       .045     10050.6         .1       10236
ET                            9.1                                                                  9936.33    10058.71
          HEC-1 Concentration Point C622R:  24-hr storm controls.
                START Hydraulically Similar Reach AS3
                See Exhibit 1, Manning's n Value Map.
         CULVERT  M7 :  ASHBROOK WASH and BAYFIELD DRIVE
            Culvert M7      Downstream: expanded flow. (SECTION 1 OF SC ROUTINE)
X1    2.494        19       9973.9    10050.6        260        220       245.9
GR   1593.7    9831.1     1593.1     9860.6     1592.1     9894.6      1591.5     9922.3     1587.6     9934.7
GR   1583.1    9948.0     1583.0     9973.9     1582.7     9990.8      1582.4    10000.0     1581.7    10022.3
GR   1581.2   10039.0     1584.0    10050.6     1589.6    10065.5      1589.7    10103.0     1590.1    10140.4
GR   1590.5   10179.7     1591.0    10217.4     1589.8    10228.5      1589.0    10236.0

        Use NC Record to set Contraction and Expansion Coefficients for Culvert.

NC                                        0.3        0.5
NH        3      0.100     9975.4      0.045     10029.2      0.100       10246

        Culvert  M7 OUTLET              Special Culvert Section # 2

ET                            9.1                                                                  9991.00    10009.71
1
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            Culvert M7   Outlet.  3-60" CMP's          (SECTION 2 OF SC ROUTINE)
              Photogrammetric x-sec. located 12' Downstream. (No Elev. Adjust.)
X1    2.529        23       9991    10009.7        195        170       180.7
X3       10                                                                          1589.94    1589.94
GR   1599.3    9738.5     1599.3     9742.0     1599.7     9753.7      1599.8     9774.5     1598.6     9855.8
GR   1596.9    9878.6     1595.1     9919.4     1593.9     9939.3      1585.5     9960.4     1585.4     9975.4
GR   1583.1    9982.0    1583.25     9991.00    1583.4    10000.0     1583.15    10009.70    1582.9    10019.4
GR   1584.9   10029.2     1591.0    10046.7     1592.2    10061.9      1591.8    10083.1     1591.0    10119.4
GR   1590.8   10162.4     1591.0    10209.0     1591.2    10246.0

      3-60" CMP's

SC    3.024       0.9       2.63          0          5          0          84        2.3    1584.98    1584.71

NH        4      0.100     9987.3      0.045     10015.3      0.100     10047.9      0.002    10248.3

ET                            9.1                                                                  9945.80    10052.29
                Right bank is non effective flow area:  Hard coded GR's
                        from STA 10072.3 to 10248.3 @ EL 1600
            Culvert M7    Inlet.   3-60"   CMP's        (SECTION 3 OF SC ROUTINE)
              Photogrammetric x-sec. located 12' Upstream. (No Elev. Adjust.)
              Base Channel Elevations were lowered to Culvert Invert EL 1584.98
            Culvert M7  BT information Surveyed by ALS. North top of curb.
            Culvert M7  BT information coded per figure 3.16 (HEC-2, Sept 90)
X1    2.545        24       9993.7    10007.8         84         84         84
X2                            2    1589.98     1592.5                                                                  15
X3       10                                                                          1592.2     1592.2
X4        2    1592.8     9960.5     1592.2      10039

BT      -20    9757.4     1601.3                 9793.4     1601.3                   9824.3     1600.4
BT           9849.3     1599.4                 9882.7     1597.8                   9904.6     1596.8
BT           9916.7     1595.6                 9939.5     1594.8                   9958.1     1593.2
BT          9960.50     1592.8                 9971.5    1592.38                    10000    1592.38
BT            10039     1592.2                10047.9     1593.0                  10072.3       1600
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BT            10099.9      1600              10138.6       1600                10173.4       1600
BT            10214.6      1600              10248.3       1600

GR   1601.3    9757.4    1601.3    9793.4    1600.4    9824.3    1599.4    9849.3    1597.8    9882.7
GR   1596.8    9904.6    1595.6    9916.7    1594.8    9939.5    1593.2    9958.1    1590.5    9974.9
GR   1589.1    9987.3   1584.98    9993.7   1584.98   10000.0   1584.98   10007.8    1588.8   10015.3
GR   1589.7   10030.8    1592.2   10038.9    1593.0   10047.9      1600   10072.3      1600   10099.9
GR     1600   10138.6      1600   10173.4      1600   10214.6      1600   10248.3

          Return  Contraction and Expansion coefficients to Normal

NC                                    0.1       0.3

NH        3        .1    9989.8      .045   10010.8        .1   10139.4
ET                          9.1                                                    9930.61   10114.81
1
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            Culvert M7      Upstream:  expanded flow.  (SECTION 4 OF SC ROUTINE)
X1    2.558        19    9989.8   10010.8        70        70      71.3
GR   1597.4    9874.5    1596.1    9893.4    1594.9    9929.4    1589.1    9945.1    1589.2    9954.1
GR   1587.8    9960.3    1587.7    9967.7    1588.6    9970.9    1588.5    9989.8    1587.0   10000.0
GR   1587.0   10003.7    1588.4   10010.8    1588.3   10026.5    1589.1   10037.9    1593.7   10053.1
GR   1594.2   10081.5    1594.4   10112.2    1594.7   10126.6    1595.4   10139.4

NH        3        .1   10023.2      .045   10028.9        .1   10066.3
ET                          9.1                                                    9938.75   10044.51
X1    2.670        25    9959.8   10044.5       575       610      593.5
GR   1609.4    9650.9    1606.6    9663.7    1607.0    9681.1    1606.2    9700.5    1606.7    9704.7
GR   1607.0    9721.1    1606.1    9740.1    1605.4    9772.0    1604.4    9828.4    1603.9    9847.0
GR   1602.9    9870.2    1599.8    9888.9    1599.2    9926.0    1594.4    9947.4    1595.0    9959.8
GR   1594.7    9980.3    1594.4    9987.8    1594.3    9995.5    1594.3   10000.0    1594.0   10015.2
GR   1594.5   10023.2    1592.6   10028.9    1599.0   10044.5    1606.1   10059.3    1610.0   10066.3

NH        3        .1    9968.9      .045    9992.6        .1   10066.9
ET                          9.1                                                    9949.46   10045.96
            Left overbank is non effective flow area:  Hard coded GR's
                 from STA 9927.3 to 9946.4 @ EL 1607.5
X1    2.785        21    9968.9    9992.6       610       610      607.2
GR   1615.1    9809.0    1614.0    9841.4    1613.1    9875.0    1612.6    9886.4    1611.9    9903.0
GR   1610.5    9913.4    1607.5    9927.3    1607.5    9935.5    1607.5    9941.1    1607.5    9946.4
GR   1604.9    9953.7    1602.6    9968.9    1601.6    9977.4    1600.4    9988.3    1601.7    9992.6
GR   1601.8   10000.0    1602.1   10007.9    1603.9   10021.0    1605.3   10041.1    1607.4   10050.3
GR   1614.9   10066.9

NH        3        .1     10000      .045     10033        .1   10137.3
ET                          9.1                                                    9934.70   10055.59
X1    2.807        23     10000   10047.1       115       120      112.3
GR   1614.4    9896.8    1613.4    9911.0    1609.9    9929.0    1605.4    9939.7    1603.2    9949.3
GR   1604.1    9959.7    1604.2    9975.1    1603.9    9991.9    1604.4   10000.0    1603.9   10009.4
GR   1602.3   10015.1    1603.1   10033.0    1606.0   10047.1    1607.7   10056.7    1610.5   10070.3
GR   1613.5   10081.1    1617.3   10089.4    1622.1   10096.0    1627.3   10102.8    1632.4   10110.3
GR   1639.4   10119.5    1644.5   10126.9    1650.2   10137.3

NH        3        .1     10000      .045   10027.6        .1     10133
ET                          9.1                                                    9980.85   10074.87
X1    2.899        21    9990.2   10036.9       485       490      489.4
GR   1623.7    9891.7    1622.9    9911.2    1621.7    9939.2    1621.3    9947.9    1618.1    9965.3
GR   1613.2    9978.1    1611.0    9990.2    1610.7   10000.0    1609.6   10012.9    1610.3   10027.6
GR   1610.6   10036.9    1609.9   10050.9    1610.1   10060.7    1611.2   10070.2    1613.0   10075.8
GR   1615.1   10083.4    1618.4   10092.6    1620.4   10099.0    1621.2   10110.7    1621.5   10116.6
GR   1638.3   10133.0
1
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NH        3        .1    9971.8      .045   10023.9        .1   10128.6
ET                          9.1                                                    9959.81   10064.07
X1    3.008        29    9962.7   10023.9       575       600      573.7
GR   1630.8    9799.0    1631.8    9817.3    1631.6    9843.0    1631.1    9864.0    1631.0    9876.2
GR   1631.1    9882.4    1630.6    9891.7    1629.0    9913.4    1628.9    9921.5    1627.7    9938.8
GR   1625.3    9948.5    1621.1    9962.7    1619.7    9971.8    1618.7    9986.5    1617.8   10000.0
GR   1618.7   10005.4    1618.1   10015.6    1620.5   10023.9    1620.1   10039.5    1618.7   10052.9
GR   1619.3   10056.9    1622.3   10065.0    1624.3   10076.9    1625.7   10081.4    1628.5   10096.9
GR   1628.8   10111.2    1629.7   10114.7    1629.8   10118.3    1631.1   10128.6

NH        3        .1    9988.7      .045   10017.8        .1   10148.2
ET                          9.1                                                    9948.20   10032.87
                 ARROW WASH Tributary
X1    3.121        24    9988.7   10017.8       565       600      598.0
GR   1641.5    9787.2    1640.8    9824.7    1640.9    9830.1    1637.9    9837.6    1637.4    9868.2
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GR   1636.6     9880.2     1636.6     9890.8     1636.4     9910.9     1634.2     9929.4     1629.3     9961.2
GR   1629.1     9977.0     1628.9     9988.7     1625.8    10000.0     1629.3    10017.8     1630.5    10027.0
GR   1632.7    10043.1     1636.2    10055.6     1637.4    10065.6     1638.3    10080.0     1638.6    10096.9
GR   1639.3    10113.9     1640.1    10128.6     1640.8    10138.9     1641.3    10148.2

          ARROW  WASH   Tributary

        HEC-1 Concentration Point C621

NH        3        .1       9980       .045    10023.3         .1    10215.8

QT        3      3417       3417       1866

ET                            9.1                                                                  9969.40    10050.61
          HEC-1 Concentration Point C621:  24-hr storm controls
X1    3.208        22       9980    10050.6        260        335      456.4
GR   1649.5     9756.0     1651.8     9776.8     1647.5     9794.4     1646.6     9801.3     1647.8     9814.7
GR   1647.5     9869.3     1646.9     9890.1     1645.9     9904.2     1644.9     9915.9     1644.5     9930.6
GR   1642.7     9943.5     1638.2     9980.0     1635.9    10000.0     1637.0    10023.3     1639.7    10050.6
GR   1646.4    10072.8     1647.3    10112.6     1647.8    10137.9     1648.1    10157.1     1648.6    10177.8
GR   1649.1    10195.3     1649.2    10215.8


NH        3        .1       9998.3       .045    10036.8         .1    10258.8
ET                            9.1                                                                  9988.22    10058.81
X1    3.241        34       9998.3    10036.8        175        175      177.3
GR   1655.6     9679.6     1654.7     9699.2     1654.0     9722.2     1652.9     9744.9     1651.8     9769.6
GR   1651.6     9787.1     1651.0     9809.3     1649.9     9822.4     1649.0     9839.1     1648.3     9863.0
GR   1647.4     9889.1     1647.0     9922.3     1646.1     9955.6     1646.0     9974.8     1645.7     9983.9
GR   1641.4     9998.3     1640.9    10000.0     1641.4    10013.6     1641.9    10036.8     1643.9    10055.3
GR   1645.5    10066.3     1647.1    10079.1     1649.4    10094.6     1650.9    10109.4     1652.2    10123.1
GR   1652.6    10145.6     1653.7    10155.4     1654.1    10164.4     1654.1    10190.1     1653.6    10210.6
GR   1654.6    10230.9     1656.8    10239.6     1657.3    10248.5     1657.9    10258.8

        HEC-1 Concentration Point C613
1
   17OCT96      17:26:36                                                                                    PAGE   11


QT        3      2971       2971       1639

NH        3        .1       9994.8       .045      10014         .1      10196
ET                            9.1                                                                  9986.79    10100.35
          HEC-1 Concentration Point C613:  24-hr storm controls.
X1    3.323        30       9986.8    10035.6        420        440      429.5
GR   1661.3     9850.1     1660.8     9863.7     1663.4     9877.7     1663.2     9892.7     1658.3     9909.9
GR   1657.2     9934.0     1656.7     9948.5     1656.4     9961.8     1655.6     9978.7     1654.5     9986.8
GR   1649.8     9994.8     1649.8    10000.0     1651.4    10014.0     1652.0    10035.6     1651.5    10056.8
GR   1651.0    10074.8     1650.4    10089.9     1650.3    10093.9     1653.2    10099.9     1656.3    10104.6
GR   1658.7    10112.2     1660.4    10118.8     1660.6    10128.2     1661.2    10138.4     1662.0    10146.3
GR   1663.1    10154.2     1663.3    10161.8     1663.7    10171.9     1663.6    10187.9     1663.3    10196.0


NH        3        .1       9986       .045    10028.9         .1    10250.3
ET                            9.1                                                                  9976.51    10061.39
X1    3.421        29       9977.8    10028.9        510        505      518.2
GR   1667.8     9775.1     1668.8     9788.5     1669.6     9813.4     1670.1     9817.7     1670.2     9880.7
GR   1669.5     9899.9     1668.4     9935.3     1667.7     9953.4     1667.1     9965.8     1662.4     9977.8
GR   1660.1     9986.0     1660.0    10000.0     1660.5    10016.3     1661.0    10028.9     1661.4    10051.0
GR   1661.9    10057.7     1665.2    10069.8     1668.4    10078.2     1670.4    10084.7     1670.6    10110.0
GR   1670.9    10124.0     1673.8    10138.4     1674.2    10151.7     1674.0    10161.5     1674.3    10210.7
GR   1674.3    10222.3     1675.4    10233.3     1675.3    10239.5     1674.2    10250.3

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  **************************    Culvert  608    ******************************
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        HEC-1 Concentration Point C608

QT        3      2950       2950       1642

NH        3        .1       9973.3       .045    10019.6         .1    10305.1
ET                            9.1                                                                  9965.79    10048.85
          HEC-1 Concentration Point C608:  24-Hr storm controls.
         CULVERT  608:  ASHBROOK WASH and HAMPSTEAD DRIVE
            Culvert 608     Downstream: expanded flow. (SECTION 1 OF SC ROUTINE)
X1    3.487        38       9973.3    10019.6        350        340      351.5
GR   1683.7     9708.3     1682.9     9729.6     1682.8     9752.4     1680.6     9768.8     1680.0     9782.9
GR   1679.7     9846.6     1678.4     9856.0     1677.3     9873.6     1677.2     9905.2     1675.0     9916.4
GR   1675.0     9949.4     1670.5     9960.7     1668.0     9973.3     1667.2     9982.3     1666.6     9990.5
GR   1666.6    10000.0     1666.7    10012.0     1668.6    10019.6     1669.8    10032.0     1669.0    10043.4
GR   1670.4    10059.0     1671.5    10065.9     1676.5    10081.4     1677.2    10093.7     1677.2    10109.9
GR   1676.8    10124.4     1678.8    10132.2     1680.3    10140.9     1681.0    10151.4     1681.0    10168.1
GR   1681.6    10224.8     1682.0    10244.0     1682.9    10255.5     1682.1    10265.9     1682.7    10274.1
GR   1683.4    10288.2     1683.5    10303.3     1683.5    10305.1

        Use NC Record to set Contraction and Expansion Coefficients for Culvert.
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NC                                    0.3       0.5
NH      3     0.100    9978.5    0.045   10029.4     0.100   10282.7

ET                        9.1                                                  9988.69   10017.10
          Culvert 608  Outlet.   3-10'x 7' Box       (SECTION 2 OF SC ROUTINE)
            Photogrammetric x-sec. located 24.4' Downstream. (No Elev. Adjust.
X1   3.519       30    9988.7   10017.1       170       170     168.3
X3      10                                                          1678.5    1678.5
GR  1688.0   9703.2    1686.8    9716.7    1686.3    9734.4    1685.9   9751.2    1684.6    9768.9
GR  1681.6   9793.0    1682.1    9800.9    1681.3    9839.1    1680.2   9861.1    1679.0    9880.8
GR  1680.4   9889.8    1679.0    9923.2    1674.9    9945.8    1673.2   9957.2    1672.5    9978.5
GR  1670.8   9988.7    1670.8   10000.0    1670.6   10017.1    1671.7  10029.4    1675.6   10052.6
GR  1678.0  10070.8    1679.1   10110.3    1680.8   10149.4    1682.6  10183.3    1683.9   10203.9
GR  1683.9  10221.3    1683.4   10222.7    1683.5   10254.8    1683.9  10257.7    1684.3   10282.7

SC  3.013     0.5      2.63         0         7        10      61.5      8.1   1673.19   1672.71

NH      3     0.100    9980.8    0.045   10013.8     0.100   10300

ET                        9.1                                                  9980.79   10013.80
          Culvert 608  Inlet.   3-10'x7'  Box       (SECTION 3 OF SC ROUTINE)
            Photogrammetric x-sec. located 10' Upstream. (No Elev. Adjust.)
          Culvert 608 BT information Surveyed by ALS. West top of curb.
X1   3.531       21    9980.8   10013.8      61.5      61.5      61.5
X2                         2   1680.19   1681.95
X3      10                                                          1681.57   1681.57

BT     -11   9708.7    1690.0                 9800   1684.76                9850   1682.76
BT            9900   1681.89                 9950   1681.57               10000   1681.87
BT           10050   1682.36                10100   1682.86               10150   1683.35
BT           10200    1683.8                10300    1685.5

GR  1690.0   9708.7    1686.7    9747.3    1683.8    9786.3    1680.6   9833.4    1678.7    9874.1
GR  1677.5   9920.2    1677.2    9952.6    1677.1    9974.2    1673.1   9980.8    1671.8    9991.0
GR  1673.2  10000.0    1671.7   10013.8    1672.3   10022.9    1677.1  10025.3    1679.3   10033.9
GR  1679.8  10071.4    1680.7   10123.5    1682.0   10161.6    1682.7  10205.9    1682.8   10240.9
GR  1685.5     10300

        Return  Contraction and Expansion coefficients to Normal

NC                                    0.1       0.3

NH      3       .1    9962.2      .045   10028.7        .1   10309.5
ET                        9.1                                                  9950.19   10057.31
          Culvert 608     Upstream:  expanded flow.  (SECTION 4 OF SC ROUTINE)
X1   3.544       30    9950.2   10057.3        75        75      71.3
GR  1691.5   9663.5    1686.9    9680.4    1686.0    9706.3    1684.4   9731.7    1682.5    9764.7
GR  1680.6   9792.6    1679.2    9806.3    1678.1    9851.1    1677.0   9894.2    1677.4    9903.1
GR  1677.6   9933.6    1676.9    9950.2    1673.8    9962.2    1674.0   9972.0    1674.2   10000.0
GR  1673.7  10013.1    1674.6   10028.7    1675.2   10047.5    1676.7  10057.3    1676.5   10070.2
GR  1682.7  10078.0    1683.3   10092.7    1683.0   10114.2    1684.9  10143.3    1687.2   10167.5
GR  1689.5  10185.7    1690.3   10216.9    1691.0   10240.9    1690.4  10277.5    1691.3   10309.5
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      START Hydraulically Similar Reach   AS4
              See Exhibit 1, Manning's n Value Map.

NH      3      .055    9955.4      .045   10034.2       .025     10161
ET                        9.1                                                  9955.39   10034.21
              START Hydraulically Similar Reach AS4
              See Exhibit 1, Manning's n Value Map.
X1   3.621       28    9955.4   10034.2       390       390      403.4
GR  1691.4   9676.9    1688.2    9688.9    1686.9    9712.0    1686.0   9717.7    1687.0    9723.9
GR  1687.7   9739.3    1687.0    9758.2    1687.3    9796.4    1686.8   9824.6    1686.0    9865.2
GR  1686.2   9883.7    1685.9    9907.3    1685.1    9933.7    1681.9   9955.4    1681.2    9977.5
GR  1679.1   9988.6    1678.4   10000.0    1678.3   10006.7    1681.4  10019.6    1681.9   10034.2
GR  1684.1  10047.5    1689.9   10063.4    1689.5   10072.5    1691.2  10082.2    1691.6   10106.4
GR  1692.2  10121.9    1693.5   10147.6    1693.4   10161.0

NH      3      .055     9990       .045   10062.7       .025    10093.5
ET                        9.1                                                  9980.06   10065.09
X1   3.701       19     9990   10062.7       385       420      421.7
GR  1695.8   9795.3    1692.7    9813.0    1693.7    9821.0    1693.5   9846.3    1694.8    9855.2
GR  1694.3   9877.5    1693.0    9914.9    1692.7    9947.1    1691.9   9964.8    1688.7    9981.9
GR  1687.9   9990.0    1685.2    9994.1    1684.8   10000.0    1686.3  10012.3    1687.8   10035.8
GR  1687.5  10048.9    1688.1   10062.7    1694.0   10077.7    1700.2  10093.5

NH      3      .055    9967.1      .045   10049.3       .025    10220.3
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ET                          9.1                                                                    9962.68    10051.51
X1    3.764        20     9978.8    10035.2       330       315      332.8
GR   1706.0    9923.7     1699.5     9938.0    1694.2    9951.2     1695.0    9957.9     1691.5     9967.1
GR   1691.8    9978.8     1690.9     9993.0    1690.3   10000.0     1690.6   10008.6     1691.2    10016.2
GR   1689.7   10023.7     1692.7    10035.2    1692.8   10049.3     1696.1   10068.4     1699.2    10081.5
GR   1700.2   10102.1     1701.1    10140.3    1702.4   10180.7     1703.2   10210.1     1703.5    10220.3

  ******************************************************************************
  ***************************  No Dam 4  ******************************
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1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV=     .100 CEHV=     .300
*SECNO 1.521

3265 DIVIDED FLOW

          HEC-1 Concentration Point C627:  24-Hr storm controls.
                START Similar Hydraulic Reach  AS1
                See Exhibit 1, Manning's n Value Map.
                Section 1 of 3 for SLOPE-AREA METHOD (Normal Depth Calculation)
                Left overbank is non effective flow area:  Hard coded GR's
                          from STA 9804.9 to 9826.6 @ EL 1505
     1.521      6.14   1505.44   1505.44   1503.70   1507.35      1.90       .00       .00   1499.80
    5890.0     422.6    5384.4      83.0     128.1     467.3      18.8        .0        .0   1499.50
       .00      3.30     11.52      4.40      .080      .060      .080      .000   1499.30   9802.09
   .020031        0.        0.        0.         0        11         4       .00    201.32  10038.04

*SECNO 1.523

3265 DIVIDED FLOW

                Section 2 of 3 for SLOPE-AREA METHOD (Normal Depth Calculation)
                Left overbank is non effective flow area:  Hard coded GR's
                          from STA 9804.9 to 9826.6 @ EL 1505
     1.523      6.22   1505.72   1505.66       .00   1507.55      1.83       .20       .01   1500.00
    5890.0     450.5    5355.8      83.6     137.1     473.3      19.3        .1        .0   1499.70
       .00      3.29     11.32      4.33      .080      .060      .080      .000   1499.50   9801.88
   .018996       10.       10.       10.         0         5         0       .00    202.94  10038.12

*SECNO 1.525

3265 DIVIDED FLOW

                Section 3 of 3 for SLOPE-AREA METHOD (Normal Depth Calculation)
                Left overbank is non effective flow area:  Hard coded GR's
                          from STA 9804.9 to 9826.6 @ EL 1505
     1.525      6.21   1505.91   1505.84       .00   1507.74      1.83       .19       .00   1500.20
    5890.0     449.5    5356.9      83.6     136.8     473.0      19.3        .3        .1   1499.90
       .00      3.29     11.32      4.33      .080      .060      .080      .000   1499.70   9801.89
   .019033       10.       10.       10.         0         5         0       .00    202.88  10038.12

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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

1490 NH CARD USED
*SECNO 1.527

3265 DIVIDED FLOW

                Left overbank is non effective flow area:  Hard coded GR's
                          from STA 9804.9 to 9826.6 @ EL 1505
                STREAM DISTANCE IN MILES ABOVE CONFLUENCE WITH VERDE RIVER.
     1.527      6.19   1506.09   1506.05       .00   1507.94      1.85       .19       .01   1500.40
    5890.0     441.6    5365.0      83.4     134.2     471.3      19.2        .4        .1   1500.10
       .00      3.29     11.38      4.35      .080      .060      .080      .000   1499.90   9801.95
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   .019321      10.       10.       10.        1         5         0       .00    202.42  10038.10

1490 NH CARD USED
*SECNO 1.577

3301 HV CHANGED MORE THAN HVINS

     1.577      7.68   1510.88   1508.99       .00   1511.81       .93      3.78       .09   1504.30
    5890.0    2373.7    2625.5     890.8     393.9     274.8     159.4       5.1       1.4   1504.50
       .01      6.03      9.55      5.59      .080      .060      .080      .000   1503.20   9889.91
   .010417      320.      259.      250.         2        11         0       .00    164.37  10054.28

1490 NH CARD USED
*SECNO 1.602

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .69

     1.602      5.50   1512.40   1512.01       .00   1514.01      1.61      1.99       .20   1507.80
    5890.0     106.6    5630.0     153.4      23.7     543.0      43.2       7.4       1.9   1508.10
       .01      4.49     10.37      3.55      .080      .060      .080      .000   1506.90   9941.30
   .021690      135.      136.      150.         2        14         0       .00    166.44  10107.75

1490 NH CARD USED
*SECNO 1.636
1
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


3301 HV CHANGED MORE THAN HVINS

                Channel has been filled.  GR Data Surveyed By ALS.
     1.636      6.50   1517.10   1516.47       .00   1518.14      1.03      4.07       .06   1518.85
    5890.0        .0    2661.1    3228.9        .0     275.0     486.0      10.2       2.6   1512.85
       .02       .00      9.68      6.64      .000      .068      .080      .000   1510.60  10001.26
   .023616      170.      180.      180.         2         8         0       .00    194.06  10195.32

1490 NH CARD USED
*SECNO 1.686

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.41

                Channel has been filled.  GR Data Surveyed By ALS.
     1.686      9.38   1521.49   1520.49       .00   1522.33       .84      4.17       .02   1516.21
    5890.0    2417.8    2857.4     614.8     475.3     307.8     144.9      15.1       3.9   1518.11
       .03      5.09      9.28      4.24      .080      .060      .080      .000   1512.11   9866.28
   .011940      250.      263.      250.         2        11         0       .00    224.15  10090.43

1490 NH CARD USED
*SECNO 1.727

3265 DIVIDED FLOW

3280 CROSS SECTION      1.73 EXTENDED       .48 FEET

          HEC-1 Concentration Point C626:  24-Hr storm controls.
     1.727      5.48   1524.68   1523.98       .00   1525.68       .99      3.30       .04   1520.60
    5886.0    3916.8    1892.6      76.6     583.1     184.7      28.8      19.2       5.0   1520.60
       .04      6.72     10.25      2.66      .080      .060      .080      .000   1519.20   9877.82
   .022421      200.      214.      220.         3         8         0       .00    242.63  10136.40

1490 NH CARD USED
*SECNO 1.855
     1.855      8.50   1535.90   1534.71       .00   1536.75       .85     11.06       .01   1532.20
    5886.0     219.1    2794.2    2872.8      59.3     303.8     535.4      32.6       8.5   1531.50
       .07      3.70      9.20      5.37      .080      .060      .080      .000   1527.40   9958.74
   .012216      680.      677.      700.         4        14         0       .00    207.04  10165.77

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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
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    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

1490 NH CARD USED
*SECNO 1.980

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .69

                START Hydraulically Similar Reach AS2
                See Exhibit 1, Manning's n Value Map.
     1.980       7.01   1547.41   1545.36       .00   1547.96       .55      11.18       .03   1543.00
    5886.0     1063.8    4727.3      94.9     208.7     763.9      27.5      46.8      11.6   1542.50
       .10       5.10      6.19      3.45      .113      .123      .120      .000   1540.40   9921.29
   .025563       660.      659.      640.         2        14         0       .00    202.75  10124.04

1490 NH CARD USED
*SECNO 2.071

3265 DIVIDED FLOW

3280 CROSS SECTION      2.07 EXTENDED       .37 FEET

     2.071       9.37   1556.57   1553.50       .00   1556.98       .41      9.00       .01   1551.60
    5886.0      114.2    4904.1     867.6      38.0     916.6     218.5      58.8      14.0   1551.40
       .12       3.01      5.35      3.97      .113      .119      .120      .000   1547.20   9934.18
   .014293       490.      480.      475.         2        15         0       .00    241.26  10374.70

1490 NH CARD USED
*SECNO 2.095
          HEC-1 Concentration Point C549:  24-Hr storm controls.
                BALBOA WASH Tributary
     2.095       6.95   1558.85   1556.75       .00   1559.32       .47      2.33       .02   1554.10
    5802.0      471.2    2646.0    2684.8     124.8     442.1     510.2      62.2      14.8   1553.60
       .13       3.78      5.99      5.26      .113      .122      .120      .000   1551.90   9857.57
   .022443       120.      129.      140.         2        11         0       .00    279.00  10136.57

1490 NH CARD USED
*SECNO 2.200
3280 CROSS SECTION      2.20 EXTENDED      1.22 FEET

          HEC-1 Concentration Point C549R:  24-Hr storm controls.
     2.200       6.82   1566.72   1563.50       .00   1566.93       .21      7.58       .03   1560.80
    4597.0     2557.7    1672.0     367.3     685.7     437.0     156.5      76.8      18.2   1559.90
       .17       3.73      3.83      2.35      .113      .125      .120      .000   1559.90   9821.05
   .008761       570.      553.      490.         4        11         0       .00    267.45  10088.50

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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

1490 NH CARD USED
*SECNO 2.279
     2.279       5.86   1570.96   1568.27       .00   1571.23       .28      4.28       .02   1566.00
    4597.0     1716.8    2848.5      31.8     404.9     672.0      15.2      87.7      20.4   1567.00
       .20       4.24      4.24      2.09      .113      .125      .120      .000   1565.10   9835.06
   .013402       380.      416.      430.         3        14         0       .00    221.42  10056.48

1490 NH CARD USED
*SECNO 2.304
     2.304       7.16   1572.46   1569.08       .00   1572.68       .23      1.44       .01   1566.30
    4597.0      97.4    3818.6     681.0      39.3     974.5     205.3      91.2      21.1   1567.30
       .21       2.48      3.92      3.32      .113      .122      .120      .000   1565.30   9851.93
   .009113       115.      134.      150.         2        14         0       .00    215.30  10067.23

1490 NH CARD USED
*SECNO 2.382
          HEC-1 Concentration Point C622:  24-Hr storm controls.
         CULVERT  622:  ASHBROOK WASH and SAGUARO BOULEVARD
            Culvert 622     Downstream: expanded flow. (SECTION 1 OF SC ROUTINE)
     2.382       6.16   1577.36   1574.95       .00   1577.71       .36      4.99       .04   1573.20
    4552.0     1757.4    2156.5     638.1     367.9     437.3     147.8     101.4      23.0   1572.50
       .23       4.78      4.93      4.32      .113      .125      .120      .000   1571.20   9874.23
   .017316       405.      410.      405.         2        11         0       .00    195.60  10069.83
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CCHV=     .300 CEHV=     .500
1490 NH CARD USED
*SECNO 2.405
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
            Culvert 622  Outlet.  3-60" CMP's          (SECTION 2 OF SC ROUTINE)
              Photogrammetric x-sec. located 28' Downstream. (No Elev. Adjust.)
               Base Channel Elevations were  raised to Culvert Invert EL  1574.0
     2.405      8.17   1582.17   1582.17      .00   1582.64       .47      1.93       .06   1574.00
    4552.0    1599.6     917.6    2034.8    291.7     158.5     380.2     103.9      23.5   1574.00
       .24      5.48      5.79      5.35     .116      .125      .121      .000   1574.00   9945.92
   .014414      115.      123.      130.        0        11         0       .00    126.23  10072.15
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


SPECIAL CULVERT

SC  CUNO      CUNV      ENTLC     COFQ      RDLEN     RISE      SPAN      CULVLN    CHRT      SCL       ELCHU     ELCHD
     3         .024      .90      2.63       .00      5.00       .00    121.00     2         3      1575.82   1574.01

CHART  2 - CORRUGATED METAL PIPE CULVERT
SCALE  3 - PIPE PROJECTING FROM FILL

5130, EGIC= 1908.72..MAY BE TOO LARGE IF INLET CONTROLS.
5135, EGOC= 1898.33 ..MAY BE TOO LARGE IF OUTLET CONTROLS.
1490 NH CARD USED
*SECNO 2.428

SPECIAL CULVERT INLET CONTROL + WEIR FLOW, EG =   1588.08

3265 DIVIDED FLOW

3280 CROSS SECTION      2.43 EXTENDED      .00 FEET


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.64

SPECIAL CULVERT

     EGIC      EGOC        H4     QWEIR     QCULV       VCH     ACULV     ELTRD    WEIRLN
   1908.72   1898.33      5.44     3737.      776.     4.581      58.9   1584.12      524.


            Culvert 622  Inlet.   3-60" CMP's          (SECTION 3 OF SC ROUTINE)
              Photogrammetric x-sec. located 10' Upstream. (No Elev. Adjust.)
               Base Channel Elevations were lowered to Culvert Invert EL 1575.82
            Culvert 622 BT information surveyed by ALS. West top of curb.
            Culvert 622 BT information coded per figure 3.16 (HEC-2, Sept 90)
            Right overbank is non effective flow area:  Hard coded GR's
                from STA 10194.7 to STA 10308.4 @ EL 1587.6
     2.428     12.10   1587.90       .00       .00   1588.08       .18      5.44       .00   1575.82
    4552.0    2063.3     952.5    1536.3     700.1     207.9     518.9     107.0      24.3   1575.82
       .25      2.95      4.58      2.96      .122      .125      .124      .000   1575.80   9704.89
   .005352      121.      121.      121.         2         0         0       .00    499.64  10339.60


CCHV=     .100 CEHV=     .300
1490 NH CARD USED
*SECNO 2.448
3280 CROSS SECTION      2.45 EXTENDED      1.11 FEET

            Culvert 622     Upstream:  expanded flow.  (SECTION 4 OF SC ROUTINE)
                LEGEND WASH Tributary
     2.448      9.61   1588.41   1583.16       .00   1588.52       .11       .44       .01   1580.70
    4552.0    2082.1    1207.4    1262.5     728.4     427.2     606.3     111.0      25.4   1581.40
       .26      2.86      2.83      2.08      .113      .125      .120      .000   1578.80   9881.60
   .003278      105.      105.      110.         2        22         0       .00    374.90  10256.50
```



```
    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST
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1490 NH CARD USED
*SECNO 2.494
          HEC-1 Concentration Point C622R:  24-hr storm controls.
                START Hydraulically Similar Reach AS3
                See Exhibit 1, Manning's n Value Map.
         CULVERT  M7 :  ASHBROOK WASH and BAYFIELD DRIVE
            Culvert M7      Downstream: expanded flow. (SECTION 1 OF SC ROUTINE)
     2.494      7.68   1588.88   1586.06       .00   1589.40       .52       .75       .12   1583.00
    3648.0     468.7    3136.1      43.2     200.5     509.3      31.7     118.0      26.8   1584.00
       .27      2.34      6.16      1.36      .100      .045      .100      .000   1581.20   9930.64
   .002804      260.      246.      220.         2         8         0       .00    132.94  10063.58


CCHV=     .300 CEHV=     .500
1490 NH CARD USED
*SECNO 2.529
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
            Culvert M7   Outlet.  3-60" CMP's          (SECTION 2 OF SC ROUTINE)
              Photogrammetric x-sec. located 12' Downstream. (No Elev. Adjust.)
     2.529      6.91   1590.06   1590.06       .00   1591.01       .95       .74       .22   1583.25
    3648.0    1184.8    1192.3    1270.8     195.7     126.5     166.9     120.6      27.3   1583.15
       .28      6.05      9.43      7.61      .058      .045      .049      .000   1583.15   9948.94
   .006371      195.      181.      170.         0        18         0       .00     95.07  10044.01


SPECIAL CULVERT

SC  CUNO      CUNV      ENTLC     COFQ      RDLEN     RISE      SPAN      CULVLN    CHRT      SCL       ELCHU     ELCHD
     3         .024      .90      2.63       .00      5.00       .00     84.00      2         3       1584.98   1584.71

CHART  2 - CORRUGATED METAL PIPE CULVERT
SCALE  3 - PIPE PROJECTING FROM FILL

5130, EGIC= 1799.77..MAY BE TOO LARGE IF INLET CONTROLS.
5135, EGOC= 1765.63 ..MAY BE TOO LARGE IF OUTLET CONTROLS.
1490 NH CARD USED
*SECNO 2.545

SPECIAL CULVERT INLET CONTROL + WEIR FLOW, EG =   1597.02

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.88

SPECIAL CULVERT

     EGIC      EGOC        H4     QWEIR     QCULV       VCH     ACULV     ELTRD    WEIRLN
   1799.77   1765.63      6.01     2879.      766.     7.132      58.9   1592.50      162.


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                Right bank is non effective flow area:  Hard coded GR's
                        from STA 10072.3 to 10248.3 @ EL 1600
            Culvert M7    Inlet.   3-60"   CMP's        (SECTION 3 OF SC ROUTINE)
              Photogrammetric x-sec. located 12' Upstream. (No Elev. Adjust.)
              Base Channel Elevations were lowered to Culvert Invert EL 1584.98
            Culvert M7  BT information Surveyed by ALS. North top of curb.
            Culvert M7  BT information coded per figure 3.16 (HEC-2, Sept 90)
     2.545     11.49   1596.47       .00       .00   1597.02       .55      6.01       .00   1584.98
    3648.0     732.7    1156.2    1759.0     300.1     162.1     284.7     121.8      27.5   1584.98
       .28      2.44      7.13      6.18      .075      .045      .035      .000   1584.98   9907.85
   .001797       84.       84.       84.         2         0         0       .00    152.17  10060.02


FLOW DISTRIBUTION FOR SECNO=      2.55          CWSEL=   1596.47

STA=    9908.    9975.    9987.    9994.   10008.   10015.   10031.   10048.   10060.
  PER Q=      5.8      5.0      9.2     31.7     11.5      7.2      3.8     25.6
   AREA=    156.9     82.8     60.4    162.1     71.9    112.0     79.7     21.1
    VEL=      1.4      2.2      5.6      7.1      5.9      2.4      1.8     44.4
  DEPTH=      2.3      6.7      9.4     11.5      9.6      7.2      4.7      1.7

CCHV=     .100 CEHV=     .300
1490 NH CARD USED
*SECNO 2.558
3280 CROSS SECTION      2.56 EXTENDED      1.49 FEET

            Culvert M7      Upstream:  expanded flow.  (SECTION 4 OF SC ROUTINE)
     2.558      9.89   1596.89   1592.72       .00   1597.19       .30       .14       .03   1588.50
    3648.0    1246.8    1302.3    1098.9     505.9     195.0     530.7     123.4      27.9   1588.40
       .28      2.46      6.68      2.07      .100      .045      .100      .000   1587.00   9881.96
   .002128       70.       71.       70.         2         8         0       .00    257.44  10139.40


1490 NH CARD USED
*SECNO 2.670
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3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .29

2.670	7.02	1599.62	1598.03	.00	1600.33	.71	3.02	.12	1595.00
3648.0	699.4	2948.2	.4	126.5	420.2	.4	135.4	30.6	1599.00
.31	5.53	7.02	1.00	.100	.097	.100	.000	1592.60	9900.36
.025279	575.	594.	610.	3	11	0	.00	145.42	10045.78

1490 NH CARD USED
*SECNO 2.785

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.56

Left overbank is non effective flow area: Hard coded GR's
from STA 9927.3 to 9946.4 @ EL 1607.5

2.785	8.08	1608.48	1607.72	.00	1609.92	1.44	9.37	.22	1602.60
3648.0	375.3	2057.6	1215.1	109.3	167.6	271.8	143.1	32.5	1601.70
.33	3.43	12.28	4.47	.100	.045	.100	.000	1600.40	9922.78
.010359	610.	607.	610.	4	8	0	.00	129.90	10052.68

1490 NH CARD USED
*SECNO 2.807

3301 HV CHANGED MORE THAN HVINS

2.807	8.15	1610.45	1607.38	.00	1610.87	.42	.85	.10	1604.40
3648.0	1530.7	2003.3	114.0	416.1	323.0	52.9	144.9	32.9	1606.00
.33	3.68	6.20	2.15	.100	.064	.100	.000	1602.30	9926.17
.005569	115.	112.	120.	2	14	0	.00	143.89	10070.06

1490 NH CARD USED
*SECNO 2.899

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .46

2.899	5.14	1614.74	1614.48	.00	1616.37	1.63	5.13	.36	1611.00
3648.0	152.5	2443.7	1051.8	35.0	207.5	168.3	151.6	34.3	1610.60
.35	4.36	11.78	6.25	.100	.056	.100	.000	1609.60	9974.09
.026785	485.	489.	490.	2	14	0	.00	108.00	10082.08

1490 NH CARD USED
*SECNO 3.008

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.65

3.008	6.33	1624.13	1623.15	.00	1625.27	1.14	8.85	.05	1621.10
3648.0	29.4	2952.5	666.1	15.5	316.1	180.6	157.8	35.9	1620.50
.37	1.89	9.34	3.69	.100	.047	.100	.000	1617.80	9952.45
.009842	575.	574.	600.	2	8	0	.00	123.44	10075.89

1490 NH CARD USED
*SECNO 3.121

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
ARROW WASH Tributary

3.121	7.92	1633.72	1633.72	.00	1635.88	2.16	7.33	.31	1628.90

```
    3648.0     856.8    2524.2     267.0     190.0     181.8      71.1     164.3      37.5   1629.30
       .38      4.51     13.89      3.75      .100      .045      .100      .000   1625.80   9932.52
   .015901      565.      598.      600.         0        11         0       .00    114.22  10046.74


1490 NH CARD USED
*SECNO 3.208
          HEC-1 Concentration Point C621:  24-hr storm controls
     3.208      5.75   1641.65   1641.48       .00   1643.37      1.72      7.44       .04   1638.20
    3417.0     144.0    3260.5      12.6      48.4     303.5       6.3     167.8      38.4   1639.70
       .39      2.98     10.74      1.99      .100      .051      .100      .000   1635.90   9951.99
   .019569      260.      456.      335.         2        19         0       .00    105.08  10057.07


1490 NH CARD USED
*SECNO 3.241
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
     3.241      6.36   1647.26   1647.26       .00   1648.99      1.73      2.72       .00   1641.40
    3417.0     307.5    2649.4     460.1     115.6     223.5     121.0     169.5      38.9   1641.90
       .40      2.66     11.85      3.80      .100      .045      .100      .000   1640.90   9901.00
   .012386      175.      177.      175.         0         8         0       .00    179.15  10080.16


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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


1490 NH CARD USED
*SECNO 3.323

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .64

          HEC-1 Concentration Point C613:  24-hr storm controls.
     3.323      5.62   1655.42   1654.17       .00   1656.05       .63      6.95       .11   1654.50
    2971.0       4.0    1420.7    1546.3       3.1     202.8     269.6     174.1      40.4   1652.00
       .42      1.32      7.00      5.74      .100      .081      .100      .000   1649.80   9980.09
   .022749      420.      430.      440.         3        18         0       .00    123.17  10103.25


1490 NH CARD USED
*SECNO 3.421

3301 HV CHANGED MORE THAN HVINS

     3.421      5.17   1665.17   1664.53       .00   1666.42      1.25     10.19       .19   1662.40
    2971.0      22.9    2355.7     592.4       9.8     239.9     131.1     179.2      41.7   1661.00
       .43      2.33      9.82      4.52      .100      .056      .100      .000   1660.00   9970.72
   .017474      510.      518.      505.         4        15         0       .00     98.99  10069.71


1490 NH CARD USED
*SECNO 3.487

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
          HEC-1 Concentration Point C608:  24-Hr storm controls.
         CULVERT  608:  ASHBROOK WASH and HAMPSTEAD DRIVE
            Culvert 608      Downstream: expanded flow. (SECTION 1 OF SC ROUTINE)
     3.487      5.21   1671.81   1671.81       .00   1673.57      1.76      5.65       .15   1668.00
    2950.0     111.5    2528.8     309.7      34.5     221.3      99.0     182.1      42.6   1668.60
       .44      3.23     11.42      3.13      .100      .045      .100      .000   1666.60   9957.40
   .014987      350.      352.      340.         0         5         0       .00    109.47  10066.87


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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


CCHV=     .300 CEHV=     .500
1490 NH CARD USED
*SECNO 3.519
```

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1678.50 ELREA= 1678.50

Culvert 608 Outlet. 3-10'x 7' Box (SECTION 2 OF SC ROUTINE)
Photogrammetric x-sec. located 24.4' Downstream. (No Elev. Adjust.

3.519	7.06	1677.66	1677.66	.00	1681.16	3.49	2.58	.87	1670.80
2950.0	.0	2950.0	.0	.0	196.7	.0	183.2	42.8	1670.60
.45	.00	15.00	.00	.000	.045	.000	.000	1670.60	9988.70
.015632	170.	168.	170.	0	11	0	.00	28.40	10017.10

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
	3	.013	.50	2.63	.00	7.00	10.00	61.50	8	1	1673.19	1672.71

CHART 8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL
SCALE 1 - WINGWALLS FLARED 30 TO 75 DEGREES

1490 NH CARD USED
*SECNO 3.531

SPECIAL CULVERT INLET CONTROL + WEIR FLOW, EG = 1683.11

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 4.49

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
1686.43	1684.91	1.96	706.	2214.	4.382	210.0	1681.95	285.

Culvert 608 Inlet. 3-10'x7' Box (SECTION 3 OF SC ROUTINE)
Photogrammetric x-sec. located 10' Upstream. (No Elev. Adjust.)
Culvert 608 BT information Surveyed by ALS. West top of curb.

3.531	11.25	1682.95	.00	.00	1683.11	.16	1.96	.00	1673.10
2950.0	887.9	1516.8	545.3	757.4	346.1	523.7	184.5	43.2	1671.70
.45	1.17	4.38	1.04	.100	.045	.100	.000	1671.70	9798.78
.000775	62.	62.	62.	2	0	0	.00	445.45	10244.23

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 3.544

3265 DIVIDED FLOW

Culvert 608 Upstream: expanded flow. (SECTION 4 OF SC ROUTINE)

3.544	9.42	1683.12	1677.50	.00	1683.17	.05	.05	.01	1676.90
2950.0	867.9	1960.4	121.7	853.3	921.1	114.4	187.4	43.8	1676.70
.46	1.02	2.13	1.06	.100	.069	.100	.000	1673.70	9753.91
.000552	75.	71.	75.	2	17	0	.00	344.93	10116.05

1490 NH CARD USED
*SECNO 3.621

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
START Hydraulically Similar Reach AS4
See Exhibit 1, Manning's n Value Map.

3.621	5.65	1683.95	1683.95	.00	1685.47	1.52	.64	.44	1681.90
2950.0	51.2	2798.6	100.2	14.2	278.4	12.7	197.4	45.9	1681.90
.48	3.60	10.05	7.90	.055	.045	.025	.000	1678.30	9941.50
.017389	390.	403.	390.	0	14	0	.00	105.09	10046.59

1490 NH CARD USED
*SECNO 3.701

```
     3.701      5.93   1690.73   1690.50       .00   1692.12      1.39      6.63       .01   1687.90
    2950.0     150.3    2728.2      71.6      30.7     281.8       8.8     200.4      46.9   1688.10
       .49      4.90      9.68      8.15      .055      .045      .025      .000   1684.80   9971.06
   .014365      385.      422.      420.         3         5         0       .00     98.32  10069.38


1490 NH CARD USED
*SECNO 3.764
     3.764      5.48   1695.18   1694.80       .00   1696.31      1.13      4.17       .03   1691.80
    2950.0     419.8    2198.1     332.1      64.4     241.4      50.9     203.0      47.7   1692.70
       .50      6.52      9.11      6.52      .047      .045      .038      .000   1689.70   9948.74
   .011100      330.      333.      315.         2        15         0       .00    114.39  10063.13


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T1   *  FOUNTAIN HILLS ADMP                          File: FU-AS.IH2
T2   *  Project No. 63                                 By: ccc
T3   *  Fu Cond/With Dam
T4   *  Extracted from Ftn Hills FDS model with changes as follows:
T4   *    (a) The discharge values are changed to reflect discharges
T5   *        with and without Dam 4.
T6   *    (b) Cross-sections above Dam 4 were removed.
T7   *  NOTES:
T8   *    (a) Sources of 100-yr discharge for the future condition:
T9   *            HEC1 Models ===> FUND4-24.* AND FUND4-6.*
T9   *    (b) Runs are for future condition with and without Dam 4.

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0         4         0         0      0.02         0         0         0    1503.7

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     15         0        -1         0         0         0        -1         0         0         0

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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*PROF 2

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV=     .100 CEHV=     .300
*SECNO 1.521

3265 DIVIDED FLOW

          HEC-1 Concentration Point C627:  24-Hr storm controls.
                START Similar Hydraulic Reach  AS1
                See Exhibit 1, Manning's n Value Map.
                Section 1 of 3 for SLOPE-AREA METHOD (Normal Depth Calculation)
                Left overbank is non effective flow area:  Hard coded GR's
                         from STA 9804.9 to 9826.6 @ EL 1505
     1.521      5.16   1504.46   1503.82   1503.70   1506.02      1.56       .00       .00   1499.80
    4130.0     104.4    3974.5      51.0      27.2     389.7      13.1        .0        .0   1499.50
       .00      3.84     10.20      3.90      .080      .060      .080      .000   1499.30   9804.75
   .019985        0.        0.        0.         0         8         5       .00    144.99  10036.99


*SECNO 1.523

3265 DIVIDED FLOW

                Section 2 of 3 for SLOPE-AREA METHOD (Normal Depth Calculation)
                Left overbank is non effective flow area:  Hard coded GR's
                         from STA 9804.9 to 9826.6 @ EL 1505
     1.523      5.16   1504.66   1504.02       .00   1506.22      1.56       .20       .00   1500.00
    4130.0     104.4    3974.5      51.0      27.2     389.7      13.1        .1        .0   1499.70
       .00      3.84     10.20      3.90      .080      .060      .080      .000   1499.50   9804.75
   .019987       10.       10.       10.         0        15         0       .00    144.97  10036.99


*SECNO 1.525

3265 DIVIDED FLOW

                Section 3 of 3 for SLOPE-AREA METHOD (Normal Depth Calculation)
                Left overbank is non effective flow area:  Hard coded GR's
                         from STA 9804.9 to 9826.6 @ EL 1505
```

```
     1.525      5.15   1504.85   1504.24       .00   1506.42       1.56       .20       .00   1500.20
    4130.0     104.4    3974.6      51.0      27.2     389.7       13.1        .2        .1   1499.90
       .00      3.84     10.20      3.90      .080      .060       .080      .000   1499.70   9804.75
   .019991       10.       10.       10.         0        12          0       .00    144.94  10036.99
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

 1490 NH CARD USED
 *SECNO 1.527

 3265 DIVIDED FLOW

                Left overbank is non effective flow area:  Hard coded GR's
                          from STA 9804.9 to 9826.6 @ EL 1505
                STREAM DISTANCE IN MILES ABOVE CONFLUENCE WITH VERDE RIVER.
     1.527      5.15   1505.05   1504.42       .00   1506.62       1.56       .20       .00   1500.40
    4130.0     104.4    3974.6      51.0      27.2     389.7       13.1        .3        .1   1500.10
       .00      3.84     10.20      3.90      .080      .060       .080      .000   1499.90   9804.75
   .019994       10.       10.       10.         0        15          0       .00    144.90  10036.99

 1490 NH CARD USED
 *SECNO 1.577

 3301 HV CHANGED MORE THAN HVINS

 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.41

     1.577      6.51   1509.71   1508.07       .00   1510.45        .74      3.75       .08   1504.30
    4130.0    1611.4    1938.5     580.1     298.4     231.1      121.2       3.7       1.0   1504.50
       .01      5.40      8.39      4.79      .080      .060       .080      .000   1503.20   9916.25
   .010119      320.      259.      250.         2        11          0       .00    135.79  10052.04

 1490 NH CARD USED
 *SECNO 1.602

 3301 HV CHANGED MORE THAN HVINS

 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .63

     1.602      4.45   1511.35   1511.03       .00   1512.72       1.37      2.08       .19   1507.80
    4130.0      57.6    4019.9      52.5      14.1     423.5       13.5       5.5       1.4   1508.10
       .02      4.08      9.49      3.90      .080      .060       .080      .000   1506.90   9943.66
   .025329      135.      136.      150.         2        14          0       .00    129.51  10073.18
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

 1490 NH CARD USED
 *SECNO 1.636

 3301 HV CHANGED MORE THAN HVINS

                Channel has been filled.  GR Data Surveyed By ALS.
     1.636      5.68   1516.28   1515.81       .00   1517.13        .86      4.36       .05   1518.85
    4130.0        .0    2060.4    2069.6        .0     230.7      372.3       7.6       2.1   1512.85
       .02       .00      8.93      5.56      .000      .067       .080      .000   1510.60  10004.02
   .023232      170.      180.      180.         2        11          0       .00    189.37  10193.39

 1490 NH CARD USED
 *SECNO 1.686

 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.40

                Channel has been filled.  GR Data Surveyed By ALS.
     1.686      8.46   1520.57   1519.81       .00   1521.28        .71      4.13       .02   1516.21
    4130.0    1565.9    2214.1     350.0     364.4     265.1       99.8      11.5       3.3   1518.11
       .03      4.30      8.35      3.51      .080      .060       .080      .000   1512.11   9869.67
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   .011796      250.      263.      250.        3        11         0       .00    213.69  10083.36

1490 NH CARD USED
*SECNO 1.727
          HEC-1 Concentration Point C626:  24-Hr storm controls.
     1.727      4.66   1523.86   1523.32      .00   1524.67       .81      3.36       .03   1520.60
    4117.0    2683.9    1403.7      29.4    453.1     151.6       8.3      14.7       4.2   1520.60
       .04      5.92      9.26      3.54     .080      .060      .080      .000   1519.20   9880.24
   .023798      200.      214.      220.        2        11         0       .00    201.16  10081.40

1490 NH CARD USED
*SECNO 1.855

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.43

     1.855      7.61   1535.01   1534.00      .00   1535.68       .67     11.00       .01   1532.20
    4117.0     110.9    2111.6    1894.5     36.6     260.9     420.5      25.2       7.4   1531.50
       .07      3.03      8.09      4.50     .080      .060      .080      .000   1527.40   9964.30
   .011598      680.      677.      700.        5        14         0       .00    198.34  10162.64

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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

1490 NH CARD USED
*SECNO 1.980

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .66

                START Hydraulically Similar Reach AS2
                See Exhibit 1, Manning's n Value Map.
     1.980      5.93   1546.33   1544.70      .00   1546.78       .44     11.07       .02   1543.00
    4117.0     636.1    3431.5      49.3    147.2     620.0      16.7      36.5      10.3   1542.50
       .11      4.32      5.53      2.96     .113      .123      .120      .000   1540.40   9925.31
   .026921      660.      659.      640.        3        11         0       .00    195.99  10121.31

1490 NH CARD USED
*SECNO 2.071

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.41

     2.071      8.23   1555.43   1552.83      .00   1555.74       .31      8.95       .01   1551.60
    4117.0      51.9    3533.6     531.4    22.7     762.1     153.6      46.0      12.5   1551.40
       .14      2.29      4.64      3.46     .113      .118      .120      .000   1547.20   9937.06
   .013634      490.      480.      475.        3        12         0       .00    194.45  10131.51

1490 NH CARD USED
*SECNO 2.095
          HEC-1 Concentration Point C549:  24-Hr storm controls.
                BALBOA WASH Tributary
     2.095      5.83   1557.73   1555.99      .00   1558.13       .40      2.36       .03   1554.10
    4013.0     222.9    1962.1    1828.0     66.4     358.2     375.8      48.6      13.1   1553.60
       .14      3.36      5.48      4.86     .113      .122      .120      .000   1551.90   9884.63
   .024876      120.      129.      140.        2         8         0       .00    226.09  10110.73

1490 NH CARD USED
*SECNO 2.200
3280 CROSS SECTION      2.20 EXTENDED       .02 FEET

          HEC-1 Concentration Point C549R:  24-Hr storm controls.
     2.200      5.62   1565.52   1562.76      .00   1565.65       .13      7.49       .03   1560.80
    2760.0    1531.4    1082.2     146.4    525.7     354.6      78.8      59.5      16.2   1559.90
       .20      2.91      3.05      1.86     .113      .125      .120      .000   1559.90   9824.36
   .007364      570.      553.      490.        5         8         0       .00    264.14  10088.50

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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

1490 NH CARD USED
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*SECNO 2.279
     2.279      4.41   1569.51   1567.56      .00   1569.70       .20      4.03       .02   1566.00
    2760.0     980.1    1770.1       9.8    277.6     491.7       6.1      67.5      18.4   1567.00
       .23      3.53      3.60      1.61     .113      .125      .120      .000   1565.10   9838.77
   .014662      380.      416.      430.        3        18         0       .00    214.90  10053.66


1490 NH CARD USED
*SECNO 2.304
     2.304      5.70   1571.00   1568.32      .00   1571.15       .15      1.44       .01   1566.30
    2760.0      45.5    2355.4     359.0     22.8     745.3     139.9      70.1      19.0   1567.30
       .24      1.99      3.16      2.57     .113      .122      .120      .000   1565.30   9854.96
   .008475      115.      134.      150.        1        19         0       .00    209.69  10064.65


1490 NH CARD USED
*SECNO 2.382

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .65

          HEC-1 Concentration Point C622:  24-Hr storm controls.
         CULVERT  622:  ASHBROOK WASH and SAGUARO BOULEVARD
            Culvert 622     Downstream: expanded flow. (SECTION 1 OF SC ROUTINE)
     2.382      4.68   1575.88   1574.17      .00   1576.14       .25      4.96       .03   1573.20
    2697.0     987.7    1360.5     348.7    250.1     322.5      97.0      77.5      20.9   1572.50
       .27      3.95      4.22      3.60     .113      .125      .120      .000   1571.20   9877.05
   .019014      405.      410.      405.        2        11         0       .00    189.65  10066.70


CCHV=     .300 CEHV=     .500
1490 NH CARD USED
*SECNO 2.405
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
            Culvert 622  Outlet.  3-60" CMP's          (SECTION 2 OF SC ROUTINE)
              Photogrammetric x-sec. located 28' Downstream. (No Elev. Adjust.)
               Base Channel Elevations were  raised to Culvert Invert EL  1574.0
     2.405      8.15   1582.15   1582.15      .00   1582.32       .17      1.08       .03   1574.00
    2697.0     947.6     543.9    1205.5    290.9     158.2     379.2      79.6      21.3   1574.00
       .28      3.26      3.44      3.18     .116      .125      .121      .000   1574.00   9945.96
   .005098      115.      123.      130.        0        17         0       .00    126.14  10072.10


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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


SPECIAL CULVERT

SC  CUNO       CUNV       ENTLC      COFQ       RDLEN      RISE       SPAN       CULVLN     CHRT       SCL        ELCHU      ELCHD
     3          .024       .90       2.63        .00       5.00        .00      121.00      2          3        1575.82    1574.01

CHART  2 - CORRUGATED METAL PIPE CULVERT
SCALE  3 - PIPE PROJECTING FROM FILL

5130, EGIC= 1694.41..MAY BE TOO LARGE IF INLET CONTROLS.
5135, EGOC= 1693.14 ..MAY BE TOO LARGE IF OUTLET CONTROLS.
1490 NH CARD USED
*SECNO 2.428

SPECIAL CULVERT INLET CONTROL + WEIR FLOW, EG =   1587.12
SPECIAL CULVERT

     EGIC       EGOC        H4      QWEIR      QCULV       VCH      ACULV      ELTRD     WEIRLN
   1694.41    1693.14      4.80      1970.       736.     3.250       58.9    1584.12       298.


            Culvert 622  Inlet.   3-60" CMP's          (SECTION 3 OF SC ROUTINE)
              Photogrammetric x-sec. located 10' Upstream. (No Elev. Adjust.)
               Base Channel Elevations were lowered to Culvert Invert EL 1575.82
            Culvert 622 BT information surveyed by ALS. West top of curb.
            Culvert 622 BT information coded per figure 3.16 (HEC-2, Sept 90)
            Right overbank is non effective flow area:  Hard coded GR's
                from STA 10194.7 to STA 10308.4 @ EL 1587.6
     2.428     11.22   1587.02       .00       .00   1587.12       .10      4.80       .00   1575.82
    2697.0    1172.6     626.5     897.9    540.6     192.8     374.7      82.2      21.9   1575.82
       .29      2.17      3.25      2.40     .123      .125      .124      .000   1575.80   9831.78
   .002980      121.      121.      121.        2         0         0       .00    293.22  10125.00


CCHV=     .100 CEHV=     .300
1490 NH CARD USED
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*SECNO 2.448

3265 DIVIDED FLOW

3280 CROSS SECTION      2.45 EXTENDED      .02 FEET

            Culvert 622     Upstream:  expanded flow.  (SECTION 4 OF SC ROUTINE)
               LEGEND WASH Tributary
     2.448      8.52   1587.32   1582.40       .00   1587.38       .06       .26       .00   1580.70
    2697.0    1261.6     755.6     679.8     615.2     372.5     404.4      85.3      22.6   1581.40
       .31      2.05      2.03      1.68      .113      .125      .120      .000   1578.80   9885.08
   .002028      105.      105.      110.         2        17         0       .00    299.13  10256.50
```



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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

1490 NH CARD USED
*SECNO 2.494
          HEC-1 Concentration Point C622R:  24-hr storm controls.
                START Hydraulically Similar Reach AS3
                See Exhibit 1, Manning's n Value Map.
         CULVERT  M7 :  ASHBROOK WASH and BAYFIELD DRIVE
            Culvert M7      Downstream: expanded flow. (SECTION 1 OF SC ROUTINE)
     2.494      6.45   1587.65   1584.75       .00   1587.87       .22       .44       .05   1583.00
    1877.0     220.8    1641.5      14.7     149.9     415.4      17.8      90.9      23.8   1584.00
       .32      1.47      3.95       .83      .100      .045      .100      .000   1581.20   9934.53
   .001515      260.      246.      220.         2        18         0       .00    125.80  10060.32

CCHV=     .300 CEHV=     .500
1490 NH CARD USED
*SECNO 2.529
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
            Culvert M7   Outlet.  3-60" CMP's          (SECTION 2 OF SC ROUTINE)
              Photogrammetric x-sec. located 12' Downstream. (No Elev. Adjust.)
     2.529      6.90   1590.05   1590.05       .00   1590.30       .25       .29       .02   1583.25
    1877.0     609.5     613.6     653.9     195.2     126.3     166.5      93.1      24.3   1583.15
       .34      3.12      4.86      3.93      .058      .045      .049      .000   1583.15   9948.97
   .001698      195.      181.      170.         0        19         0       .00     95.01  10043.98

SPECIAL CULVERT

SC  CUNO      CUNV      ENTLC     COFQ      RDLEN     RISE      SPAN      CULVLN    CHRT      SCL       ELCHU     ELCHD
     3         .024      .90      2.63       .00      5.00       .00      84.00      2         3       1584.98   1584.71

CHART  2 - CORRUGATED METAL PIPE CULVERT
SCALE  3 - PIPE PROJECTING FROM FILL

5130, EGIC= 1643.82..MAY BE TOO LARGE IF INLET CONTROLS.
5135, EGOC= 1636.53 ..MAY BE TOO LARGE IF OUTLET CONTROLS.
1490 NH CARD USED
*SECNO 2.545

SPECIAL CULVERT INLET CONTROL + WEIR FLOW, EG =   1595.17
SPECIAL CULVERT

     EGIC      EGOC        H4     QWEIR     QCULV       VCH     ACULV     ELTRD    WEIRLN
   1643.82   1636.53      4.87     1175.      686.     5.844      58.9   1592.50      127.


                Right bank is non effective flow area:  Hard coded GR's
                        from STA 10072.3 to 10248.3 @ EL 1600
            Culvert M7    Inlet.   3-60"   CMP's       (SECTION 3 OF SC ROUTINE)
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              Photogrammetric x-sec. located 12' Upstream. (No Elev. Adjust.)
               Base Channel Elevations were lowered to Culvert Invert EL 1584.98
            Culvert M7  BT information Surveyed by ALS. North top of curb.
            Culvert M7  BT information coded per figure 3.16 (HEC-2, Sept 90)
     2.545      9.89   1594.87       .00       .00   1595.17       .30      4.87       .00   1584.98
    1877.0     398.3     814.9     663.8     180.1     139.5     205.3      94.1      24.5   1584.98
       .34      2.21      5.84      3.23      .069      .045      .053      .000   1584.98   9937.48
   .001475       84.       84.       84.         2         0         0       .00    116.94  10054.42

FLOW DISTRIBUTION FOR SECNO=      2.55          CWSEL=   1594.87
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STA=    9937.    9975.    9987.    9994.   10008.   10015.   10031.   10048.   10054.
  PER Q=      3.7      5.6     11.9     43.4     15.0      8.4      3.4      8.6
   AREA=     67.1     62.9     50.1    139.5     59.9     87.1     52.2      6.1
    VEL=      1.0      1.7      4.5      5.8      4.7      1.8      1.2     26.6
  DEPTH=      1.8      5.1      7.8      9.9      8.0      5.6      3.1       .9

CCHV=     .100 CEHV=     .300
1490 NH CARD USED
*SECNO 2.558
            Culvert M7      Upstream:  expanded flow.  (SECTION 4 OF SC ROUTINE)
     2.558      8.12   1595.12   1591.23       .00   1595.29       .17       .10       .01   1588.50
    1877.0     647.6     758.7     470.7     345.2     157.8     303.7      95.2      24.7   1588.40
       .35      1.88      4.81      1.55      .100      .045      .100      .000   1587.00   9922.93
   .001462       70.       71.       70.         2        18         0       .00    211.27  10134.20


1490 NH CARD USED
*SECNO 2.670

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .16

     2.670      4.68   1597.28   1596.76       .00   1598.01       .73      2.55       .17   1595.00
    1877.0     287.0    1590.0        .0      50.3     225.4        .0     102.5      26.9   1599.00
       .37      5.71      7.05       .00      .100      .097      .000      .000   1592.60   9934.59
   .054305      575.      594.      610.         3        11         0       .00    105.70  10040.29


1490 NH CARD USED
*SECNO 2.785

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.69

            Left overbank is non effective flow area:  Hard coded GR's
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                from STA 9927.3 to 9946.4 @ EL 1607.5
     2.785      6.53   1606.93   1605.90       .00   1607.75       .81      9.72       .02   1602.60
    1877.0     141.1    1163.0     572.8      54.2     131.0     181.9     107.0      28.3   1601.70
       .40      2.61      8.88      3.15      .100      .045      .100      .000   1600.40   9947.99
   .007522      610.      607.      610.         5         8         0       .00    100.26  10048.25


1490 NH CARD USED
*SECNO 2.807

3301 HV CHANGED MORE THAN HVINS

     2.807      5.98   1608.28   1606.13       .00   1608.55       .27       .75       .05   1604.40
    1877.0     767.7    1089.2      20.1     264.5     220.9      14.6     108.2      28.6   1606.00
       .41      2.90      4.93      1.38      .100      .064      .100      .000   1602.30   9932.85
   .005842      115.      112.      120.         3        14         0       .00    126.68  10059.53


1490 NH CARD USED
*SECNO 2.899

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .44

     2.899      3.60   1613.20   1613.06       .00   1614.33      1.13      5.52       .26   1611.00
    1877.0      36.3    1311.9     528.9      13.3     135.6     103.0     112.4      29.9   1610.60
       .42      2.73      9.67      5.13      .100      .054      .100      .000   1609.60   9978.11
   .030409      485.      489.      490.         2        11         0       .00     98.40  10076.52


1490 NH CARD USED
*SECNO 3.008

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.82

     3.008      4.75   1622.55   1621.76       .00   1623.25       .70      8.87       .04   1621.10
    1877.0       3.9    1584.2     288.9       3.5     219.1     105.7     116.3      31.3   1620.50
       .45      1.12      7.23      2.73      .100      .046      .100      .000   1617.80   9957.81
   .009199      575.      574.      600.         5         8         0       .00    108.65  10066.46


1490 NH CARD USED
*SECNO 3.121

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

3720 CRITICAL DEPTH ASSUMED
                ARROW WASH Tributary
  3.121      6.16   1631.96   1631.96       .00   1633.51      1.55      7.10       .25   1628.90
 1877.0     347.3    1460.6      69.1     101.0     130.5      26.7     120.2      32.7   1629.30
    .47      3.44     11.20      2.59      .100      .045      .100      .000   1625.80   9943.96
.016087      565.      598.      600.         0        11         0       .00     93.69  10037.65

1490 NH CARD USED
*SECNO 3.208
        HEC-1 Concentration Point C621:  24-hr storm controls
  3.208      4.32   1640.22   1640.13       .00   1641.47      1.24      7.93       .03   1638.20
 1866.0      35.9    1829.8        .4      16.6     202.6        .5     122.4      33.5   1639.70
    .48      2.16     9.03       .86      .100      .048      .100      .000   1635.90   9963.58
.020927      260.      456.      335.         2        19         0       .00     88.76  10052.34

1490 NH CARD USED
*SECNO 3.241
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
  3.241      4.41   1645.31   1645.31       .00   1646.93      1.61      3.43       .11   1641.40
 1866.0      77.7    1618.0     170.3      25.7     148.7      51.6     123.4      33.8   1641.90
    .48      3.03     10.88      3.30      .100      .045      .100      .000   1640.90   9985.19
.017949      175.      177.      175.         0         8         0       .00     79.84  10065.03

1490 NH CARD USED
*SECNO 3.323

3301 HV CHANGED MORE THAN HVINS

        HEC-1 Concentration Point C613:  24-hr storm controls.
  3.323      4.60   1654.40   1653.12       .00   1654.74       .34      7.69       .13   1654.50
 1639.0        .0     786.5     852.5        .0     153.4     201.8     126.2      34.8   1652.00
    .51       .00      5.13      4.22      .000      .081      .100      .000   1649.80   9986.97
.017573      420.      430.      440.         6        19         0       .00    114.74  10101.72

1490 NH CARD USED
*SECNO 3.421
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

3301 HV CHANGED MORE THAN HVINS

  3.421      3.70   1663.70   1663.31       .00   1664.62       .91      9.70       .17   1662.40
 1639.0       3.3    1360.5     275.2       2.2     164.9      75.1     129.8      36.0   1661.00
    .53      1.52      8.25      3.66      .100      .056      .100      .000   1660.00   9974.47
.020359      510.      518.      505.         4        19         0       .00     89.85  10064.32

1490 NH CARD USED
*SECNO 3.487
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
        HEC-1 Concentration Point C608:  24-Hr storm controls.
       CULVERT  608:  ASHBROOK WASH and HAMPSTEAD DRIVE
          Culvert 608     Downstream: expanded flow. (SECTION 1 OF SC ROUTINE)
  3.487      3.91   1670.51   1670.51       .00   1671.81      1.30      6.25       .12   1668.00
 1642.0      34.1    1526.0      81.9      15.9     161.0      41.6     131.6      36.7   1668.60
    .54      2.15      9.48      1.97      .100      .045      .100      .000   1666.60   9960.68
.015774      350.      352.      340.         0         8         0       .00     99.01  10059.69

CCHV=     .300 CEHV=     .500
1490 NH CARD USED
*SECNO 3.519

3301 HV CHANGED MORE THAN HVINS
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7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1678.50 ELREA=      1678.50

            Culvert 608  Outlet.   3-10'x 7' Box       (SECTION 2 OF SC ROUTINE)
              Photogrammetric x-sec. located 24.4' Downstream. (No Elev. Adjust.
     3.519      4.82   1675.42   1675.42       .00   1677.79      2.37      2.82       .53   1670.80
    1642.0        .0    1642.0        .0        .0     133.0        .0     132.3      37.0   1670.60
       .54       .00     12.35       .00      .000      .045      .000      .000   1670.60   9988.70
   .017859      170.      168.      170.         0        11         0       .00     28.40  10017.10


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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


SPECIAL CULVERT

SC  CUNO       CUNV       ENTLC      COFQ       RDLEN      RISE       SPAN       CULVLN     CHRT       SCL        ELCHU      ELCHD
     3          .013       .50       2.63        .00       7.00      10.00      61.50      8          1        1673.19    1672.71

CHART  8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL
SCALE  1 - WINGWALLS FLARED 30 TO 75 DEGREES

1490 NH CARD USED
*SECNO 3.531

SPECIAL CULVERT OUTLET CONTROL
EGIC =   1680.497  EGOC =   1681.120  PCWSE=   1675.421  ELTRD=   1681.950


3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.86

SPECIAL CULVERT

     EGIC       EGOC        H4      QWEIR      QCULV       VCH      ACULV      ELTRD     WEIRLN
   1680.50    1681.12      3.33        0.      1642.     6.166      210.0    1681.95         0.


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1681.57 ELREA=      1681.57

            Culvert 608  Inlet.    3-10'x7'  Box       (SECTION 3 OF SC ROUTINE)
              Photogrammetric x-sec. located 10' Upstream. (No Elev. Adjust.)
            Culvert 608 BT information Surveyed by ALS. West top of curb.
     3.531      8.83   1680.53       .00       .00   1681.12       .59      3.33       .00   1673.10
    1642.0        .0    1642.0        .0        .0     266.3        .0     132.6      37.0   1671.70
       .55       .00      6.17       .00      .000      .045      .000      .000   1671.70   9980.80
   .002177       62.       62.       62.         2         0         0       .00     33.00  10013.80


CCHV=     .100 CEHV=     .300
1490 NH CARD USED
*SECNO 3.544

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.11

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            Culvert 608     Upstream:  expanded flow.  (SECTION 4 OF SC ROUTINE)
     3.544      7.50   1681.20   1676.42       .00   1681.24       .03       .06       .06   1676.90
    1642.0     371.9    1209.4      60.8     506.8     715.9      73.3     133.9      37.3   1676.70
       .56       .73      1.69       .83      .100      .069      .100      .000   1673.70   9783.72
   .000487       75.       71.       75.         2        17         0       .00    292.40  10076.12


1490 NH CARD USED
*SECNO 3.621

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
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START Hydraulically Similar Reach AS4
See Exhibit 1, Manning's n Value Map.

3.621	4.50	1682.80	1682.80	.00	1683.95	1.15	.59	.33	1681.90
1642.0	6.4	1623.1	12.5	2.8	188.0	2.5	140.7	39.0	1681.90
.57	2.32	8.63	5.10	.055	.045	.025	.000	1678.30	9949.29
.021664	390.	403.	390.	0	14	0	.00	90.36	10039.65

1490 NH CARD USED
*SECNO 3.701

3.701	5.00	1689.80	1689.38	.00	1690.61	.81	6.63	.03	1687.90
1642.0	52.7	1569.2	20.2	15.3	213.7	3.6	142.7	39.9	1688.10
.59	3.45	7.34	5.54	.055	.045	.025	.000	1684.80	9976.07
.011950	385.	422.	420.	4	5	0	.00	90.94	10067.00

1490 NH CARD USED
*SECNO 3.764

3.764	4.23	1693.93	1693.68	.00	1694.81	.88	4.18	.02	1691.80
1642.0	203.1	1350.2	88.7	34.5	170.7	20.5	144.5	40.6	1692.70
.60	5.88	7.91	4.34	.046	.045	.041	.000	1689.70	9960.70
.013290	330.	333.	315.	3	15	0	.00	95.18	10055.87

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THIS RUN EXECUTED 17OCT96 17:26:43

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

Fu Cond/No Dam

SUMMARY PRINTOUT TABLE 101

	SECNO	EGOC	ELLC	EGIC	ELTRD	QCULV	QWEIR	CLASS	H4	DEPTH	CWSEL	VCH	EG
*	2.428	1898.33	1580.82	1908.72	1584.12	775.82	3737.47	16.00	5.44	12.10	1587.90	4.58	1588.08
	2.428	1693.14	1580.82	1694.41	1584.12	736.16	1970.24	16.00	4.80	11.22	1587.02	3.25	1587.12
*	2.545	1765.63	1589.98	1799.77	1592.50	765.98	2878.83	16.00	6.01	11.49	1596.47	7.13	1597.02
	2.545	1636.53	1589.98	1643.82	1592.50	686.00	1175.30	16.00	4.87	9.89	1594.87	5.84	1595.17
*	3.531	1684.91	1680.19	1686.43	1681.95	2214.44	706.41	16.00	1.96	11.25	1682.95	4.38	1683.11
*	3.531	1681.12	1680.19	1680.50	1681.95	1642.00	.00	7.00	3.33	8.83	1680.53	6.17	1681.12

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Fu Cond/No Dam

SUMMARY PRINTOUT TABLE 110

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	1.521	1505.44	1.74	1507.35	201.32	422.63	5384.36	83.01	.00	.00	9953.30	10031.70	.00
	1.521	1504.46	.76	1506.02	144.99	104.44	3974.52	51.04	.00	.00	9953.30	10031.70	.00
	1.523	1505.72	.00	1507.55	202.94	450.53	5355.83	83.64	.00	.00	9953.30	10031.70	.00
	1.523	1504.66	.00	1506.22	144.97	104.43	3974.53	51.04	.00	.00	9953.30	10031.70	.00
	1.525	1505.91	.00	1507.74	202.88	449.50	5356.89	83.61	.00	.00	9953.30	10031.70	.00
	1.525	1504.85	.00	1506.42	144.94	104.41	3974.56	51.03	.00	.00	9953.30	10031.70	.00
	1.527	1506.09	.00	1507.94	202.42	441.57	5364.99	83.44	.00	.00	9953.30	10031.70	.00
	1.527	1505.05	.00	1506.62	144.90	104.40	3974.57	51.03	.00	.00	9953.30	10031.70	.00
	1.577	1510.88	.00	1511.81	164.37	2373.74	2625.49	890.77	.00	.00	9983.50	10020.70	.00
*	1.577	1509.71	.00	1510.45	135.79	1611.39	1938.49	580.12	.00	.00	9983.50	10020.70	.00
*	1.602	1512.40	.00	1514.01	166.44	106.57	5630.02	153.41	.00	.00	9951.60	10064.90	.00
*	1.602	1511.35	.00	1512.72	129.51	57.58	4019.92	52.50	.00	.00	9951.60	10064.90	.00
	1.636	1517.10	.00	1518.14	194.06	.00	2661.14	3228.86	.00	.00	9995.40	10056.40	.00
	1.636	1516.28	.00	1517.13	189.37	.00	2060.43	2069.57	.00	.00	9995.40	10056.40	.00

*	1.686	1521.49	.00	1522.33	224.15	2417.83	2857.37	614.80	.00	.00	9990.00	10037.00	.00
*	1.686	1520.57	.00	1521.28	213.69	1565.85	2214.11	350.04	.00	.00	9990.00	10037.00	.00
	1.727	1524.68	.00	1525.68	242.63	3916.76	1892.61	76.63	.00	.00	10036.30	10076.30	.00
	1.727	1523.86	.00	1524.67	201.16	2683.90	1403.70	29.40	.00	.00	10036.30	10076.30	.00
	1.855	1535.90	.00	1536.75	207.04	219.09	2794.15	2872.76	.00	.00	9987.00	10035.20	.00
*	1.855	1535.01	.00	1535.68	198.34	110.86	2111.64	1894.50	.00	.00	9987.00	10035.20	.00
*	1.980	1547.41	.00	1547.96	202.75	1063.81	4727.33	94.86	.00	.00	9980.00	10112.60	.00
*	1.980	1546.33	.00	1546.78	195.99	636.13	3431.53	49.34	.00	.00	9980.00	10112.60	.00
	2.071	1556.57	.00	1556.98	241.26	114.21	4904.15	867.65	.00	.00	9948.90	10084.30	.00
*	2.071	1555.43	.00	1555.74	194.45	51.95	3533.63	531.42	.00	.00	9948.90	10084.30	.00
	2.095	1558.85	.00	1559.32	279.00	471.25	2645.99	2684.76	.00	.00	9925.40	10000.00	.00
	2.095	1557.73	.00	1558.13	226.09	222.86	1962.10	1828.03	.00	.00	9925.40	10000.00	.00
	2.200	1566.72	.00	1566.93	267.45	2557.72	1672.02	367.25	.00	.00	9955.40	10023.90	.00
	2.200	1565.52	.00	1565.65	264.14	1531.35	1082.25	146.40	.00	.00	9955.40	10023.90	.00
	2.279	1570.96	.00	1571.23	221.42	1716.76	2848.49	31.75	.00	.00	9924.60	10048.80	.00
	2.279	1569.51	.00	1569.70	214.90	980.06	1770.11	9.82	.00	.00	9924.60	10048.80	.00
	2.304	1572.46	.00	1572.68	215.30	97.40	3818.60	680.99	.00	.00	9864.70	10021.30	.00
	2.304	1571.00	.00	1571.15	209.69	45.53	2355.44	359.03	.00	.00	9864.70	10021.30	.00

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SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
2.382	1577.36	.00	1577.71	195.60	1757.36	2156.49	638.15	.00	.00	9955.70	10033.70	.00
* 2.382	1575.88	.00	1576.14	189.65	987.73	1360.53	348.75	.00	.00	9955.70	10033.70	.00
* 2.405	1582.17	.00	1582.64	126.23	1599.55	917.64	2034.81	.00	.00	9992.30	10011.70	.00
* 2.405	1582.15	.00	1582.32	126.14	947.58	543.91	1205.51	.00	.00	9992.30	10011.70	.00
* 2.428	1587.90	.00	1588.08	499.64	2063.26	952.48	1536.25	.00	.00	9995.00	10012.20	.00
2.428	1587.02	.00	1587.12	293.22	1172.62	626.50	897.88	.00	.00	9995.00	10012.20	.00
2.448	1588.41	.00	1588.52	374.90	2082.07	1207.39	1262.54	.00	.00	9987.00	10037.30	.00
2.448	1587.32	.00	1587.38	299.13	1261.55	755.60	679.85	.00	.00	9987.00	10037.30	.00
2.494	1588.88	.00	1589.40	132.94	468.73	3136.07	43.20	.00	.00	9973.90	10050.60	.00
2.494	1587.65	.00	1587.87	125.80	220.77	1641.53	14.70	.00	.00	9973.90	10050.60	.00
* 2.529	1590.06	.00	1591.01	95.07	1184.84	1192.31	1270.85	.00	.00	9991.00	10009.70	.00
* 2.529	1590.05	.00	1590.30	95.01	609.47	613.64	653.89	.00	.00	9991.00	10009.70	.00
* 2.545	1596.47	.00	1597.02	152.17	732.71	1156.24	1759.04	.00	.00	9993.70	10007.80	.00
2.545	1594.87	.00	1595.17	116.94	398.28	814.95	663.77	.00	.00	9993.70	10007.80	.00
2.558	1596.89	.00	1597.19	257.44	1246.77	1302.32	1098.91	.00	.00	9989.80	10010.80	.00
2.558	1595.12	.00	1595.29	211.27	647.62	758.66	470.71	.00	.00	9989.80	10010.80	.00
* 2.670	1599.62	.00	1600.33	145.42	699.38	2948.23	.40	.00	.00	9959.80	10044.50	.00
* 2.670	1597.28	.00	1598.01	105.70	286.98	1590.02	.00	.00	.00	9959.80	10044.50	.00
* 2.785	1608.48	.00	1609.92	129.90	375.30	2057.59	1215.11	.00	.00	9968.90	9992.60	.00
* 2.785	1606.93	.00	1607.75	100.26	141.12	1163.03	572.84	.00	.00	9968.90	9992.60	.00
2.807	1610.45	.00	1610.87	143.89	1530.74	2003.28	113.98	.00	.00	10000.00	10047.10	.00
2.807	1608.28	.00	1608.55	126.68	767.72	1089.23	20.05	.00	.00	10000.00	10047.10	.00
* 2.899	1614.74	.00	1616.37	108.00	152.47	2443.72	1051.81	.00	.00	9990.20	10036.90	.00
* 2.899	1613.20	.00	1614.33	98.40	36.27	1311.88	528.85	.00	.00	9990.20	10036.90	.00
* 3.008	1624.13	.00	1625.27	123.44	29.36	2952.54	666.09	.00	.00	9962.70	10023.90	.00
* 3.008	1622.55	.00	1623.25	108.65	3.95	1584.18	288.88	.00	.00	9962.70	10023.90	.00
* 3.121	1633.72	.00	1635.88	114.22	856.80	2524.18	267.02	.00	.00	9988.70	10017.80	.00
* 3.121	1631.96	.00	1633.51	93.69	347.28	1460.64	69.08	.00	.00	9988.70	10017.80	.00
3.208	1641.65	.00	1643.37	105.08	143.98	3260.45	12.57	.00	.00	9980.00	10050.60	.00
3.208	1640.22	.00	1641.47	88.76	35.86	1829.75	.39	.00	.00	9980.00	10050.60	.00
* 3.241	1647.26	.00	1648.99	179.15	307.49	2649.40	460.11	.00	.00	9998.30	10036.80	.00
* 3.241	1645.31	.00	1646.93	79.84	77.71	1618.01	170.28	.00	.00	9998.30	10036.80	.00
* 3.323	1655.42	.00	1656.05	123.17	4.04	1420.66	1546.30	.00	.00	9986.80	10035.60	.00
3.323	1654.40	.00	1654.74	114.74	.00	786.49	852.51	.00	.00	9986.80	10035.60	.00

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SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR

	3.421	1665.17	.00	1666.42	98.99	22.89	2355.71	592.40	.00	.00	9977.80	10028.90	.00
	3.421	1663.70	.00	1664.62	89.85	3.31	1360.52	275.17	.00	.00	9977.80	10028.90	.00
*	3.487	1671.81	.00	1673.57	109.47	111.48	2528.78	309.74	.00	.00	9973.30	10019.60	.00
*	3.487	1670.51	.00	1671.81	99.01	34.11	1526.02	81.87	.00	.00	9973.30	10019.60	.00
*	3.519	1677.66	.00	1681.16	28.40	.00	2950.00	.00	.00	.00	9988.70	10017.10	.00
*	3.519	1675.42	.00	1677.79	28.40	.00	1642.00	.00	.00	.00	9988.70	10017.10	.00
*	3.531	1682.95	.00	1683.11	445.45	887.88	1516.77	545.35	.00	.00	9980.80	10013.80	.00
*	3.531	1680.53	.00	1681.12	33.00	.00	1642.00	.00	.00	.00	9980.80	10013.80	.00
	3.544	1683.12	.00	1683.17	344.93	867.90	1960.44	121.66	.00	.00	9950.20	10057.30	.00
*	3.544	1681.20	.00	1681.24	292.40	371.88	1209.36	60.75	.00	.00	9950.20	10057.30	.00
*	3.621	1683.95	.00	1685.47	105.09	51.20	2798.58	100.22	.00	.00	9955.40	10034.20	.00
*	3.621	1682.80	.00	1683.95	90.36	6.40	1623.08	12.52	.00	.00	9955.40	10034.20	.00
	3.701	1690.73	.00	1692.12	98.32	150.26	2728.17	71.56	.00	.00	9990.00	10062.70	.00
	3.701	1689.80	.00	1690.61	90.94	52.66	1569.18	20.16	.00	.00	9990.00	10062.70	.00
	3.764	1695.18	.00	1696.31	114.39	419.85	2198.09	332.06	.00	.00	9978.80	10035.20	.00
	3.764	1693.93	.00	1694.81	95.18	203.10	1350.22	88.67	.00	.00	9978.80	10035.20	.00

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Fu Cond/No Dam

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	1.521	.00	.00	.00	1499.30	5890.00	1505.44	1505.44	1507.35	200.31	11.52	614.27	416.16
	1.521	.00	.00	.00	1499.30	4130.00	1504.46	1503.82	1506.02	199.85	10.20	430.06	292.14
	1.523	10.00	.00	.00	1499.50	5890.00	1505.72	1505.66	1507.55	189.96	11.32	629.69	427.35
	1.523	10.00	.00	.00	1499.50	4130.00	1504.66	1504.02	1506.22	199.87	10.20	430.04	292.13
	1.525	10.00	.00	.00	1499.70	5890.00	1505.91	1505.84	1507.74	190.33	11.32	629.12	426.93
	1.525	10.00	.00	.00	1499.70	4130.00	1504.85	1504.24	1506.42	199.91	10.20	430.00	292.10
	1.527	10.00	.00	.00	1499.90	5890.00	1506.09	1506.05	1507.94	193.21	11.38	624.74	423.74
	1.527	10.00	.00	.00	1499.90	4130.00	1505.05	1504.42	1506.62	199.94	10.20	429.97	292.08
	1.577	259.40	.00	.00	1503.20	5890.00	1510.88	1508.99	1511.81	104.17	9.55	828.10	577.10
*	1.577	259.40	.00	.00	1503.20	4130.00	1509.71	1508.07	1510.45	101.19	8.39	650.73	410.56
*	1.602	136.10	.00	.00	1506.90	5890.00	1512.40	1512.01	1514.01	216.90	10.37	609.98	399.93
*	1.602	136.10	.00	.00	1506.90	4130.00	1511.35	1511.03	1512.72	253.29	9.49	451.08	259.50
	1.636	180.10	.00	.00	1510.60	5890.00	1517.10	1516.47	1518.14	236.16	9.68	761.04	383.27
	1.636	180.10	.00	.00	1510.60	4130.00	1516.28	1515.81	1517.13	232.32	8.93	603.05	270.96
*	1.686	262.60	.00	.00	1512.11	5890.00	1521.49	1520.49	1522.33	119.40	9.28	927.91	539.02
*	1.686	262.60	.00	.00	1512.11	4130.00	1520.57	1519.81	1521.28	117.96	8.35	729.23	380.26
	1.727	213.90	.00	.00	1519.20	5886.00	1524.68	1523.98	1525.68	224.21	10.25	796.54	393.09
	1.727	213.90	.00	.00	1519.20	4117.00	1523.86	1523.32	1524.67	237.98	9.26	613.04	266.88
	1.855	677.40	.00	.00	1527.40	5886.00	1535.90	1534.71	1536.75	122.16	9.20	898.52	532.54
*	1.855	677.40	.00	.00	1527.40	4117.00	1535.01	1534.00	1535.68	115.98	8.09	717.97	382.28
*	1.980	659.30	.00	.00	1540.40	5886.00	1547.41	1545.36	1547.96	255.63	6.19	1000.03	368.14
*	1.980	659.30	.00	.00	1540.40	4117.00	1546.33	1544.70	1546.78	269.21	5.53	783.93	250.92
	2.071	480.40	.00	.00	1547.20	5886.00	1556.57	1553.50	1556.98	142.93	5.35	1172.99	492.33
*	2.071	480.40	.00	.00	1547.20	4117.00	1555.43	1552.83	1555.74	136.34	4.64	938.44	352.58
	2.095	128.70	.00	.00	1551.90	5802.00	1558.85	1556.75	1559.32	224.43	5.99	1077.06	387.29
	2.095	128.70	.00	.00	1551.90	4013.00	1557.73	1555.99	1558.13	248.76	5.48	800.41	254.44
	2.200	552.70	.00	.00	1559.90	4597.00	1566.72	1563.50	1566.93	87.61	3.83	1279.19	491.13
	2.200	552.70	.00	.00	1559.90	2760.00	1565.52	1562.76	1565.65	73.64	3.05	959.10	321.63
	2.279	415.50	.00	.00	1565.10	4597.00	1570.96	1568.27	1571.23	134.02	4.24	1092.09	397.09
	2.279	415.50	.00	.00	1565.10	2760.00	1569.51	1567.56	1569.70	146.62	3.60	775.40	227.94
	2.304	134.10	.00	.00	1565.30	4597.00	1572.46	1569.08	1572.68	91.13	3.92	1219.12	481.56
	2.304	134.10	.00	.00	1565.30	2760.00	1571.00	1568.32	1571.15	84.75	3.16	908.05	299.80

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K

	2.382	410.20	.00	.00	1571.20	4552.00	1577.36	1574.95	1577.71	173.16	4.93	953.01	345.92
*	2.382	410.20	.00	.00	1571.20	2697.00	1575.88	1574.17	1576.14	190.14	4.22	669.57	195.59
*	2.405	123.10	.00	.00	1574.00	4552.00	1582.17	1582.17	1582.64	144.14	5.79	830.33	379.15
*	2.405	123.10	.00	.00	1574.00	2697.00	1582.15	1582.15	1582.32	50.98	3.44	828.24	377.71
*	2.428	121.00	1584.12	1580.82	1575.80	4552.00	1587.90	.00	1588.08	53.52	4.58	1426.98	622.20
	2.428	121.00	1584.12	1580.82	1575.80	2697.00	1587.02	.00	1587.12	29.80	3.25	1108.09	494.08
	2.448	104.60	.00	.00	1578.80	4552.00	1588.41	1583.16	1588.52	32.78	2.83	1761.86	795.02
	2.448	104.60	.00	.00	1578.80	2697.00	1587.32	1582.40	1587.38	20.28	2.03	1392.13	598.96
	2.494	245.90	.00	.00	1581.20	3648.00	1588.88	1586.06	1589.40	28.04	6.16	741.40	688.94
	2.494	245.90	.00	.00	1581.20	1877.00	1587.65	1584.75	1587.87	15.15	3.95	583.11	482.28
*	2.529	180.70	.00	.00	1583.15	3648.00	1590.06	1590.06	1591.01	63.71	9.43	489.10	457.04
*	2.529	180.70	.00	.00	1583.15	1877.00	1590.05	1590.05	1590.30	16.98	4.86	487.97	455.57
*	2.545	84.00	1592.50	1589.98	1584.98	3648.00	1596.47	.00	1597.02	17.97	7.13	746.98	860.44
	2.545	84.00	1592.50	1589.98	1584.98	1877.00	1594.87	.00	1595.17	14.75	5.84	524.91	488.77
	2.558	71.30	.00	.00	1587.00	3648.00	1596.89	1592.72	1597.19	21.28	6.68	1231.64	790.76
	2.558	71.30	.00	.00	1587.00	1877.00	1595.12	1591.23	1595.29	14.62	4.81	806.72	490.84
*	2.670	593.50	.00	.00	1592.60	3648.00	1599.62	1598.03	1600.33	252.79	7.02	547.05	229.44
*	2.670	593.50	.00	.00	1592.60	1877.00	1597.28	1596.76	1598.01	543.05	7.05	275.72	80.55
*	2.785	607.20	.00	.00	1600.40	3648.00	1608.48	1607.72	1609.92	103.59	12.28	548.75	358.42
*	2.785	607.20	.00	.00	1600.40	1877.00	1606.93	1605.90	1607.75	75.22	8.88	367.13	216.42
	2.807	112.30	.00	.00	1602.30	3648.00	1610.45	1607.38	1610.87	55.69	6.20	792.09	488.84
	2.807	112.30	.00	.00	1602.30	1877.00	1608.28	1606.13	1608.55	58.42	4.93	500.02	245.58
*	2.899	489.40	.00	.00	1609.60	3648.00	1614.74	1614.48	1616.37	267.85	11.78	410.71	222.90
*	2.899	489.40	.00	.00	1609.60	1877.00	1613.20	1613.06	1614.33	304.09	9.67	251.94	107.64
*	3.008	573.70	.00	.00	1617.80	3648.00	1624.13	1623.15	1625.27	98.42	9.34	512.26	367.72
*	3.008	573.70	.00	.00	1617.80	1877.00	1622.55	1621.76	1623.25	91.99	7.23	328.37	195.70
*	3.121	598.00	.00	.00	1625.80	3648.00	1633.72	1633.72	1635.88	159.01	13.89	442.91	289.29
*	3.121	598.00	.00	.00	1625.80	1877.00	1631.96	1631.96	1633.51	160.87	11.20	258.16	147.99
	3.208	456.40	.00	.00	1635.90	3417.00	1641.65	1641.48	1643.37	195.69	10.74	358.17	244.26
	3.208	456.40	.00	.00	1635.90	1866.00	1640.22	1640.13	1641.47	209.27	9.03	219.71	128.99
*	3.241	177.30	.00	.00	1640.90	3417.00	1647.26	1647.26	1648.99	123.86	11.85	460.15	307.03
*	3.241	177.30	.00	.00	1640.90	1866.00	1645.31	1645.31	1646.93	179.49	10.88	225.97	139.28
*	3.323	429.50	.00	.00	1649.80	2971.00	1655.42	1654.17	1656.05	227.49	7.00	475.49	196.98
	3.323	429.50	.00	.00	1649.80	1639.00	1654.40	1653.12	1654.74	175.73	5.13	355.17	123.64

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	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	3.421	518.20	.00	.00	1660.00	2971.00	1665.17	1664.53	1666.42	174.74	9.82	380.85	224.76
	3.421	518.20	.00	.00	1660.00	1639.00	1663.70	1663.31	1664.62	203.59	8.25	242.14	114.87
*	3.487	351.50	.00	.00	1666.60	2950.00	1671.81	1671.81	1673.57	149.87	11.42	354.80	240.97
*	3.487	351.50	.00	.00	1666.60	1642.00	1670.51	1670.51	1671.81	157.74	9.48	218.42	130.74
*	3.519	168.30	.00	.00	1670.60	2950.00	1677.66	1677.66	1681.16	156.32	15.00	196.66	235.95
*	3.519	168.30	.00	.00	1670.60	1642.00	1675.42	1675.42	1677.79	178.59	12.35	132.95	122.87
*	3.531	61.50	1681.95	1680.19	1671.70	2950.00	1682.95	.00	1683.11	7.75	4.38	1627.28	1059.41
*	3.531	61.50	1681.95	1680.19	1671.70	1642.00	1680.53	.00	1681.12	21.77	6.17	266.32	351.92
	3.544	71.30	.00	.00	1673.70	2950.00	1683.12	1677.50	1683.17	5.52	2.13	1888.87	1255.68
*	3.544	71.30	.00	.00	1673.70	1642.00	1681.20	1676.42	1681.24	4.87	1.69	1296.00	744.30
*	3.621	403.40	.00	.00	1678.30	2950.00	1683.95	1683.95	1685.47	173.89	10.05	305.37	223.71
*	3.621	403.40	.00	.00	1678.30	1642.00	1682.80	1682.80	1683.95	216.64	8.63	193.20	111.56
	3.701	421.70	.00	.00	1684.80	2950.00	1690.73	1690.50	1692.12	143.65	9.68	321.27	246.13
	3.701	421.70	.00	.00	1684.80	1642.00	1689.80	1689.38	1690.61	119.50	7.34	232.63	150.21
	3.764	332.80	.00	.00	1689.70	2950.00	1695.18	1694.80	1696.31	111.00	9.11	356.70	280.00
	3.764	332.80	.00	.00	1689.70	1642.00	1693.93	1693.68	1694.81	132.90	7.91	225.72	142.44

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Fu Cond/No Dam

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	1.521	5890.00	1505.44	.00	.00	1.74	201.32	.00
	1.521	4130.00	1504.46	-.99	.00	.76	144.99	.00
	1.523	5890.00	1505.72	.00	.28	.00	202.94	10.00
	1.523	4130.00	1504.66	-1.07	.20	.00	144.97	10.00
	1.525	5890.00	1505.91	.00	.19	.00	202.88	10.00
	1.525	4130.00	1504.85	-1.06	.20	.00	144.94	10.00
	1.527	5890.00	1506.09	.00	.18	.00	202.42	10.00
	1.527	4130.00	1505.05	-1.03	.20	.00	144.90	10.00
	1.577	5890.00	1510.88	.00	4.79	.00	164.37	259.40
*	1.577	4130.00	1509.71	-1.17	4.66	.00	135.79	259.40
*	1.602	5890.00	1512.40	.00	1.52	.00	166.44	136.10
*	1.602	4130.00	1511.35	-1.05	1.64	.00	129.51	136.10
	1.636	5890.00	1517.10	.00	4.70	.00	194.06	180.10
	1.636	4130.00	1516.28	-.83	4.93	.00	189.37	180.10
*	1.686	5890.00	1521.49	.00	4.38	.00	224.15	262.60
*	1.686	4130.00	1520.57	-.92	4.29	.00	213.69	262.60
	1.727	5886.00	1524.68	.00	3.20	.00	242.63	213.90
	1.727	4117.00	1523.86	-.82	3.29	.00	201.16	213.90
	1.855	5886.00	1535.90	.00	11.22	.00	207.04	677.40
*	1.855	4117.00	1535.01	-.89	11.15	.00	198.34	677.40
*	1.980	5886.00	1547.41	.00	11.51	.00	202.75	659.30
*	1.980	4117.00	1546.33	-1.08	11.32	.00	195.99	659.30
	2.071	5886.00	1556.57	.00	9.16	.00	241.26	480.40
*	2.071	4117.00	1555.43	-1.14	9.09	.00	194.45	480.40
	2.095	5802.00	1558.85	.00	2.28	.00	279.00	128.70
	2.095	4013.00	1557.73	-1.13	2.30	.00	226.09	128.70
	2.200	4597.00	1566.72	.00	7.87	.00	267.45	552.70
	2.200	2760.00	1565.52	-1.21	7.79	.00	264.14	552.70
	2.279	4597.00	1570.96	.00	4.23	.00	221.42	415.50
	2.279	2760.00	1569.51	-1.45	3.99	.00	214.90	415.50
	2.304	4597.00	1572.46	.00	1.50	.00	215.30	134.10
	2.304	2760.00	1571.00	-1.45	1.50	.00	209.69	134.10

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	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	2.382	4552.00	1577.36	.00	4.90	.00	195.60	410.20
*	2.382	2697.00	1575.88	-1.47	4.88	.00	189.65	410.20
*	2.405	4552.00	1582.17	.00	4.81	.00	126.23	123.10
*	2.405	2697.00	1582.15	-.02	6.27	.00	126.14	123.10
*	2.428	4552.00	1587.90	.00	5.73	.00	499.64	121.00
	2.428	2697.00	1587.02	-.88	4.87	.00	293.22	121.00
	2.448	4552.00	1588.41	.00	.51	.00	374.90	104.60
	2.448	2697.00	1587.32	-1.09	.30	.00	299.13	104.60
	2.494	3648.00	1588.88	.00	.47	.00	132.94	245.90
	2.494	1877.00	1587.65	-1.22	.33	.00	125.80	245.90
*	2.529	3648.00	1590.06	.00	1.19	.00	95.07	180.70
*	2.529	1877.00	1590.05	-.01	2.40	.00	95.01	180.70
*	2.545	3648.00	1596.47	.00	6.41	.00	152.17	84.00
	2.545	1877.00	1594.87	-1.60	4.82	.00	116.94	84.00
	2.558	3648.00	1596.89	.00	.42	.00	257.44	71.30
	2.558	1877.00	1595.12	-1.77	.25	.00	211.27	71.30
*	2.670	3648.00	1599.62	.00	2.74	.00	145.42	593.50
*	2.670	1877.00	1597.28	-2.35	2.16	.00	105.70	593.50
*	2.785	3648.00	1608.48	.00	8.85	.00	129.90	607.20
*	2.785	1877.00	1606.93	-1.54	9.66	.00	100.26	607.20
	2.807	3648.00	1610.45	.00	1.97	.00	143.89	112.30
	2.807	1877.00	1608.28	-2.17	1.35	.00	126.68	112.30

*	2.899	3648.00	1614.74	.00	4.28	.00	108.00	489.40
*	2.899	1877.00	1613.20	-1.54	4.92	.00	98.40	489.40
*	3.008	3648.00	1624.13	.00	9.39	.00	123.44	573.70
*	3.008	1877.00	1622.55	-1.58	9.35	.00	108.65	573.70
*	3.121	3648.00	1633.72	.00	9.59	.00	114.22	598.00
*	3.121	1877.00	1631.96	-1.76	9.41	.00	93.69	598.00
	3.208	3417.00	1641.65	.00	7.93	.00	105.08	456.40
	3.208	1866.00	1640.22	-1.43	8.27	.00	88.76	456.40
*	3.241	3417.00	1647.26	.00	5.60	.00	179.15	177.30
*	3.241	1866.00	1645.31	-1.94	5.09	.00	79.84	177.30
*	3.323	2971.00	1655.42	.00	8.16	.00	123.17	429.50
	3.323	1639.00	1654.40	-1.01	9.09	.00	114.74	429.50

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	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	3.421	2971.00	1665.17	.00	9.76	.00	98.99	518.20
	3.421	1639.00	1663.70	-1.47	9.30	.00	89.85	518.20
*	3.487	2950.00	1671.81	.00	6.64	.00	109.47	351.50
*	3.487	1642.00	1670.51	-1.30	6.80	.00	99.01	351.50
*	3.519	2950.00	1677.66	.00	5.85	.00	28.40	168.30
*	3.519	1642.00	1675.42	-2.24	4.91	.00	28.40	168.30
*	3.531	2950.00	1682.95	.00	5.29	.00	445.45	61.50
*	3.531	1642.00	1680.53	-2.42	5.11	.00	33.00	61.50
	3.544	2950.00	1683.12	.00	.17	.00	344.93	71.30
*	3.544	1642.00	1681.20	-1.92	.68	.00	292.40	71.30
*	3.621	2950.00	1683.95	.00	.83	.00	105.09	403.40
*	3.621	1642.00	1682.80	-1.15	1.60	.00	90.36	403.40
	3.701	2950.00	1690.73	.00	6.78	.00	98.32	421.70
	3.701	1642.00	1689.80	-.93	7.00	.00	90.94	421.70
	3.764	2950.00	1695.18	.00	4.45	.00	114.39	332.80
	3.764	1642.00	1693.93	-1.25	4.13	.00	95.18	332.80

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SUMMARY OF ERRORS AND SPECIAL NOTES

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WARNING SECNO=      1.577  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      1.602  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      1.602  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      1.686  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      1.686  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      1.855  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      1.980  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      1.980  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      2.071  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      2.382  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      2.405  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      2.405  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      2.405  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      2.405  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      2.428  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      2.529  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      2.529  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      2.529  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      2.529  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      2.545  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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WARNING SECNO=      2.670  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      2.670  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      2.785  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      2.785  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      2.899  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      2.899  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      3.008  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      3.008  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      3.121  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      3.121  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      3.121  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      3.121  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      3.241  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      3.241  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      3.241  PROFILE=  2  CRITICAL DEPTH ASSUMED
1
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CAUTION SECNO=      3.241  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      3.323  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      3.487  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      3.487  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      3.487  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      3.487  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      3.519  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      3.519  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      3.519  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      3.519  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      3.531  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      3.531  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      3.544  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      3.621  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      3.621  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      3.621  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      3.621  PROFILE=  2  MINIMUM SPECIFIC ENERGY
```

APPENDIX K

Supporting hydraulic calculations and HEC-1 model output for Alternative No. 3

```
1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*              MAY   1991           *
*            VERSION 4.0.1E         *
*                                   *
*  RUN DATE  10/21/96  TIME  11:12:03*
*                                   *
*************************************
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```
*************************************
*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*    HYDROLOGIC ENGINEERING CENTER  *
*          609 SECOND STREET        *
*       DAVIS, CALIFORNIA 95616     *
*           (916) 551-1748          *
*                                   *
*************************************
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

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

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1                                   HEC-1 INPUT                                                    PAGE  1

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

        1           ID        FOUNTAIN HILLS ADMP - Project No. 63
        2           ID        Future Condition Model                          File:    ALT3-6.IH1
        3           ID        100-Year, 6-Hour Storm, S-Hydrograph            Date:  03/26/96 CCC
        4           ID        Areal reduction by JD records
        5           ID
        6           ID        Alternative No. 3 Analysis:
        7           ID          Model reflects proposed modifications to Aspen, North Heights, and
        8           ID          SunRidge Canyon Dams
                    *
        9           IT       5                    200
       10           IO       5
       11           IN      15
                    *DIAGRAM
                    *
       12           JD    3.30    0.01
       13           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
       14           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
       15           PC   0.962   0.972   0.983   0.991   1.000
       16           JD    3.28    0.50
       17           JD    3.23    2.80
       18           PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.067   0.076
       19           PC   0.087   0.100   0.120   0.163   0.252   0.451   0.694   0.837   0.900   0.938
       20           PC   0.950   0.963   0.975   0.988   1.000
       21           JD    3.04    16.0
       22           PC   0.000   0.015   0.020   0.030   0.048   0.063   0.076   0.090   0.105   0.119
       23           PC   0.135   0.152   0.175   0.222   0.304   0.472   0.670   0.796   0.868   0.912
       24           PC   0.946   0.960   0.973   0.987   1.000
                    *

       25           KK   C560I
       26           KM        BASIN S207 (Inflow to Dam 6 - Aspen Dam)
       27           KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
       28           KM        L=      3.9  Lca=      2.2   S=  464.7  Kn= .038  LAG=  38.3
       29           KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
       30           BA    2.15
       31           LG     .17     .31    4.90     .29   31.55
       32           UI    189.    273.    681.   1079.   1350.   1645.   2155.   1382.   1135.   1002.
       33           UI    881.    763.    641.    518.    452.    411.    331.    263.    231.    207.
       34           UI    163.    145.    124.     92.     92.     92.     47.     36.     36.     36.
       35           UI     36.     36.     36.     36.     36.      0.      0.      0.      0.      0.
       36           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *

       37           KK   C560O
       38           KM      Reservoir route at C560 (Dam 6).
       39           KM       Orifice Size = 15"; Spillway Crest = 1857'; Width = 100'
       40           RS       1    ELEV  1808.8
       41           SV    0.00    1.71   14.81   34.65   60.43   93.47  135.64  183.00  186.00  191.44
       42           SV  197.00  205.00  212.00  219.00  226.40  234.00  242.00  246.00  250.00  254.00
       43           SE  1808.8  1812.0  1816.0  1820.0  1824.0  1828.0  1832.0  1835.4  1835.6  1836.0
       44           SE  1836.4  1836.8  1837.2  1837.6  1838.0  1838.4  1838.8  1839.0  1839.2  1839.4
       45           SQ       0      10      16      20      23      26      29      31      31      32
       46           SQ      32      32      32      32      33      33      33      33      33      34
       47           RL                  0.40
                    *
1                                   HEC-1 INPUT                                                    PAGE  2

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

       48           KK  560599
```

```
 49          KM      Normal depth channel route
 50          RS       1    FLOW      -1
 51          RC   0.050   0.025   0.050  3127.0  0.0272
 52          RX  9850.4  9950.4  9974.4 10000.0 10035.5 10059.8 10080.4 10104.4
 53          RY  1772.0  1771.7  1765.3  1765.3  1765.9  1768.5  1773.3  1773.7
             *

 54          KK   C578I
 55          KM        BASIN S208 (Inflow to Dam 11 - N. Heights Dam)
 56          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 57          KM        L=      3.0  Lca=      1.6   S=  488.9  Kn= .022  LAG=  17.7
 58          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 59          BA    2.00
 60          LG     .10     .25    4.80     .28   50.48
 61          UI    513.   1937.   3377.   3020.   1966.   1434.    971.    720.    461.    339.
 62          UI    233.    186.     85.     73.     73.     73.      0.      0.      0.      0.
 63          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

 64          KK   C578O
 65          KM      Reservoir route at C578 (Dam 11).
 66          KM       Orifice Size = 15"; Spill Crest Elevation = 1837'; Width = 100'
 67          RS       1    ELEV  1779.2
 68          SV    0.00   16.38   31.30   53.65   84.39  126.17  138.00  143.00  147.00  154.47
 69          SV  161.00  167.00  174.00  181.00  187.43  194.00  202.00  205.00
 70          SE  1779.2  1794.0  1798.0  1802.0  1806.0  1810.0  1810.8  1811.2  1811.6  1812.0
 71          SE  1812.4  1812.8  1813.2  1813.6  1814.0  1814.4  1814.8  1815.0
 72          SQ       0      15      20      23      26      29      31      34      34      34
 73          SQ      34      35      35      35      35      36      36      36      36      36
 74          SE  1779.2  1786.0  1790.0  1794.0  1798.0  1802.0  1806.0  1810.0  1810.8  1811.2
 75          SE  1811.6  1812.0  1812.4  1812.8  1813.2  1813.6  1814.0  1814.4  1814.8  1815.0
 76          RL                   0.97
             *

 77          KK  578599
 78          KM      Normal depth channel route
 79          RS       1    FLOW      -1
 80          RC   0.055   0.045   0.055  3762.0 0.01624
 81          RX  9928.9  9945.0  9963.1  9990.6 10012.2 10035.4 10052.8 10069.6
 82          RY  1755.7  1746.3  1746.1  1741.7  1743.3  1743.7  1744.6  1755.7
             *

 83          KK   C584I
 84          KM        BASIN S209 (Inflow to Dam 7 - SunRidge Canyon)
 85          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 86          KM        L=      3.2  Lca=      1.7   S=  582.3  Kn= .024  LAG=  19.9
 87          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 88          BA    1.60
 89          LG     .13     .28    4.62     .32   41.50
 90          UI    316.   1213.   2067.   2665.   1606.   1245.    915.    659.    495.    332.
 91          UI    255.    187.    133.     99.     52.     52.     52.     52.      0.      0.
 92          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
```



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

 93          KK   C584O
 94          KM      Reservoir route at C584 (Dam 7).
 95          KM       Orifice Size = 32"; Spillway Crest Elevation = 1930'; Width = 220'
 96          RS       1    ELEV  1884.8
 97          SV    0.00   14.55   37.17   57.52   86.65   94.00   97.00  101.00  104.90  109.00
 98          SV  113.00  118.00  122.00  126.25  131.00  133.00  136.00  139.00
 99          SE  1884.8  1908.0  1916.0  1920.0  1924.0  1924.8  1925.2  1925.6  1926.0  1926.4
100          SE  1926.8  1927.2  1927.6  1928.0  1928.4  1928.6  1928.8  1929.0
101          SQ       0      68     104     130     152     162     171     173     174     175
102          SQ     176     177     178     178     179     180     181     181     182     182
103          SE  1884.8  1892.0  1900.0  1908.0  1916.0  1920.0  1924.0  1924.8  1925.2  1925.6
104          SE  1926.0  1926.4  1926.8  1927.2  1927.6  1928.0  1928.4  1928.6  1928.8  1929.0
105          RL                   0.15
             *

106          KK  584599
107          KM      Normal depth channel route
108          RS       2    FLOW      -1
109          RC   0.065   0.050   0.065  6526.0 0.02571
110          RX  9927.6  9939.8  9951.9  9985.3 10036.0 10067.5 10119.2 10188.7
111          RY  1796.3  1791.2  1788.3  1784.1  1784.9  1788.0  1790.2  1796.4
             *

112          KK    S210
113          KM        BASIN S210 (Inflows from the watershed above Dam 4)
114          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
115          KM        L=      1.9  Lca=       .9   S=  360.7  Kn= .030  LAG=  17.0
116          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
117          BA    1.38
118          LG     .09     .24    5.61     .19   24.82
119          UI    386.   1462.   2587.   1930.   1339.    946.    649.    444.    315.    211.
120          UI    136.    104.     52.     52.     52.      0.      0.      0.      0.      0.
121          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

122          KK   C599I
123          KM      Inflow Hydrograph for Dam 4 (Golden Eagle Park)
124          KM      Hydrograph combine R560 + R578 + R584 + C210 at C599I
125          HC       4
             *
```

```
126          KK   C599O
127          KM      Reservoir route at C599 (GEPD)
128          RS       1    ELEV  1694.7
129          SV    0.00   16.85   31.66   52.71   80.85   95.00   98.00  102.00  105.00  109.00
130          SV  113.00  116.14  120.00  124.00  128.00  136.00  139.00  144.00  148.00  152.00
131          SE  1694.7  1708.0  1710.0  1712.0  1714.0  1714.8  1715.0  1715.2  1715.4  1715.6
132          SE  1715.8  1716.0  1716.2  1716.4  1716.6  1717.0  1717.2  1717.4  1717.6  1717.8
133          SQ       0      38     214     312     384     443     497     543     587     628
134          SQ     642     754     957    1262    1665    2182    2483    2811    3164    3540
135          SE  1694.7  1696.0  1700.0  1702.0  1704.0  1706.0  1708.0  1710.0  1712.0  1714.0
136          SE  1714.8  1715.4  1715.8  1716.2  1716.6  1717.0  1717.2  1717.4  1717.6  1717.8
137          RL                   0.97
138          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    25       C560I
                V
                V
    37       C560O
                V
                V
    48      560599
                .
                .
    54          .       C578I
                .          V
                .          V
    64          .       C578O
                .          V
                .          V
    77          .      578599
                .          .
                .          .
    83          .          .       C584I
                .          .          V
                .          .          V
    93          .          .       C584O
                .          .          V
                .          .          V
   106          .          .      584599
                .          .          .
                .          .          .
   112          .          .          .        S210
                .          .          .          .
                .          .          .          .
   122       C599I.................................
                V
                V
   126       C599O

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                                    ****************************************
*                                        *                                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *                                    *   U.S. ARMY CORPS OF ENGINEERS       *
*              MAY   1991                *                                    *   HYDROLOGIC ENGINEERING CENTER      *
*           VERSION 4.0.1E               *                                    *         609 SECOND STREET            *
*                                        *                                    *      DAVIS, CALIFORNIA 95616         *
*  RUN DATE  10/21/96  TIME  11:12:03    *                                    *          (916) 551-1748              *
*                                        *                                    *                                      *
****************************************                                    ****************************************


                                FOUNTAIN HILLS ADMP - Project No. 63
                                Future Condition Model                    File:    ALT3-6.IH1
                                100-Year, 6-Hour Storm, S-Hydrograph      Date:  03/26/96 CCC
                                Areal reduction by JD records

                                Alternative No. 3 Analysis:
                                  Model reflects proposed modifications to Aspen, North Heights, and
                                  SunRidge Canyon Dams

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

      IT          HYDROGRAPH TIME DATA
                         NMIN          5  MINUTES IN COMPUTATION INTERVAL
                        IDATE      1   0  STARTING DATE
                        ITIME       0000  STARTING TIME
                           NQ        200  NUMBER OF HYDROGRAPH ORDINATES
                       NDDATE      1   0  ENDING DATE
                       NDTIME       1635  ENDING TIME
                        ICENT         19  CENTURY MARK

                    COMPUTATION INTERVAL    0.08 HOURS
                         TOTAL TIME BASE   16.58 HOURS

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

 12 JD        INDEX STORM NO. 1
                 STRM        3.30  PRECIPITATION DEPTH
                 TRDA        0.01  TRANSPOSITION DRAINAGE AREA

 13 PI          PRECIPITATION PATTERN
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.03
                  0.03      0.03      0.05      0.05      0.05      0.15      0.15      0.15      0.03      0.03
                  0.03      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00

 16 JD        INDEX STORM NO. 2
                 STRM        3.28  PRECIPITATION DEPTH
                 TRDA        0.50  TRANSPOSITION DRAINAGE AREA

  0 PI          PRECIPITATION PATTERN
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.03
                  0.03      0.03      0.05      0.05      0.05      0.15      0.15      0.15      0.03      0.03
                  0.03      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00

 17 JD        INDEX STORM NO. 3
                 STRM        3.23  PRECIPITATION DEPTH
                 TRDA        2.80  TRANSPOSITION DRAINAGE AREA

 18 PI          PRECIPITATION PATTERN
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.03
                  0.03      0.03      0.07      0.07      0.07      0.08      0.08      0.08      0.05      0.05
                  0.05      0.02      0.02      0.02      0.01      0.01      0.01      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00

 21 JD        INDEX STORM NO. 4
                 STRM        3.04  PRECIPITATION DEPTH
                 TRDA       16.00  TRANSPOSITION DRAINAGE AREA

 22 PI          PRECIPITATION PATTERN
                  0.01      0.01      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.01
                  0.01      0.01      0.00      0.01      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.01      0.00      0.00      0.00      0.00      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.02      0.03
                  0.03      0.03      0.06      0.06      0.06      0.07      0.07      0.07      0.04      0.04
                  0.04      0.02      0.02      0.02      0.01      0.01      0.01      0.01      0.01      0.01
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00
1
                                        RUNOFF SUMMARY
                                   FLOW IN CUBIC FEET PER SECOND
                                  TIME IN HOURS,  AREA IN SQUARE MILES

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

        HYDROGRAPH AT
+                        C560I     2219.   4.42        455.        166.        166.      2.15

        ROUTED TO
+                        C560O       32.   5.67         32.         26.         26.      2.15

        ROUTED TO
+                       560599       32.  10.50         32.         26.         26.      2.15

        HYDROGRAPH AT
+                        C578I     3273.   4.08        516.        188.        188.      2.00

        ROUTED TO
+                        C578O       36.   4.50         36.         31.         31.      2.00

        ROUTED TO
+                       578599       36.  16.00         36.         30.         30.      2.00

        HYDROGRAPH AT
+                        C584I     2567.   4.17        379.        138.        138.      1.60

        ROUTED TO
+                        C584O      182.   4.92        178.        133.        133.      1.60

        ROUTED TO
+                       584599      182.   6.08        178.        130.        130.      1.60

        HYDROGRAPH AT
+                         S210     2520.   4.08        322.        117.        117.      1.38
```

```
        4 COMBINED AT
+                       C599I     1912.    4.08        494.       281.       281.       7.13
        ROUTED TO
+                       C599O      650.    4.83        491.       278.       278.       7.13

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

```
1*************************************
 *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              MAY   1991           *
 *           VERSION 4.0.1E          *
 *                                   *
 *  RUN DATE  10/21/96  TIME  11:15:45  *
 *                                   *
 *************************************
```

```
*************************************
*                                   *
*    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        FOUNTAIN HILLS ADMP - Project No. 63
        2           ID        Future Condition Model                        File:   ALT3-24.IH1
        3           ID        100-Year,24-Hour Storm, S-Hydrograph          Date:  03/26/96
        4           ID        Areal reduction by JD records
        5           ID
        6           ID        Alternative No. 3 Analysis:
        7           ID          Model reflects proposed modifications to Aspen, North Heights, and
        8           ID          SunRidge Canyon Dams.
                    *
        9           IT       5                    600
       10           IO       5
       11           IN      30
                    *DIAGRAM
       12           JD    4.20    0.01
       13           PC    .000    .005    .011    .016    .022    .028    .035    .041    .048    .056
       14           PC    .063    .071    .080    .089    .098    .109    .120    .133    .147    .163
       15           PC    .181    .204    .235    .283    .663    .735    .772    .799    .820    .838
       16           PC    .854    .868    .880    .891    .902    .912    .921    .929    .937    .945
       17           PC    .952    .959    .965    .972    .978    .984    .989    .995   1.000
       18           JD    4.12    1.38
       19           JD    4.12    1.60
       20           JD    4.10    2.00
       21           JD    4.10    2.15
       22           JD    3.99   10.00
                    *

       23           KK   C560I
       24           KM        BASIN S207 (Inflow to Dam 6 - Aspen Dam)
       25           KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
       26           KM        L=      3.9  Lca=      2.2   S=  464.7  Kn= .038 LAG= 38.3
       27           KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
       28           BA    2.15
       29           LG     .17     .31    4.90     .29   31.55
       30           UI    189.    273.    681.   1079.   1350.   1645.   2155.   1382.   1135.   1002.
       31           UI    881.    763.    641.    518.    452.    411.    331.    263.    231.    207.
       32           UI    163.    145.    124.     92.     92.     92.     47.     36.     36.     36.
       33           UI     36.     36.     36.     36.     36.      0.      0.      0.      0.      0.
       34           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *

       35           KK   C560O
       36           KM      Reservoir route at C560 (Dam 6).
       37           KM      Orifice Size = 15"; Spillway Crest Elevation = 1857'; Width = 100'
       38           RS       1    ELEV  1808.8
       39           SV    0.00    1.71   14.81   34.65   60.43   93.47  135.64  183.00  186.00  191.44
       40           SV  197.00  205.00  212.00  219.00  226.40  234.00  242.00  246.00  250.00  254.00
       41           SE  1808.8  1812.0  1816.0  1820.0  1824.0  1828.0  1832.0  1835.4  1835.6  1836.0
       42           SE  1836.4  1836.8  1837.2  1837.6  1838.0  1838.4  1838.8  1839.0  1839.2  1839.4
       43           SQ       0      10      16      20      23      26      29      31      31      32
       44           SQ      32      32      32      32      33      33      33      33      33      34
       45           RL                   0.40
                    *
1                                    HEC-1 INPUT                                    PAGE  2

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

       46           KK  560599
       47           KM      Normal depth channel route
       48           RS       1    FLOW      -1
       49           RC   0.050   0.025   0.050  3127.0  0.0272
```

```
 50          RX  9850.4  9950.4  9974.4 10000.0 10035.5 10059.8 10080.4 10104.4
 51          RY  1772.0  1771.7  1765.3  1765.3  1765.9  1768.5  1773.3  1773.7
             *

 52          KK   C578I
 53          KM        BASIN S208 (Inflow to Dam 11 - N. Heights Dam)
 54          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 55          KM        L=      3.0  Lca=      1.6   S=  488.9  Kn= .021  LAG=  16.9
 56          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 57          BA    2.00
 58          LG     .10     .25    4.80     .28   50.48
 59          UI    513.   1937.   3377.   3020.   1966.   1434.    971.    720.    461.    339.
 60          UI    233.    186.     85.     73.     73.     73.      0.      0.      0.      0.
 61          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

 62          KK   C578O
 63          KM      Reservoir route at C578 (Dam 11).
 64          KM       Orifice Size = 15"; Spill Crest Elevation = 1837'; Width = 100'
 65          RS       1    ELEV  1779.2
 66          SV    0.00   16.38   31.30   53.65   84.39  126.17  138.00  143.00  147.00  154.47
 67          SV  161.00  167.00  174.00  181.00  187.43  194.00  202.00  205.00
 68          SE  1779.2  1794.0  1798.0  1802.0  1806.0  1810.0  1810.8  1811.2  1811.6  1812.0
 69          SE  1812.4  1812.8  1813.2  1813.6  1814.0  1814.4  1814.8  1815.0
 70          SQ       0      15      20      23      26      29      31      34      34      34
 71          SQ      34      35      35      35      35      36      36      36      36      36
 72          SE  1779.2  1786.0  1790.0  1794.0  1798.0  1802.0  1806.0  1810.0  1810.8  1811.2
 73          SE  1811.6  1812.0  1812.4  1812.8  1813.2  1813.6  1814.0  1814.4  1814.8  1815.0
 74          RL                   0.97
             *

 75          KK  578599
 76          KM      Normal depth channel route
 77          RS       3    FLOW      -1
 78          RC   0.055   0.045   0.055  3762.0 0.01624
 79          RX  9928.9  9945.0  9963.1  9990.6 10012.2 10035.4 10052.8 10069.6
 80          RY  1755.7  1746.3  1746.1  1741.7  1743.3  1743.7  1744.6  1755.7
             *

 81          KK   C584I
 82          KM        BASIN S209 (Inflow to Dam 7 - SunRidge Canyon)
 83          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 84          KM        L=      3.2  Lca=      1.7   S=  582.3  Kn= .024  LAG=  19.9
 85          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 86          BA    1.60
 87          LG     .13     .28    4.62     .32   41.50
 88          UI    314.   1207.   2056.   2667.   1607.   1247.    919.    660.    498.    332.
 89          UI    257.    188.    133.    101.     52.     52.     52.     52.      0.      0.
 90          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
```



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

 91          KK   C584O
 92          KM      Reservoir route at C584 (Dam 7).
 93          KM       Orifice Size = 32"; Spillway Crest Elevation = 1930'; Width = 220'
 94          RS       1    ELEV  1884.8
 95          SV    0.00   14.55   37.17   57.52   86.65   94.00   97.00  101.00  104.90  109.00
 96          SV  113.00  118.00  122.00  126.25  131.00  133.00  136.00  139.00
 97          SE  1884.8  1908.0  1916.0  1920.0  1924.0  1924.8  1925.2  1925.6  1926.0  1926.4
 98          SE  1926.8  1927.2  1927.6  1928.0  1928.4  1928.6  1928.8  1929.0
 99          SQ       0      68     104     130     152     162     171     173     174     175
100          SQ     176     177     178     178     179     180     181     181     182     182
101          SE  1884.8  1892.0  1900.0  1908.0  1916.0  1920.0  1924.0  1924.8  1925.2  1925.6
102          SE  1926.0  1926.4  1926.8  1927.2  1927.6  1928.0  1928.4  1928.6  1928.8  1929.0
103          RL                   0.15
             *

104          KK  584599
105          KM      Normal depth channel route
106          RS       3    FLOW      -1
107          RC   0.065   0.050   0.065  6526.0 0.02571
108          RX  9927.6  9939.8  9951.9  9985.3 10036.0 10067.5 10119.2 10188.7
109          RY  1796.3  1791.2  1788.3  1784.1  1784.9  1788.0  1790.2  1796.4
             *

110          KK    S210
111          KM        BASIN S210 (Inflows from the watershed above Dam 4)
112          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
113          KM        L=      1.9  Lca=       .9   S=  360.7  Kn= .029  LAG=  16.5
114          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
115          BA    1.38
116          LG     .09     .24    5.61     .19   24.82
117          UI    386.   1462.   2587.   1930.   1339.    946.    649.    444.    315.    211.
118          UI    136.    104.     52.     52.     52.      0.      0.      0.      0.      0.
119          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

120          KK   C599I
121          KM      Inflow Hydrograph for Dam 4 (Golden Eagle Park)
122          KM      Hydrograph combine R560 + R578 + R584 + C210 at C599I
123          HC       4
             *

124          KK   C599O
125          KM      Reservoir route at C599 (GEPD)
126          KM      Rating Data is based on the existing characteristics of outlet works
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```
          127          RS       1    ELEV  1694.7
          128          SV    0.00   16.85   31.66   52.71   80.85   95.00   98.00  102.00  105.00  109.00
          129          SV  113.00  116.14  120.00  124.00  128.00  136.00  139.00  144.00  148.00  152.00
          130          SE  1694.7  1708.0  1710.0  1712.0  1714.0  1714.8  1715.0  1715.2  1715.4  1715.6
          131          SE  1715.8  1716.0  1716.2  1716.4  1716.6  1717.0  1717.2  1717.4  1717.6  1717.8
          132          SQ       0      38     214     312     384     443     497     543     587     628
          133          SQ     642     754     957    1262    1665    2182    2483    2811    3164    3540
          134          SE  1694.7  1696.0  1700.0  1702.0  1704.0  1706.0  1708.0  1710.0  1712.0  1714.0
          135          SE  1714.8  1715.4  1715.8  1716.2  1716.6  1717.0  1717.2  1717.4  1717.6  1717.8
          136          RL                    0.97
1                                                HEC-1 INPUT                                                PAGE  4

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

          137          ZZ
1
                 SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    23       C560I
                V
                V
    35       C560O
                V
                V
    46      560599
                .
                .
    52          .       C578I
                .           V
                .           V
    62          .       C578O
                .           V
                .           V
    75          .      578599
                .          .
                .          .
    81          .          .       C584I
                .          .           V
                .          .           V
    91          .          .       C584O
                .          .           V
                .          .           V
   104          .          .      584599
                .          .          .
                .          .          .
   110          .          .          .        S210
                .          .          .          .
                .          .          .          .
   120       C599I.................................
                V
                V
   124       C599O

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                                    ****************************************
*                                        *                                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *                                    *   U.S. ARMY CORPS OF ENGINEERS       *
*               MAY   1991               *                                    *   HYDROLOGIC ENGINEERING CENTER      *
*            VERSION 4.0.1E              *                                    *         609 SECOND STREET            *
*                                        *                                    *      DAVIS, CALIFORNIA 95616         *
*  RUN DATE  10/21/96  TIME  11:15:45    *                                    *          (916) 551-1748              *
*                                        *                                    *                                      *
****************************************                                    ****************************************


                                FOUNTAIN HILLS ADMP - Project No. 63
                                Future Condition Model                          File:   ALT3-24.IH1
                                100-Year,24-Hour Storm, S-Hydrograph            Date:  03/26/96
                                Areal reduction by JD records

                                Alternative No. 3 Analysis:
                                  Model reflects proposed modifications to Aspen, North Heights, and
                                  SunRidge Canyon Dams.

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

      IT          HYDROGRAPH TIME DATA
                         NMIN           5  MINUTES IN COMPUTATION INTERVAL
                        IDATE      1    0  STARTING DATE
                        ITIME        0000  STARTING TIME
                           NQ         600  NUMBER OF HYDROGRAPH ORDINATES
                       NDDATE      3    0  ENDING DATE
                       NDTIME        0155  ENDING TIME
                        ICENT          19  CENTURY MARK

                    COMPUTATION INTERVAL    0.08 HOURS
                         TOTAL TIME BASE   49.92 HOURS

          ENGLISH UNITS
```

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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

12 JD        INDEX STORM NO. 1
                STRM        4.20  PRECIPITATION DEPTH
                TRDA        0.01  TRANSPOSITION DRAINAGE AREA

13 PI          PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.06      0.06
                0.06      0.06      0.06      0.06      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00

18 JD        INDEX STORM NO. 2
                STRM        4.12  PRECIPITATION DEPTH
                TRDA        1.38  TRANSPOSITION DRAINAGE AREA

 0 PI          PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.06      0.06
                0.06      0.06      0.06      0.06      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00

19 JD        INDEX STORM NO. 3
                STRM        4.12  PRECIPITATION DEPTH
                TRDA        1.60  TRANSPOSITION DRAINAGE AREA

 0 PI          PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.06      0.06
                0.06      0.06      0.06      0.06      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00
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                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
20 JD         INDEX STORM NO. 4
                STRM        4.10  PRECIPITATION DEPTH
                TRDA        2.00  TRANSPOSITION DRAINAGE AREA

 0 PI           PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.06      0.06
                0.06      0.06      0.06      0.06      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
21 JD         INDEX STORM NO. 5
                STRM        4.10  PRECIPITATION DEPTH
                TRDA        2.15  TRANSPOSITION DRAINAGE AREA

 0 PI           PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.06      0.06
                0.06      0.06      0.06      0.06      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
22 JD         INDEX STORM NO. 6
                STRM        3.99  PRECIPITATION DEPTH
                TRDA       10.00  TRANSPOSITION DRAINAGE AREA

 0 PI           PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
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0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.06
0.06	0.06	0.06	0.06	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

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	C560I	2012.	12.25	404.	123.	59.	2.15		
+	ROUTED TO	C560O	32.	13.92	32.	32.	26.	2.15		
+	ROUTED TO	560599	32.	27.17	32.	32.	26.	2.15		
+	HYDROGRAPH AT	C578I	3058.	12.08	454.	146.	70.	2.00		
+	ROUTED TO	C578O	36.	12.42	36.	36.	31.	2.00		
+	ROUTED TO	578599	36.	42.33	36.	36.	31.	2.00		
+	HYDROGRAPH AT	C584I	2257.	12.08	332.	105.	50.	1.60		
+	ROUTED TO	C584O	179.	13.17	174.	103.	50.	1.60		
+	ROUTED TO	584599	178.	13.58	174.	103.	50.	1.60		
+	HYDROGRAPH AT	S210	2121.	12.08	271.	79.	38.	1.38		
+	4 COMBINED AT	C599I	2223.	12.08	482.	231.	142.	7.13		
+	ROUTED TO	C599O	626.	12.67	479.	231.	142.	7.13		

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

```
1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              MAY   1991           *
*           VERSION 4.0.1E          *
*                                   *
*  RUN DATE  10/21/96  TIME  12:15:31  *
*                                   *
*************************************
```

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

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

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

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

```
1                                          HEC-1 INPUT                                                    PAGE  1

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

    1           ID        FOUNTAIN HILLS ADMP
    2           ID        GVSCE Prject No 63                              File: alt3-usd.ih1
    3           ID        0.5 PMF Model, Future Conditions                  by: ccc
    4           ID
    5           ID        Alternative No. 3:
    6           ID          Model reflects modifications to Aspen, North Heights, and
    7           ID          SunRidge Canyon Dams.  Modeling for those dams only.
    8           ID
                *
                *DIAGRAM
    9           IT       5       0       0     200
   10           IO       5
   11           IN      15
   12           JR    FLOW     0.5
                *

   13           KK   C560I
   14           KM        BASIN S207
   15           KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
   16           KM        L=      3.9  Lca=      2.2   S=  464.7  Kn= .030  LAG=  30.6
   17           KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
   18           BA    2.15
   19           PB   14.70
   20           PI     0.1     0.1     0.1     0.1     0.2     0.2     0.2     0.2     8.0     1.8
   21           PI     0.7     0.5   0.425   0.425   0.425   0.425   0.125   0.125   0.125   0.125
   22           PI   0.075   0.075   0.075   0.075
   23           LG     .17     .31    4.90    0.29   31.55
   24           UI    237.    523.   1170.   1651.   2163.   2377.   1509.   1274.   1082.    897.
   25           UI    699.    573.    507.    374.    299.    259.    198.    181.    119.    116.
   26           UI    111.     45.     45.     45.     45.     45.     45.     45.      0.      0.
   27           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
   28           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *

   29           KK   C560O
   30           KM      Reservoir route at C560 (Dam 6).
   31           KM      Orifice Size = 15"; Spillway Crest Elevation = 1857'; Bottom Width = 100'
   32           RS       1    ELEV  1837.5
   33           SV    0.00   34.65   93.47  217.00  336.00  431.00  574.70  804.95  826.22  847.82
   34           SV  869.75  892.00  914.57  937.48  960.72  984.32 1008.29 1032.61 1082.73 1135.10
   35           SE 1808.8 1820.00 1828.00 1839.00 1844.50 1848.50 1853.00 1857.00  1857.5  1858.0
   36           SE 1858.5 1859.00 1859.50 1860.00 1860.50 1861.00 1861.50 1862.00  1863.0  1864.0
   37           SQ       0      26      31      34      36      38      40      42     132     302
   38           SQ     526     799    1116    1477    1878    2320    2802    3324    3885    5700
                *

   39           KK   C578I
   40           KM        BASIN S208
   41           KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
   42           KM        L=      3.0  Lca=      1.6   S=  488.9  Kn= .018  LAG=  14.2
   43           KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
   44           BA    2.00
   45           PB   14.70
   46           PI     0.1     0.1     0.1     0.1     0.2     0.2     0.2     0.2     8.0     1.8
   47           PI     0.7     0.5   0.425   0.425   0.425   0.425   0.125   0.125   0.125   0.125
1                                          HEC-1 INPUT                                                    PAGE  2

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

   48           PI   0.075   0.075   0.075   0.075
   49           LG     .10     .25    4.80     .28   50.48
```

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50          UI    837.   3038.   4371.   2543.   1714.   1106.    677.    446.    282.    192.
51          UI     91.     91.     91.      0.      0.      0.      0.      0.      0.      0.
52          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            *

53          KK   C5780
54          KM      Reservoir route at C578 (Dam 11).
55          KM      Orifice Size = 15"; Spillway Crest Elevation = 1837'; Width = 100'
56          RS       1    ELEV    1815
57          SV    0.00    6.15   67.89  171.00  242.00  324.00  416.00  544.00  781.00  819.00
58          SV  859.00  899.25  941.00  984.00 1028.00 1073.00 1167.00 1266.00 1317.00 1369.00
59          SE  1779.2 1790.00 1804.00 1813.00 1817.00 1821.00  1825.0  1830.0  1837.0  1838.0
60          SE  1839.0 1840.00 1841.00 1842.00 1843.00 1844.00 1846.00 1848.00 1849.00 1850.00
61          SQ       0      20      30      35      37      39      41      43      46      69
62          SQ     196     385     624     905    1227    1586    2411    3372    3903    4467
63          SE  1779.2 1790.00 1804.00 1813.00 1817.00 1821.00  1825.0  1830.0  1837.0  1838.0
64          SE  1839.0 1840.00 1841.00 1842.00 1843.00 1844.00 1846.00 1848.00 1849.00 1850.00
            *

65          KK   C584I
66          KM        BASIN S209
67          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
68          KM        L=      3.2  Lca=      1.7   S=  582.3  Kn= .019  LAG=  15.9
69          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
70          BA   1.603
71          PB   15.00
72          PI   0.075   0.075   0.075   0.075     0.2     0.2     0.2     0.2     8.2     1.8
73          PI     0.7     0.7     0.4     0.4     0.4     0.4    0.15    0.15    0.15    0.15
74          PI   0.075   0.075   0.075   0.075
75          LG     .13     .28    4.62     .32   41.50
76          UI    515.   1951.   3289.   2104.   1510.    997.    702.    442.    308.    202.
77          UI    154.     65.     65.     65.      0.      0.      0.      0.      0.      0.
78          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            *

79          KK   C5840
80          KM      Reservoir route at C584 (Dam 7).
81          KM      Orifice Size = 32"; Spillway Crest Elevatiion = 1930'; Width = 220'
82          RS       1    ELEV    1929
83          SV    0.00    0.60    4.30   11.27   23.74   46.29   86.65   96.00  104.90  126.25
84          SV  151.07  165.00  179.50  195.00  211.23  229.00  246.62  266.00  285.59  306.14
85          SE  1884.8 1894.00 1900.00 1906.00 1912.00 1918.00 1924.00 1925.00 1926.00 1928.00
86          SE  1930.0 1931.00 1932.00 1933.00 1934.00 1935.00 1936.00 1937.00 1938.00 1939.00
87          SQ       0      79     104     125     142     157     171     173     176     180
88          SQ     184     749    1817    3250    5008    7071    9429   12078   15017   18245
89          SE  1884.8 1894.00 1900.00 1906.00 1912.00 1918.00 1924.00 1925.00 1926.00 1928.00
90          SE  1930.0 1931.00 1932.00 1933.00 1934.00 1935.00 1936.00 1937.00 1938.00 1939.00
91          ZZ
```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

    13      C560I
                V
                V
    29      C560O
                .
                .
    39          .       C578I
                .           V
                .           V
    53          .       C578O
                .           .
                .           .
    65          .           .       C584I
                .           .           V
                .           .           V
    79          .           .       C584O

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
```

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*             MAY   1991               *
*           VERSION 4.0.1E             *
*                                      *
*  RUN DATE  10/21/96  TIME  12:15:31  *
*                                      *
****************************************
```

```
****************************************
*                                      *
*   U.S. ARMY CORPS OF ENGINEERS       *
*   HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*          (916) 551-1748              *
*                                      *
****************************************
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```
FOUNTAIN HILLS ADMP
GVSCE Prject No 63                          File: alt3-usd.ih1
0.5 PMF Model, Future Conditions              by: ccc

Alternative No. 3:
  Model reflects modifications to Aspen, North Heights, and
  SunRidge Canyon Dams.  Modeling for those dams only.

 10 IO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
```

```
                    QSCAL          0.  HYDROGRAPH PLOT SCALE

     IT          HYDROGRAPH TIME DATA
                      NMIN           5  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1    0  STARTING DATE
                     ITIME        0000  STARTING TIME
                        NQ         200  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      1    0  ENDING DATE
                    NDTIME        1635  ENDING TIME
                     ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL    0.08 HOURS
                       TOTAL TIME BASE   16.58 HOURS

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

     JP          MULTI-PLAN OPTION
                      NPLAN           1  NUMBER OF PLANS

     JR          MULTI-RATIO OPTION
                     RATIOS OF RUNOFF
                       0.50
1

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


                                                                    RATIOS APPLIED TO FLOWS
 OPERATION       STATION     AREA    PLAN              RATIO 1
                                                          0.50

 HYDROGRAPH AT
+                 C560I      2.15     1   FLOW          8987.
                                         TIME           2.58

 ROUTED TO
+                 C560O      2.15     1   FLOW           451.
                                         TIME           4.67

                                     ** PEAK STAGES IN FEET **
                                     1   STAGE       1858.33
                                         TIME           4.67

 HYDROGRAPH AT
+                 C578I      2.00     1   FLOW         13484.
                                         TIME           2.33

 ROUTED TO
+                 C578O      2.00     1   FLOW           236.
                                         TIME           4.58

                                     ** PEAK STAGES IN FEET **
                                     1   STAGE       1839.21
                                         TIME           4.58

 HYDROGRAPH AT
+                 C584I      1.60     1   FLOW         10119.
                                         TIME           2.33

 ROUTED TO
+                 C584O      1.60     1   FLOW          8642.
                                         TIME           2.50

                                     ** PEAK STAGES IN FEET **
                                     1   STAGE       1935.67
                                         TIME           2.50


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

```
1****************************************                    ****************************************
*                                      *                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *   U.S. ARMY CORPS OF ENGINEERS       *
*              MAY   1991              *                    *   HYDROLOGIC ENGINEERING CENTER      *
*            VERSION 4.0.1E            *                    *         609 SECOND STREET            *
*                                      *                    *      DAVIS, CALIFORNIA 95616         *
*  RUN DATE  10/21/96  TIME  11:43:22  *                    *          (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        FOUNTAIN HILLS ADMP
        2           ID        GVSCE Project No. 63                                File:ALT3GEPD.IH1
        3           ID        Full PMF Model, Future Conditions                     by: ccc
        4           ID
        5           ID        Alternative No. 3 Analysis:
        6           ID          Model reflects modifications to Aspen, North Heights, and
        7           ID          SunRidge Canyon Dams.
        8           ID          Full PMF modeling of GEPD watershed with appropriate areal reduction
        9           ID          Model is used to develop PMF inflow hydrograph to GEPD
                    *DIAGRAM
       10           IT       5       0       0     200
       11           IO       5
       12           IN      15
                    *

       13           KK   C560I
       14           KM        BASIN S207
       15           KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
       16           KM        L=      3.9  Lca=      2.2   S=  464.7  Kn= .030  LAG=  30.6
       17           KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
       18           BA    2.15
       19           PB   13.70
       20           PI   0.075   0.075   0.075   0.075     0.2     0.2     0.2     0.2     8.0     1.8
       21           PI     0.7     0.7   0.375   0.375   0.375   0.375    0.15    0.15    0.15    0.15
       22           PI   0.075   0.075   0.075   0.075
       23           LG     .17     .31    4.90    0.29   31.55
       24           UI    237.    523.   1170.   1651.   2163.   2377.   1509.   1274.   1082.    897.
       25           UI    699.    573.    507.    374.    299.    259.    198.    181.    119.    116.
       26           UI    111.     45.     45.     45.     45.     45.     45.     45.      0.      0.
       27           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
       28           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *

       29           KK   C560O
       30           KM      Reservoir route at C560 (Dam 6).
       31           KM      Orifice Size = 15"; Spillway Crest Elevation = 1857'; Bottom Width = 100'
       32           RS       1    ELEV  1835.4
       33           SV    0.00   34.65   93.47  217.00  336.00  431.00  574.70  804.95  826.22  847.82
       34           SV  869.75  892.00  914.57  937.48  960.72  984.32 1008.29 1032.61 1082.73 1135.10
       35           SE  1808.8 1820.00 1828.00 1839.00 1844.50 1848.50 1853.00 1857.00  1857.5  1858.0
       36           SE  1858.5 1859.00 1859.50 1860.00 1860.50 1861.00 1861.50 1862.00  1863.0  1864.0
       37           SQ       0      26      31      34      36      38      40      42     132     302
       38           SQ     526     799    1116    1477    1878    2320    2802    3324    3885    5700
                    *

       39           KK  560599
       40           KM      Normal depth channel route
       41           RS       1    FLOW      -1
       42           RC   0.050   0.025   0.050  3127.0  0.0272
       43           RX  9850.4  9950.4  9974.4 10000.0 10035.5 10059.8 10080.4 10104.4
       44           RY  1772.0  1771.7  1765.3  1765.3  1765.9  1768.5  1773.3  1773.7
                    *
1                                                HEC-1 INPUT                                                PAGE  2

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

       45           KK   C578I
       46           KM        BASIN S208
       47           KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
       48           KM        L=      3.0  Lca=      1.6   S=  488.9  Kn= .018  LAG=  14.2
```

```
 49          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 50          BA    2.00
 51          LG     .10     .25    4.80     .28   50.48
 52          UI    837.   3038.   4371.   2543.   1714.   1106.    677.    446.    282.    192.
 53          UI     91.     91.     91.      0.      0.      0.      0.      0.      0.      0.
 54          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

 55          KK   C578O
 56          KM      Reservoir route at C578 (Dam 11).
 57          KM      Orifice Size = 15"; Spillway Crest Elevation = 1837'; Width = 100'
 58          RS       1    ELEV  1810.8
 59          SV    0.00    6.15   67.89  171.00  242.00  324.00  416.00  544.00  781.00  819.00
 60          SV  859.00  899.25  941.00  984.00 1028.00 1073.00 1167.00 1266.00 1317.00 1369.00
 61          SE  1779.2 1790.00 1804.00 1813.00 1817.00 1821.00  1825.0  1830.0  1837.0  1838.0
 62          SE  1839.0 1840.00 1841.00 1842.00 1843.00 1844.00 1846.00 1848.00 1849.00 1850.00
 63          SQ       0      20      30      35      37      39      41      43      46      69
 64          SQ     196     385     624     905    1227    1586    2411    3372    3903    4467
 65          SE  1779.2 1790.00 1804.00 1813.00 1817.00 1821.00  1825.0  1830.0  1837.0  1838.0
 66          SE  1839.0 1840.00 1841.00 1842.00 1843.00 1844.00 1846.00 1848.00 1849.00 1850.00
             *

 67          KK  578599
 68          KM      Normal depth channel route
 69          RS       1    FLOW      -1
 70          RC   0.055   0.045   0.055  3762.0 0.01624
 71          RX  9928.9  9945.0  9963.1  9990.6 10012.2 10035.4 10052.8 10069.6
 72          RY  1755.7  1746.3  1746.1  1741.7  1743.3  1743.7  1744.6  1755.7
             *

 73          KK   C584I
 74          KM        BASIN S209
 75          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 76          KM        L=      3.2  Lca=       1.7   S=  582.3  Kn= .019  LAG=  15.9
 77          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 78          BA    1.60
 79          LG     .13     .28    4.62     .32   41.50
 80          UI    515.   1951.   3289.   2104.   1510.    997.    702.    442.    308.    202.
 81          UI    154.     65.     65.     65.      0.      0.      0.      0.      0.      0.
 82          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

 83          KK   C584O
 84          KM      Reservoir route at C584 (Dam 7).
 85          KM      Orifice Size = 32"; Spillway Crest Elevatiion = 1930'; Width = 220'
 86          RS       1    ELEV  1924.8
 87          SV    0.00    0.60    4.30   11.27   23.74   46.29   86.65   96.00  104.90  126.25
 88          SV  151.07  165.00  179.50  195.00  211.23  229.00  246.62  266.00  285.59  306.14
 89          SE  1884.8 1894.00 1900.00 1906.00 1912.00 1918.00 1924.00 1925.00 1926.00 1928.00
 90          SE  1930.0 1931.00 1932.00 1933.00 1934.00 1935.00 1936.00 1937.00 1938.00 1939.00
1                                          HEC-1 INPUT                                          PAGE  3

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

 91          SQ       0      79     104     125     142     157     171     173     176     180
 92          SQ     184     749    1817    3250    5008    7071    9429   12078   15017   18245
 93          SE  1884.8 1894.00 1900.00 1906.00 1912.00 1918.00 1924.00 1925.00 1926.00 1928.00
 94          SE  1930.0 1931.00 1932.00 1933.00 1934.00 1935.00 1936.00 1937.00 1938.00 1939.00
             *

 95          KK  584599
 96          KM      Normal depth channel route
 97          RS       1    FLOW      -1
 98          RC   0.065   0.050   0.065  6526.0 0.02571
 99          RX  9927.6  9939.8  9951.9  9985.3 10036.0 10067.5 10119.2 10188.7
100          RY  1796.3  1791.2  1788.3  1784.1  1784.9  1788.0  1790.2  1796.4
             *

101          KK    C210
102          KM        BASIN S210
103          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
104          KM        L=      1.9  Lca=       .9   S=  360.7  Kn= .024  LAG=  13.6
105          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
106          BA    1.38
107          LG     .09     .24    5.61     .19   24.82
108          UI    634.   2291.   3040.   1739.   1122.    723.    433.    286.    170.     96.
109          UI     66.     66.      0.      0.      0.      0.      0.      0.      0.      0.
110          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

111          KK   C599I
112          KO       1
113          KM      Hydrograph combine C584O + C560O + C578O + C210
114          HC       4
             *
115          ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
 LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   13      C560I
              V
              V
   29      C560O
              V
              V
```

```
 39      560599
              .
              .
 45           .       C578I
              .           V
              .           V
 55           .       C578O
              .           V
              .           V
 67           .      578599
              .           .
              .           .
 73           .           .       C584I
              .           .           V
              .           .           V
 83           .           .       C584O
              .           .           V
              .           .           V
 95           .           .      584599
              .           .           .
              .           .           .
101           .           .           .        C210
              .           .           .           .
              .           .           .           .
111       C599I.................................
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************                    ****************************************
*                                        *                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *                    *    U.S. ARMY CORPS OF ENGINEERS      *
*              MAY   1991                *                    *    HYDROLOGIC ENGINEERING CENTER     *
*            VERSION 4.0.1E              *                    *          609 SECOND STREET           *
*                                        *                    *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE  10/21/96  TIME  11:43:22    *                    *           (916) 551-1748             *
*                                        *                    *                                      *
****************************************                    ****************************************
```

```
                                FOUNTAIN HILLS ADMP
                                GVSCE Project No. 63                          File:ALT3GEPD.IH1
                                Full PMF Model, Future Conditions               by: ccc

                                Alternative No. 3 Analysis:
                                  Model reflects modifications to Aspen, North Heights, and
                                  SunRidge Canyon Dams.
                                  Full PMF modeling of GEPD watershed with appropriate areal reduction
                                  Model is used to develop PMF inflow hydrograph to GEPD

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

    IT          HYDROGRAPH TIME DATA
                       NMIN           5  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         200  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      1    0  ENDING DATE
                     NDTIME        1635  ENDING TIME
                      ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL    0.08 HOURS
                       TOTAL TIME BASE   16.58 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


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


            **************
            *            *
 111 KK     *     C599I  *
            *            *
            **************

 112 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           1  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                             Hydrograph combine C584O + C560O + C578O + C210

 114 HC          HYDROGRAPH COMBINATION
                      ICOMP           4  NUMBER OF HYDROGRAPHS TO COMBINE

                                                    ***
```

HYDROGRAPH AT STATION C599I
SUM OF 4 HYDROGRAPHS

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1		0000	1	239.	1		0410	51	7371.	1		0820	101	639.	1		1230	151	298.
1		0005	2	243.	1		0415	52	6886.	1		0825	102	622.	1		1235	152	296.
1		0010	3	256.	1		0420	53	6434.	1		0830	103	607.	1		1240	153	294.
1		0015	4	274.	1		0425	54	6023.	1		0835	104	593.	1		1245	154	291.
1		0020	5	284.	1		0430	55	5635.	1		0840	105	580.	1		1250	155	289.
1		0025	6	290.	1		0435	56	5263.	1		0845	106	567.	1		1255	156	287.
1		0030	7	294.	1		0440	57	4911.	1		0850	107	555.	1		1300	157	285.
1		0035	8	297.	1		0445	58	4589.	1		0855	108	543.	1		1305	158	282.
1		0040	9	298.	1		0450	59	4304.	1		0900	109	531.	1		1310	159	280.
1		0045	10	299.	1		0455	60	4049.	1		0905	110	520.	1		1315	160	278.
1		0050	11	299.	1		0500	61	3816.	1		0910	111	509.	1		1320	161	276.
1		0055	12	300.	1		0505	62	3593.	1		0915	112	499.	1		1325	162	274.
1		0100	13	300.	1		0510	63	3356.	1		0920	113	491.	1		1330	163	273.
1		0105	14	306.	1		0515	64	3120.	1		0925	114	483.	1		1335	164	271.
1		0110	15	328.	1		0520	65	2919.	1		0930	115	474.	1		1340	165	270.
1		0115	16	358.	1		0525	66	2737.	1		0935	116	466.	1		1345	166	269.
1		0120	17	374.	1		0530	67	2573.	1		0940	117	458.	1		1350	167	268.
1		0125	18	386.	1		0535	68	2428.	1		0945	118	451.	1		1355	168	267.
1		0130	19	397.	1		0540	69	2291.	1		0950	119	444.	1		1400	169	265.
1		0135	20	414.	1		0545	70	2164.	1		0955	120	438.	1		1405	170	264.
1		0140	21	437.	1		0550	71	2051.	1		1000	121	432.	1		1410	171	263.
1		0145	22	461.	1		0555	72	1958.	1		1005	122	426.	1		1415	172	262.
1		0150	23	484.	1		0600	73	1872.	1		1010	123	420.	1		1420	173	261.
1		0155	24	504.	1		0605	74	1789.	1		1015	124	414.	1		1425	174	260.
1		0200	25	523.	1		0610	75	1700.	1		1020	125	408.	1		1430	175	260.
1		0205	26	2075.	1		0615	76	1611.	1		1025	126	402.	1		1435	176	259.
1		0210	27	7641.	1		0620	77	1533.	1		1030	127	396.	1		1440	177	258.
1		0215	28	15331.	1		0625	78	1462.	1		1035	128	391.	1		1445	178	257.
1		0220	29	20720.	1		0630	79	1397.	1		1040	129	385.	1		1450	179	256.
1		0225	30	24479.	1		0635	80	1336.	1		1045	130	380.	1		1455	180	255.
1		0230	31	24907.	1		0640	81	1278.	1		1050	131	374.	1		1500	181	254.
1		0235	32	23881.	1		0645	82	1223.	1		1055	132	369.	1		1505	182	253.
1		0240	33	20996.	1		0650	83	1172.	1		1100	133	364.	1		1510	183	252.
1		0245	34	17684.	1		0655	84	1124.	1		1105	134	359.	1		1515	184	251.
1		0250	35	15106.	1		0700	85	1084.	1		1110	135	354.	1		1520	185	250.
1		0255	36	13513.	1		0705	86	1047.	1		1115	136	350.	1		1525	186	249.
1		0300	37	12995.	1		0710	87	1010.	1		1120	137	345.	1		1530	187	248.
1		0305	38	12678.	1		0715	88	974.	1		1125	138	340.	1		1535	188	247.
1		0310	39	12132.	1		0720	89	940.	1		1130	139	336.	1		1540	189	245.
1		0315	40	11338.	1		0725	90	907.	1		1135	140	332.	1		1545	190	244.
1		0320	41	10755.	1		0730	91	876.	1		1140	141	327.	1		1550	191	243.
1		0325	42	10276.	1		0735	92	846.	1		1145	142	324.	1		1555	192	241.
1		0330	43	9850.	1		0740	93	817.	1		1150	143	320.	1		1600	193	240.
1		0335	44	9448.	1		0745	94	790.	1		1155	144	317.	1		1605	194	238.
1		0340	45	9035.	1		0750	95	764.	1		1200	145	314.	1		1610	195	237.
1		0345	46	8704.	1		0755	96	741.	1		1205	146	311.	1		1615	196	235.
1		0350	47	8454.	1		0800	97	718.	1		1210	147	309.	1		1620	197	234.
1		0355	48	8213.	1		0805	98	697.	1		1215	148	306.	1		1625	198	232.
1		0400	49	7989.	1		0810	99	677.	1		1220	149	303.	1		1630	199	231.
1		0405	50	7742.	1		0815	100	657.	1		1225	150	301.	1		1635	200	229.

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	16.58-HR
24907.	2.50	(CFS)	6157.	2453.	2453.	2453.
		(INCHES)	8.029	8.839	8.839	8.839
		(AC-FT)	3053.	3361.	3361.	3361.

CUMULATIVE AREA = 7.13 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	C560I	16687.	2.58	2686.	974.	974.	2.15		
ROUTED TO	C560O	4061.	3.50	1375.	528.	528.	2.15		
								1863.10	3.50
ROUTED TO	560599	4047.	3.50	1374.	528.	528.	2.15		
								1768.48	3.50
HYDROGRAPH AT	C578I	25083.	2.33	2647.	959.	959.	2.00		
ROUTED TO	C578O	2347.	3.25	1162.	480.	480.	2.00		
								1845.84	3.25

```
          ROUTED TO
+                    578599     2329.   3.42      1156.      480.      480.     2.00
+                                                                                        1746.50      3.42
          HYDROGRAPH AT
+                     C584I    18374.   2.33      2048.      742.      742.     1.60
          ROUTED TO
+                     C584O    16154.   2.50      1936.      804.      804.     1.60
+                                                                                        1938.35      2.50
          ROUTED TO
+                    584599    14247.   2.58      1936.      805.      805.     1.60
+                                                                                        1792.14      2.58
          HYDROGRAPH AT
+                      C210    17781.   2.33      1768.      640.      640.     1.38
          4 COMBINED AT
+                     C599I    24907.   2.50      6157.     2453.     2453.     7.13

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

```
1*****************************************                    *************************************
*                                         *                    *                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)     *                    *   U.S. ARMY CORPS OF ENGINEERS    *
*              MAY   1991                 *                    *   HYDROLOGIC ENGINEERING CENTER   *
*            VERSION 4.0.1E               *                    *         609 SECOND STREET         *
*                                         *                    *      DAVIS, CALIFORNIA 95616      *
*  RUN DATE  10/21/96  TIME  11:53:31     *                    *          (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        FOUNTAIN HILLS ADMP
            2           ID        GVSCE Project No. 63                                File:GEPD-RT.IH1
            3           ID        0.5 PMF Model, Future Conditions                     by: ccc
            4           ID
            5           ID        Alternative No. 3 Analysis:
            6           ID          Model reflects modifications to Aspen, North Heights, and
            7           ID          SunRidge Canyon Dams.
            8           ID          Full PMF hydrograph QI records from ALT3GEPD.OH1 file.
                        *DIAGRAM
            9           IT       5       0       0     200
           10           IO       5
           11           JR    FLOW     1.0     0.5
                        *

           12           KK   C599I
           13           BA    7.13
           14           QI    239.    243.    256.    274.    284.    290.    294.    297.    298.    299.
           15           QI    299.    300.    300.    306.    328.    358.    374.    386.    397.    414.
           16           QI    437.    461.    484.    504.    523.   2075.   7641.  15331.  20720.  24479.
           17           QI  24907.  23881.  20996.  17684.  15106.  13513.  12995.  12678.  12132.  11338.
           18           QI  10755.  10276.   9850.   9448.   9035.   8704.   8454.   8213.   7989.   7742.
           19           QI   7371.   6886.   6434.   6023.   5635.   5263.   4911.   4589.   4304.   4049.
           20           QI   3816.   3593.   3356.   3120.   2919.   2737.   2573.   2428.   2291.   2164.
           21           QI   2051.   1958.   1872.   1789.   1700.   1611.   1533.   1462.   1397.   1336.
           22           QI   1278.   1223.   1172.   1124.   1084.   1047.   1010.    974.    940.    907.
           23           QI    876.    846.    817.    790.    764.    741.    718.    697.    677.    657.
           24           QI    639.    622.    607.    593.    580.    567.    555.    543.    531.    520.
           25           QI    509.    499.    491.    483.    474.    466.    458.    451.    444.    438.
           26           QI    432.    426.    420.    414.    408.    402.    396.    391.    385.    380.
           27           QI    374.    369.    364.    359.    354.    350.    345.    340.    336.    332.
           28           QI    327.    324.    320.    317.    314.    311.    309.    306.    303.    301.
           29           QI    298.    296.    294.    291.    289.    287.    285.    282.    280.    278.
           30           QI    276.    274.    273.    271.    270.    269.    268.    267.    265.    264.
           31           QI    263.    262.    261.    260.    260.    259.    258.    257.    256.    255.
           32           QI    254.    253.    252.    251.    250.    249.    248.    247.    245.    244.
           33           QI    243.    241.    240.    238.    237.    235.    234.    232.    231.    229.
                        *

           34           KK   C599O
           35           KM      Reservoir route at C599 (GEPD)
           36           KM      Antecedent water surface set at emergency spillway crest
           37           RS       1    ELEV 1714.86
           38           SV    0.00    0.03    0.47   16.85   80.85     107  116.14  136.00  156.22  179.00
           39           SV  200.89  214.00  226.00  252.10  281.00  310.47  344.00  376.60  413.00  450.02
           40           SE  1694.7  1700.0 1702.00 1708.00 1714.00  1715.5 1716.00 1717.00 1718.00  1719.0
           41           SE  1720.0 1720.50 1721.00 1722.00 1723.00 1724.00 1725.00 1726.00 1727.00  1728.0
           42           SQ       0      95     214     497     628     795    1097    2182    3943    6256
           43           SQ    8917   10376   11902   15529   21659   29743   39565   50633   62566   75527
           44           SE  1694.7  1698.0  1700.0 1708.00 1714.00  1715.5 1716.00 1717.00 1718.00  1719.0
           45           SE  1720.0 1720.50 1721.00 1722.00 1723.00 1724.00 1725.00 1726.00 1727.00  1728.0
           46           ZZ

1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    12       C599I
                 V
                 V
```

```
   34       C5990

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*****************************************
 *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
 *               MAY   1991              *
 *            VERSION 4.0.1E             *
 *                                       *
 *  RUN DATE  10/21/96  TIME  11:53:31   *
 *                                       *
 *****************************************

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


                              FOUNTAIN HILLS ADMP
                              GVSCE Project No. 63                          File:GEPD-RT.IH1
                              0.5 PMF Model, Future Conditions               by: ccc

                              Alternative No. 3 Analysis:
                                Model reflects modifications to Aspen, North Heights, and
                                SunRidge Canyon Dams.
                                Full PMF hydrograph QI records from ALT3GEPD.OH1 file.

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

     IT          HYDROGRAPH TIME DATA
                        NMIN          5  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1    0  STARTING DATE
                       ITIME       0000  STARTING TIME
                          NQ        200  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      1    0  ENDING DATE
                      NDTIME       1635  ENDING TIME
                       ICENT         19  CENTURY MARK

                  COMPUTATION INTERVAL    0.08 HOURS
                       TOTAL TIME BASE   16.58 HOURS

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

     JP          MULTI-PLAN OPTION
                       NPLAN          1  NUMBER OF PLANS

     JR          MULTI-RATIO OPTION
                     RATIOS OF RUNOFF
                   1.00      0.50
1

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


                                                          RATIOS APPLIED TO FLOWS
 OPERATION       STATION     AREA    PLAN            RATIO 1  RATIO 2
                                                        1.00     0.50

 HYDROGRAPH AT
+                 C5991      7.13     1   FLOW       24907.   12454.
                                          TIME         2.50     2.50

 ROUTED TO
+                 C5990      7.13     1   FLOW       24390.   11220.
                                          TIME         2.58     2.58

                                     ** PEAK STAGES IN FEET **
                                     1   STAGE     1723.34  1720.78
                                         TIME         2.58     2.58


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

ALTERNATIVE NO. 3

Storage and Discharge vs Stage Data for Aspen Dam (No. 6)

Principal spillway: 15 inch orifice plate
Emergency Spillway: 100-foot spillway, Elevation = 1857 feet

Orifice Output		Uneven Weir Output	
Stage (ft)	Orifice Discharge (cfs)	Stage (ft)	Discharge (cfs)
1808.61	0	1857.00	0
1810.00	5	1857.50	90
1815.00	15	1858.00	259
1820.00	20	1858.50	483
1825.00	24	1859.00	756
1830.00	28	1859.50	1073
1835.00	31	1860.00	1433
1840.00	34	1860.50	1834
1845.00	37	1861.00	2276
1850.00	39	1861.50	2758
1855.00	41	1862.00	3279
1860.00	44	1862.50	3279
		1863.00	3840
		1863.50	4440
		1864.00	5080

GVSCE					
Stage NGVD 29 Datum	Surface Area (acres)	Storage Volume (acre-feet	Discharge, in cfs		
			Principal Spillway	Emergenc Spillway	Total
1808.79	0	0	0	---	0
1810.00	0.11	0.00	5	---	5
1812.00	1.99	1.71	10	---	10
1814.00	3.46	7.09	13	---	13
1816.00	4.27	14.81	16	---	16
1818.00	4.97	24.04	18	---	18
1820.00	5.65	34.65	20	---	20
1822.00	6.40	46.70	22	---	22
1824.00	7.34	60.43	23	---	23
1826.00	8.22	75.98	25	---	25
1828.00	9.28	93.47	26	---	26
1830.00	10.45	113.19	28	---	28
1832.00	12.02	135.64	29	---	29
1834.00	13.84	161.48	30	---	30
1835.00	---	176	31	---	31
1835.50	---	184	31	---	31
1836.00	16.15	191.44	32	---	32
1836.50	---	200	32	---	32
1837.00	17.60	208.31	32	---	32
1837.50	---	217	32	---	32
1838.00	18.85	226.53	33	---	33
1838.50	---	236	33	---	33
1839.00	---	246	33	---	33
1839.50		256	34	---	34
1840.00	20.92	266.28	34	---	34
1840.50	---	277	34	---	34
1841.00	---	289	34	---	34
1841.50	---	300	35	---	35
1842.00	23.64	310.81	35	---	35
1842.50	---	323	35	---	35
1843.00	---	336	35	---	35
1843.50	---	348	36	---	36
1844.00	26.45	360.88	36	---	36
1844.50	---	375	36	---	36
1845.00	---	389	37	---	37
1845.50	---	402	37	---	37
1846.00	28.99	416.30	37	---	37
1846.50	---	431	37	---	37
1847.00	---	446	38	---	38
1847.50	---	461	38	---	38
1848.00	31.12	476.39	38	---	38
1848.50	---	492	38	---	38
1849.00	---	509	39	---	39
1849.50	---	525	39	---	39
1850.00	33.28	540.78	39	---	39
1850.50	34	557.58	39	---	39
1851.00	35	574.70	39	---	39
1851.50	35	592.13	40	---	40
1852.00	36	609.89	40	---	40
1852.50	36	627.96	40	---	40
1853.00	37	646.35	40	---	40
1853.50	38	665.06	41	---	41
1854.00	38	684.09	41	---	41
1854.50	39	703.43	41	---	41
1855.00	40	723.10	41	---	41
1855.50	40	743.08	42	---	42
1856.00	40.92	763.38	42	---	42
1856.50	42	784.00	42	---	42
1857.00	42	804.95	42	0	42
1857.50	43	826.22	42	90	132
1858.00	44	847.82	43	259	302
1858.50	44	869.75	43	483	526
1859.00	45	892.00	43	756	799
1859.50	45	914.57	43	1073	1116
1860.00	46.13	937.48	44	1433	1477
1860.50	47	960.72	44	1834	1878
1861.00	48	984.32	44	2276	2320
1861.50	48	1008.29	44	2758	2802
1862.00	49.00	1032.61	45	3279	3324
1862.50	50	1057.39	45	3279	3324
1863.00	51	1082.73	45	3840	3885
1863.50	52	1108.64	45	4440	4485
1864.00	53.50	1135.10	46	5080	5126

ALTERNATIVE NO. 3
Storage and Discharge vs Stage Data for North Heights Dam (No.11)

Principal Spillway: 15 inch orifice plate
Emergency Spillway: 100-foot spillway, Elevation = 1837 feet

Orifice Output		Uneven Weir Output	
Stage (ft)	Orifice Discharg (cfs)	Stage (ft)	Discharg (cfs)
1778.97	0	1837.00	0
1780.50	6	1838.00	22
1785.00	14	1839.00	149
1790.00	20	1840.00	338
1795.00	24	1841.00	576
1800.00	28	1842.00	857
1805.00	31	1843.00	1178
1810.00	34	1844.00	1537
1815.00	36	1845.00	1931
1820.00	39	1846.00	2361
1825.00	41	1847.00	2825
1830.00	43	1848.00	3322
1835.00	45	1849.00	3852
1840.00	47	1850.00	4416
1845.00	50	1851.00	5012
1850.00	51	1852.00	5641
		1853.00	6303
		1854.00	7085
		1855.00	8539
		1856.00	10652

GVSCE					
Stage NGVD 29 Datum	Surface Area (acres)	Storage Volume (acre-feet)	Discharge, in cfs		
			Principal Spillway	Emergency Spillway	Total
1779.15	0.00	0.00	0	---	0
1784.00	0.09	0.15	13	---	13
1786.00	0.63	0.78	15	---	15
1788.00	1.41	2.77	18	---	18
1790.00	1.98	6.15	20	---	20
1792.00	2.62	10.73	22	---	22
1794.00	3.03	16.38	23	---	23
1796.00	3.65	23.05	25	---	25
1798.00	4.62	31.30	26	---	26
1800.00	5.59	41.49	28	---	28
1802.00	6.58	53.65	29	---	29
1804.00	7.68	67.89	30	---	30
1806.00	8.83	84.39	31	---	31
1808.00	10.23	103.43	33	---	33
1810.00	12.55	126.17	34	---	34
1810.50	---	133	34	---	34
1811.00	---	140	34	---	34
1811.50	---	147	34	---	34
1812.00	15.81	154.47	35	---	35
1812.50	---	163	35	---	35
1813.00	---	171	35	---	35
1813.50	---	179	36	---	36
1814.00	17.16	187.43	36	---	36
1814.50	---	196	36	---	36
1815.00	---	205	36	---	36
1815.50	---	214	37	---	37
1816.00	18.44	223.03	37	---	37
1816.50	---	233	37	---	37
1817.00	---	242	37	---	37
1817.50	---	252	38	---	38
1818.00	19.92	261.38	38	---	38
1818.50	---	272	38	---	38
1819.00	---	282	38	---	38
1819.50	---	292	39	---	39
1820.00	20.71	302.00	39	---	39
1820.50	---	313	39	---	39
1821.00	---	324	39	---	39
1822.00	---	346	40	---	40
1823.00	23.18	367.80	40	---	40
1824.00	---	392	41	---	41
1825.00	---	416	41	---	41
1826.00	---	440	42	---	42
1827.00	25.19	464.52	42	---	42
1828.00	---	490	42	---	42
1829.00	26.96	515.65	43	---	43
1830.00	29.9	544	43	---	43
1831.00	31.0	574	44	---	44
1832.00	32.2	606	44	---	44
1833.00	33.3	638	45	---	45
1834.00	34.4	672	45	---	45
1835.00	35.6	707	45	---	45
1836.00	36.71	743.33	46	---	46
1837.00	37.8	781	46	0	46
1838.00	39.0	819	47	22	69
1839.00	40.1	859	47	149	196
1840.00	41.25	899.25	47	338	385
1841.00	42.4	941	48	576	624
1842.00	43.5	984	48	857	905
1843.00	44.6	1028	49	1178	1227
1844.00	45.8	1073	49	1537	1586
1845.00	46.9	1120	49	1931	1980
1846.00	48.00	1166.99	50	2361	2411
1847.00	49.3	1216	50	2825	2875
1848.00	50.5	1266	50	3322	3372
1849.00	51.8	1317	51	3852	3903
1850.00	53.02	1369.03	51	4416	4467

ALTERNATIVE NO. 3

Storage and Discharge vs Stage Data for Sunridge Canyon Dam (No. 7)

Principal Spillway: 32 inch orifice plate
Emergency Spillway: 220-foot spillway, Elevation = 1930 feet

Orifice Output		Uneven Weir Output	
Stage (ft)	Culvert Discharge (cfs)	Stage (ft)	Discharge (cfs)
1884.66	0	1930.0	0
1886.50	20	1930.5	197
1890.00	56	1931.0	563
1895.00	83	1931.5	1046
1900.00	104	1932.0	1629
1905.00	121	1932.5	2302
1910.00	136	1933.0	3059
1915.00	150	1933.5	3898
1920.00	162	1934.0	4815
1925.00	174	1934.5	5808
1930.00	184	1935.0	6876
1935.00	195	1935.5	8017
1939.00	202	1936.0	9232
		1936.5	10520
		1937.0	11880
		1937.5	13313
		1938.0	14817
		1938.5	16394
		1939.0	18043
		1939.5	19765
		1940.0	21559
		1940.5	23427
		1941.0	25368
		1941.5	27383

GVSCE					
Stage NGVD 29 Datum	Surface Area (acres)	Storage Volume (acre-feet	Discharge, in cfs		
			Principal Spillway	Emergency Spillway	Total
1884.84	0.00	0.00	0	---	0
1886.00	0.00	0.00	1	---	1
1888.00	0.00	0.00	39	---	39
1890.00	0.00	0.00	56	---	56
1892.00	0.14	0.09	68	---	68
1894.00	0.39	0.60	79	---	79
1896.00	0.48	1.47	88	---	88
1898.00	0.72	2.66	96	---	96
1900.00	0.92	4.30	104	---	104
1902.00	1.02	6.24	111	---	111
1904.00	1.28	8.53	118	---	118
1906.00	1.46	11.27	125	---	125
1908.00	1.83	14.55	130	---	130
1910.00	2.28	18.66	136	---	136
1912.00	2.81	23.74	142	---	142
1914.00	3.30	29.84	147	---	147
1916.00	4.04	37.17	152	---	152
1918.00	5.10	46.29	157	---	157
1920.00	6.15	57.52	162	---	162
1922.00	7.32	70.97	167	---	167
1924.00	8.37	86.65	171	---	171
1924.50	---	91	172	---	172
1925.00	---	96	173	---	173
1925.50	---	100	175	---	175
1926.00	9.90	104.90	176	---	176
1926.50	---	110	177	---	177
1927.00	---	116	178	---	178
1927.50	---	121	179	---	179
1928.00	11.47	126.25	180	---	180
1928.50	---	132	181	---	181
1929.00	---	139	182	---	182
1929.50	---	145	183	---	183
1930.00	13.37	151.07	184	0	184
1930.50	---	158	185	197	382
1931.00	---	165	186	563	749
1931.50	---	172	187	1046	1233
1932.00	15.08	179.50	188	1629	1817
1932.50	---	187	189	2302	2491
1933.00	---	195	191	3059	3250
1933.50	---	203	192	3898	4090
1934.00	16.66	211.23	193	4815	5008
1934.50	---	220	194	5808	6002
1935.00	---	229	195	6876	7071
1935.50	---	238	196	8017	8213
1936.00	18.75	246.62	197	9232	9429
1936.50	---	256	198	10520	10718
1937.00	---	266	198	11880	12078
1937.50	---	276	199	13313	13512
1938.00	20.23	285.59	200	14817	15017
1938.50	---	296	201	16394	16595
1939.00	20.89	306.14	202	18043	18245

APPENDIX L

Supporting hydraulic calculations and HEC-1 model output for Alternative No. 4

```
1*************************************
 *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              MAY   1991           *
 *           VERSION 4.0.1E          *
 *                                   *
 *  RUN DATE  10/21/96  TIME  16:07:18  *
 *                                   *
 *************************************
```

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

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1                                    HEC-1 INPUT                                    PAGE  1

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

  1           ID        FOUNTAIN HILLS ADMP - Project No. 63
  2           ID        Future Condition Model                          File:  DAMP-6.IH1
  3           ID        100-Year, 6-Hour Storm                         Date:  5/9/96 CCC
  4           ID
  5           ID        Alternative No. 4 Analysis:
  6           ID         Model for the Proposed Dam with data as follows:
  7           ID           (a) Principal Spillway = 1-72" RCP
  8           ID           (b) Emergency Spillway Elev. = 1739.5 ft      Width:    30.00  ft
  9           ID
 10           ID    ************************************************************************
 11           ID    ****  The inflow hydrograph to the proposed dam is assumed to equal  ****
 12           ID    ****  the inflow hydrograph to GEPD.  Subbasin 210, as delineated by ****
 13           ID    ****  the Ftn Hills FDS, is considered non-effective for this        ****
 14           ID    ****  reconnaissance level evaluation and is not modeled separately. ****
 15           ID    ************************************************************************
              *
 16           IT       5                    200
 17           IO       5
 18           IN      15
              *DIAGRAM
              *
 19           JD    3.30    0.01
 20           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
 21           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
 22           PC   0.962   0.972   0.983   0.991   1.000
 23           JD    3.28    0.50
 24           JD    3.23    2.80
 25           PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.067   0.076
 26           PC   0.087   0.100   0.120   0.163   0.252   0.451   0.694   0.837   0.900   0.938
 27           PC   0.950   0.963   0.975   0.988   1.000
 28           JD    3.04    16.0
 29           PC   0.000   0.015   0.020   0.030   0.048   0.063   0.076   0.090   0.105   0.119
 30           PC   0.135   0.152   0.175   0.222   0.304   0.472   0.670   0.796   0.868   0.912
 31           PC   0.946   0.960   0.973   0.987   1.000
              *

 32           KK   C560I
 33           KM        BASIN S207 (Inflow to Dam 6 - Aspen Dam)
 34           KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 35           KM        L=      3.9  Lca=      2.2   S=  464.7  Kn= .038  LAG=  38.3
 36           KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 37           BA    2.15
 38           LG     .17     .31    4.90     .29   31.55
 39           UI    189.    273.    681.   1079.   1350.   1645.   2155.   1382.   1135.   1002.
 40           UI    881.    763.    641.    518.    452.    411.    331.    263.    231.    207.
 41           UI    163.    145.    124.     92.     92.     92.     47.     36.     36.     36.
 42           UI     36.     36.     36.     36.     36.      0.      0.      0.      0.      0.
 43           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
1                                    HEC-1 INPUT                                    PAGE  2

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

 44           KK   C5600
 45           KM      Reservoir route at C560 (Dam 6).
 46           RS       1    ELEV  1808.8
 47           SV    0.00    1.71   14.81   34.65   60.43   93.47  135.64  183.00  186.00  191.44
 48           SV  197.00  205.00  212.00  219.00  226.40  234.00  242.00  246.00  250.00  254.00
 49           SE  1808.8  1812.0  1816.0  1820.0  1824.0  1828.0  1832.0  1835.4  1835.6  1836.0
 50           SE  1836.4  1836.8  1837.2  1837.6  1838.0  1838.4  1838.8  1839.0  1839.2  1839.4
```

```
 51          SQ       0      57     136     184     224     257     285     303     319     440
 52          SQ     691    1055    1500    2018    2600    3243    3944    4315    4699    5097
 53          RL                    0.40
             *

 54          KK  560599
 55          KM      Normal depth channel route
 56          RS       1    FLOW      -1
 57          RC   0.050   0.025   0.050  3127.0  0.0272
 58          RX  9850.4  9950.4  9974.4 10000.0 10035.5 10059.8 10080.4 10104.4
 59          RY  1772.0  1771.7  1765.3  1765.3  1765.9  1768.5  1773.3  1773.7
             *

 60          KK   C578I
 61          KM        BASIN S208 (Inflow to Dam 11 - N. Heights Dam)
 62          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 63          KM        L=      3.0  Lca=      1.6   S=  488.9  Kn= .022  LAG=  17.7
 64          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 65          BA    2.00
 66          LG     .10     .25    4.80     .28   50.48
 67          UI    513.   1937.   3377.   3020.   1966.   1434.    971.    720.    461.    339.
 68          UI    233.    186.     85.     73.     73.     73.      0.      0.      0.      0.
 69          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

 70          KK   C578O
 71          KM      Reservoir route at C578 (Dam 11).
 72          RS       1    ELEV  1779.2
 73          SV    0.00   16.38   31.30   53.65   84.39  126.17  138.00  143.00  147.00  154.47
 74          SV  161.00  167.00  174.00  181.00  187.43  194.00  202.00  205.00
 75          SE  1779.2  1794.0  1798.0  1802.0  1806.0  1810.0  1810.8  1811.2  1811.6  1812.0
 76          SE  1812.4  1812.8  1813.2  1813.6  1814.0  1814.4  1814.8  1815.0
 77          SQ       0     131     181     221     254     283     305     325     328     366
 78          SQ     522     812    1194    1651    2176    2763    3406    4104    4855    5250
 79          SE  1779.2  1786.0  1790.0  1794.0  1798.0  1802.0  1806.0  1810.0  1810.8  1811.2
 80          SE  1811.6  1812.0  1812.4  1812.8  1813.2  1813.6  1814.0  1814.4  1814.8  1815.0
 81          RL                    0.97
             *

 82          KK  578599
 83          KM      Normal depth channel route
 84          RS       1    FLOW      -1
 85          RC   0.055   0.045   0.055  3762.0 0.01624
 86          RX  9928.9  9945.0  9963.1  9990.6 10012.2 10035.4 10052.8 10069.6
 87          RY  1755.7  1746.3  1746.1  1741.7  1743.3  1743.7  1744.6  1755.7
             *
```



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

 88          KK   C584I
 89          KM        BASIN S209 (Inflow to Dam 7 - SunRidge Canyon)
 90          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 91          KM        L=      3.2  Lca=      1.7   S=  582.3  Kn= .024  LAG=  19.9
 92          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 93          BA    1.60
 94          LG     .13     .28    4.62     .32   41.50
 95          UI    316.   1213.   2067.   2665.   1606.   1245.    915.    659.    495.    332.
 96          UI    255.    187.    133.     99.     52.     52.     52.     52.      0.      0.
 97          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

 98          KK   C584O
 99          KM      Reservoir route at C584 (Dam 7).
100          RS       1    ELEV  1884.8
101          SV    0.00   14.55   37.17   57.52   86.65   94.00   97.00  101.00  104.90  109.00
102          SV  113.00  118.00  122.00  126.25  131.00  133.00  136.00  139.00
103          SE  1884.8  1908.0  1916.0  1920.0  1924.0  1924.8  1925.2  1925.6  1926.0  1926.4
104          SE  1926.8  1927.2  1927.6  1928.0  1928.4  1928.6  1928.8  1929.0
105          SQ       0     135     223     285     326     341     355     358     385     493
106          SQ     704    1007    1394    1852    2374    2956    3596    3937    4292    4661
107          SE  1884.8  1892.0  1900.0  1908.0  1916.0  1920.0  1924.0  1924.8  1925.2  1925.6
108          SE  1926.0  1926.4  1926.8  1927.2  1927.6  1928.0  1928.4  1928.6  1928.8  1929.0
109          RL                    0.15
             *

110          KK  584599
111          KM      Normal depth channel route
112          RS       2    FLOW      -1
113          RC   0.065   0.050   0.065  6526.0 0.02571
114          RX  9927.6  9939.8  9951.9  9985.3 10036.0 10067.5 10119.2 10188.7
115          RY  1796.3  1791.2  1788.3  1784.1  1784.9  1788.0  1790.2  1796.4
             *

116          KK    S210
117          KM        BASIN S210 (Inflows from the watershed above Dam 4)
118          KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
119          KM        L=      1.9  Lca=       .9   S=  360.7  Kn= .030  LAG=  17.0
120          KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
121          BA    1.38
122          LG     .09     .24    5.61     .19   24.82
123          UI    386.   1462.   2587.   1930.   1339.    946.    649.    444.    315.    211.
124          UI    136.    104.     52.     52.     52.      0.      0.      0.      0.      0.
125          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

126          KK   DAMPI
127          KM   ************************************************************************
```

```
 128          KM   ** DAMPI is the total flow at the proposed dam above Golden Eagle Blvd, **
 129          KM   ** which is assumed to be equal to the inflow to GEPD.                   **
 130          KM   ***********************************************************************
 131          HC       4
              *
1                                          HEC-1 INPUT                                          PAGE  4

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


 132          KK   DAMPO
 133          KM      Reservoir route at DAMPO
 134          KM      Principal Spillway: 1-72 inch RCP
 135          KM      Emergency Spillway Elevation:      1739.5 ft        Width:   30.00  ft
 136          KO       5
 137          RS       1    ELEV  1714.0
 138          SV    0.00    0.82   10.25   28.90   58.14   90.91  115.90  144.98  240.35  282.59
 139          SV  344.19  414.84  498.16  592.65  698.18  813.61  938.87 1074.50 1143.74  1299.5
 140          SE  1714.0  1718.0  1722.0  1725.0  1728.0  1730.5  1732.0  1733.5  1737.5  1739.0
 141          SE  1741.0  1743.0  1745.0  1747.0  1749.0  1751.0  1753.0  1755.0  1756.0  1758.0
 142          SQ       0     114     284     377     440     487     515     544     619     647
 143          SQ     764    1229    1999    3059    4422    6098    8110   10479   11814   14782
              *
              *
              * *   C599I is assumed equal to DAMPO
              *

 144          KK   C599O
 145          KM      Reservoir route at C599 (GEPD).
 146          KO       5
 147          RS       1    ELEV  1694.7
 148          SV    0.00   16.85   31.66   52.71   80.85   95.00   98.00  102.00  105.00  109.00
 149          SV  113.00  116.14  120.00  124.00  128.00  136.00  139.00  144.00  148.00  152.00
 150          SE  1694.7  1708.0  1710.0  1712.0  1714.0  1714.8  1715.0  1715.2  1715.4  1715.6
 151          SE  1715.8  1716.0  1716.2  1716.4  1716.6  1717.0  1717.2  1717.4  1717.6  1717.8
 152          SQ       0      38     214     312     384     443     497     543     587     628
 153          SQ     642     754     957    1262    1665    2182    2483    2811    3164    3540
 154          SE  1694.7  1696.0  1700.0  1702.0  1704.0  1706.0  1708.0  1710.0  1712.0  1714.0
 155          SE  1714.8  1715.4  1715.8  1716.2  1716.6  1717.0  1717.2  1717.4  1717.6  1717.8
 156          RL                   0.97
 157          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    32       C560I
                 V
                 V
    44       C560O
                 V
                 V
    54      560599
                 .
                 .
    60           .       C578I
                 .           V
                 .           V
    70           .       C578O
                 .           V
                 .           V
    82           .      578599
                 .           .
                 .           .
    88           .           .      C584I
                 .           .          V
                 .           .          V
    98           .           .      C584O
                 .           .          V
                 .           .          V
   110           .           .     584599
                 .           .          .
                 .           .          .
   116           .           .          .       S210
                 .           .          .          .
                 .           .          .          .
   126       DAMPI.................................
                 V
                 V
   132       DAMPO
                 V
                 V
   144       C599O

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*****************************************
 *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
 *              MAY   1991               *
 *            VERSION 4.0.1E             *
 *                                       *
 *  RUN DATE  10/21/96  TIME  16:07:18   *
 *                                       *
 *****************************************

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

```
                    FOUNTAIN HILLS ADMP - Project No. 63
                    Future Condition Model                          File:  DAMP-6.IH1
                    100-Year, 6-Hour Storm                         Date:  5/9/96 CCC

                    Alternative No. 4 Analysis:
                     Model for the Proposed Dam with data as follows:
                       (a) Principal Spillway = 1-72" RCP
                       (b) Emergency Spillway Elev. = 1739.5 ft      Width:    30.00  ft

                 ************************************************************************
                 ****  The inflow hydrograph to the proposed dam is assumed to equal  ****
                 ****  the inflow hydrograph to GEPD.  Subbasin 210, as delineated by ****
                 ****  the Ftn Hills FDS, is considered non-effective for this        ****
                 ****  reconnaissance level evaluation and is not modeled separately. ****
                 ************************************************************************

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

   IT        HYDROGRAPH TIME DATA
                 NMIN           5  MINUTES IN COMPUTATION INTERVAL
                 IDATE      1   0  STARTING DATE
                 ITIME       0000  STARTING TIME
                    NQ        200  NUMBER OF HYDROGRAPH ORDINATES
                NDDATE      1   0  ENDING DATE
                NDTIME       1635  ENDING TIME
                 ICENT         19  CENTURY MARK

              COMPUTATION INTERVAL    0.08 HOURS
                   TOTAL TIME BASE   16.58 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

19 JD         INDEX STORM NO. 1
                 STRM        3.30  PRECIPITATION DEPTH
                 TRDA        0.01  TRANSPOSITION DRAINAGE AREA

20 PI           PRECIPITATION PATTERN
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.03
                  0.03      0.03      0.05      0.05      0.05      0.15      0.15      0.15      0.03      0.03
                  0.03      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00

23 JD         INDEX STORM NO. 2
                 STRM        3.28  PRECIPITATION DEPTH
                 TRDA        0.50  TRANSPOSITION DRAINAGE AREA

 0 PI           PRECIPITATION PATTERN
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.03
                  0.03      0.03      0.05      0.05      0.05      0.15      0.15      0.15      0.03      0.03
                  0.03      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00

24 JD         INDEX STORM NO. 3
                 STRM        3.23  PRECIPITATION DEPTH
                 TRDA        2.80  TRANSPOSITION DRAINAGE AREA

25 PI           PRECIPITATION PATTERN
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.03
                  0.03      0.03      0.07      0.07      0.07      0.08      0.08      0.08      0.05      0.05
                  0.05      0.02      0.02      0.02      0.01      0.01      0.01      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00

28 JD         INDEX STORM NO. 4
                 STRM        3.04  PRECIPITATION DEPTH
                 TRDA       16.00  TRANSPOSITION DRAINAGE AREA

29 PI           PRECIPITATION PATTERN
                  0.01      0.01      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.01
                  0.01      0.01      0.00      0.01      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.01      0.00      0.00      0.00      0.00      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.02      0.03
                  0.03      0.03      0.06      0.06      0.06      0.07      0.07      0.07      0.04      0.04
                  0.04      0.02      0.02      0.02      0.01      0.01      0.01      0.01      0.01      0.01
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00
```

```
 136 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE

 146 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
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	C560I	2219.	4.42	455.	166.	166.	2.15		
+	ROUTED TO	C560O	295.	5.75	274.	166.	166.	2.15		
+	ROUTED TO	560599	295.	5.83	274.	166.	166.	2.15		
+	HYDROGRAPH AT	C578I	3273.	4.08	516.	188.	188.	2.00		
+	ROUTED TO	C578O	1174.	4.67	394.	188.	188.	2.00		
+	ROUTED TO	578599	1075.	4.75	394.	188.	188.	2.00		
+	HYDROGRAPH AT	C584I	2567.	4.17	379.	138.	138.	1.60		
+	ROUTED TO	C584O	916.	4.67	354.	138.	138.	1.60		
+	ROUTED TO	584599	812.	4.83	352.	138.	138.	1.60		
+	HYDROGRAPH AT	S210	2520.	4.08	322.	117.	117.	1.38		
+	4 COMBINED AT	DAMPI	2444.	4.17	1163.	553.	553.	7.13		
+	ROUTED TO	DAMPO	679.	9.25	655.	496.	496.	7.13		
+	ROUTED TO	C599O	606.	12.83	600.	460.	460.	7.13		

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

```
1*************************************                                    *************************************
 *                                   *                                    *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                *   U.S. ARMY CORPS OF ENGINEERS    *
 *              MAY   1991           *                                    *   HYDROLOGIC ENGINEERING CENTER   *
 *            VERSION 4.0.1E         *                                    *         609 SECOND STREET         *
 *                                   *                                    *      DAVIS, CALIFORNIA 95616      *
 *  RUN DATE  10/21/96  TIME  15:40:47 *                                  *          (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        FOUNTAIN HILLS ADMP - Project No. 63
        2           ID        Future Condition Model                            File:  DAMP-24.IH1
        3           ID        100-Year, 24-Hour Storm                           Date:  5/9/96 CCC
        4           ID
        5           ID        Alternative No. 4 Analysis:
        6           ID         Model for the Proposed Dam with data as follows:
        7           ID           (a) Principal Spillway = 1-72" RCP
        8           ID           (b) Emergency Spillway Elev. = 1739.5 ft      Width:    30.00  ft
        9           ID
       10           ID    ************************************************************************
       11           ID    ****  The inflow hydrograph to the proposed dam is assumed to equal  ****
       12           ID    ****  the inflow hydrograph to GEPD.  Subbasin 210, as delineated by ****
       13           ID    ****  the Ftn Hills FDS, is considered non-effective for this        ****
       14           ID    ****  reconnaissance level evaluation and is not modeled separately. ****
       15           ID    ************************************************************************
                    *
       16           IT       5                    600
       17           IO       5
       18           IN      30
                    *DIAGRAM
       19           JD    4.20    0.01
       20           PC    .000    .005    .011    .016    .022    .028    .035    .041    .048    .056
       21           PC    .063    .071    .080    .089    .098    .109    .120    .133    .147    .163
       22           PC    .181    .204    .235    .283    .663    .735    .772    .799    .820    .838
       23           PC    .854    .868    .880    .891    .902    .912    .921    .929    .937    .945
       24           PC    .952    .959    .965    .972    .978    .984    .989    .995   1.000
       25           JD    4.12    1.38
       26           JD    4.12    1.60
       27           JD    4.10    2.00
       28           JD    4.10    2.15
       29           JD    3.99   10.00
                    *

       30           KK   C560I
       31           KM        BASIN S207 (Inflow to Dam 6 - Aspen Dam)
       32           KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
       33           KM        L=      3.9  Lca=      2.2   S=  464.7  Kn= .038 LAG= 38.3
       34           KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
       35           BA    2.15
       36           LG     .17     .31    4.90     .29   31.55
       37           UI    189.    273.    681.   1079.   1350.   1645.   2155.   1382.   1135.   1002.
       38           UI    881.    763.    641.    518.    452.    411.    331.    263.    231.    207.
       39           UI    163.    145.    124.     92.     92.     92.     47.     36.     36.     36.
       40           UI     36.     36.     36.     36.     36.      0.      0.      0.      0.      0.
       41           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *

       42           KK   C560O
       43           RS       1    ELEV  1808.8
       44           KM      Reservoir route at C560 (Dam 6).
       45           SV    0.00    1.71   14.81   34.65   60.43   93.47  135.64  183.00  186.00  191.44
       46           SV  197.00  205.00  212.00  219.00  226.40  234.00  242.00  246.00  250.00  254.00
       47           SE  1808.8  1812.0  1816.0  1820.0  1824.0  1828.0  1832.0  1835.4  1835.6  1836.0
       48           SE  1836.4  1836.8  1837.2  1837.6  1838.0  1838.4  1838.8  1839.0  1839.2  1839.4
       49           SQ       0      57     136     184     224     257     285     303     319     440
1                                                HEC-1 INPUT                                                          PAGE  2

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

       50           SQ     691    1055    1500    2018    2600    3243    3944    4315    4699    5097
       51           RL                    0.40
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                *

 52             KK  560599
 53             KM      Normal depth channel route
 54             RS       1    FLOW      -1
 55             RC   0.050   0.025   0.050  3127.0  0.0272
 56             RX  9850.4  9950.4  9974.4 10000.0 10035.5 10059.8 10080.4 10104.4
 57             RY  1772.0  1771.7  1765.3  1765.3  1765.9  1768.5  1773.3  1773.7
                *

 58             KK   C578I
 59             KM        BASIN S208 (Inflow to Dam 11 - N. Heights Dam)
 60             KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 61             KM        L=      3.0  Lca=      1.6   S=  488.9  Kn= .021  LAG=  16.9
 62             KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 63             BA    2.00
 64             LG     .10     .25    4.80     .28   50.48
 65             UI    513.   1937.   3377.   3020.   1966.   1434.    971.    720.    461.    339.
 66             UI    233.    186.     85.     73.     73.     73.      0.      0.      0.      0.
 67             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *

 68             KK   C578O
 69             KM      Reservoir route at C578 (Dam 11).
 70             RS       1    ELEV  1779.2
 71             SV    0.00   16.38   31.30   53.65   84.39  126.17  138.00  143.00  147.00  154.47
 72             SV  161.00  167.00  174.00  181.00  187.43  194.00  202.00  205.00
 73             SE  1779.2  1794.0  1798.0  1802.0  1806.0  1810.0  1810.8  1811.2  1811.6  1812.0
 74             SE  1812.4  1812.8  1813.2  1813.6  1814.0  1814.4  1814.8  1815.0
 75             SQ       0     131     181     221     254     283     305     325     328     366
 76             SQ     522     812    1194    1651    2176    2763    3406    4104    4855    5250
 77             SE  1779.2  1786.0  1790.0  1794.0  1798.0  1802.0  1806.0  1810.0  1810.8  1811.2
 78             SE  1811.6  1812.0  1812.4  1812.8  1813.2  1813.6  1814.0  1814.4  1814.8  1815.0
 79             RL                   0.97
                *

 80             KK  578599
 81             KM      Normal depth channel route
 82             RS       3    FLOW      -1
 83             RC   0.055   0.045   0.055  3762.0 0.01624
 84             RX  9928.9  9945.0  9963.1  9990.6 10012.2 10035.4 10052.8 10069.6
 85             RY  1755.7  1746.3  1746.1  1741.7  1743.3  1743.7  1744.6  1755.7
                *

 86             KK   C584I
 87             KM        BASIN S209 (Inflow to Dam 7 - SunRidge Canyon)
 88             KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 89             KM        L=      3.2  Lca=      1.7   S=  582.3  Kn= .024  LAG=  19.9
 90             KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 91             BA    1.60
 92             LG     .13     .28    4.62     .32   41.50
 93             UI    314.   1207.   2056.   2667.   1607.   1247.    919.    660.    498.    332.
 94             UI    257.    188.    133.    101.     52.     52.     52.     52.      0.      0.
1                                              HEC-1 INPUT                                          PAGE  3

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

 95             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *

 96             KK   C584O
 97             KM      Reservoir route at C584 (Dam 7).
 98             RS       1    ELEV  1884.8
 99             SV    0.00   14.55   37.17   57.52   86.65   94.00   97.00  101.00  104.90  109.00
100             SV  113.00  118.00  122.00  126.25  131.00  133.00  136.00  139.00
101             SE  1884.8  1908.0  1916.0  1920.0  1924.0  1924.8  1925.2  1925.6  1926.0  1926.4
102             SE  1926.8  1927.2  1927.6  1928.0  1928.4  1928.6  1928.8  1929.0
103             SQ       0     135     223     285     326     341     355     358     385     493
104             SQ     704    1007    1394    1852    2374    2956    3596    3937    4292    4661
105             SE  1884.8  1892.0  1900.0  1908.0  1916.0  1920.0  1924.0  1924.8  1925.2  1925.6
106             SE  1926.0  1926.4  1926.8  1927.2  1927.6  1928.0  1928.4  1928.6  1928.8  1929.0
107             RL                   0.15
                *

108             KK  584599
109             KM      Normal depth channel route
110             RS       3    FLOW      -1
111             RC   0.065   0.050   0.065  6526.0 0.02571
112             RX  9927.6  9939.8  9951.9  9985.3 10036.0 10067.5 10119.2 10188.7
113             RY  1796.3  1791.2  1788.3  1784.1  1784.9  1788.0  1790.2  1796.4
                *

114             KK    S210
115             KM        BASIN S210 (Inflows from the watershed above Dam 4)
116             KM        THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
117             KM        L=      1.9  Lca=       .9   S=  360.7  Kn= .029  LAG=  16.5
118             KM        PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
119             BA    1.38
120             LG     .09     .24    5.61     .19   24.82
121             UI    386.   1462.   2587.   1930.   1339.    946.    649.    444.    315.    211.
122             UI    136.    104.     52.     52.     52.      0.      0.      0.      0.      0.
123             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *

124             KK   DAMPI
125             KM   ************************************************************************
126             KM   ** DAMPI is the total flow at the proposed dam above Golden Eagle Blvd, **
127             KM   ** which is assumed to be equal to the inflow to GEPD.                  **
128             KM   ************************************************************************
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          129          HC       4
                       *

          130          KK   DAMPO
          131          KM      Reservoir route at DAMPO
          132          KM      Principal Spillway: 1-72 inch RCP
          133          KM      Emergency Spillway Elevation:      1739.5 ft        Width:   30.00  ft
          134          KO       5
          135          RS       1    ELEV  1714.0
          136          SV    0.00    0.82   10.25   28.90   58.14   90.91  115.90  144.98  240.35  282.59
          137          SV  344.19  414.84  498.16  592.65  698.18  813.61  938.87 1074.50 1143.74  1299.5
          138          SE  1714.0  1718.0  1722.0  1725.0  1728.0  1730.5  1732.0  1733.5  1737.5  1739.0
          139          SE  1741.0  1743.0  1745.0  1747.0  1749.0  1751.0  1753.0  1755.0  1756.0  1758.0
1                                                HEC-1 INPUT                                                    PAGE  4

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

          140          SQ       0     114     284     377     440     487     515     544     619     647
          141          SQ     764    1229    1999    3059    4422    6098    8110   10479   11814   14782
                       *
                       *
                       * *   C599I is equal DAMPO
                       *

          142          KK   C599O
          143          KM      Reservoir route at C599 (GEPD).
          144          KO       5
          145          RS       1    ELEV  1694.7
          146          SV    0.00   16.85   31.66   52.71   80.85   95.00   98.00  102.00  105.00  109.00
          147          SV  113.00  116.14  120.00  124.00  128.00  136.00  139.00  144.00  148.00  152.00
          148          SE  1694.7  1708.0  1710.0  1712.0  1714.0  1714.8  1715.0  1715.2  1715.4  1715.6
          149          SE  1715.8  1716.0  1716.2  1716.4  1716.6  1717.0  1717.2  1717.4  1717.6  1717.8
          150          SQ       0      38     214     312     384     443     497     543     587     628
          151          SQ     642     754     957    1262    1665    2182    2483    2811    3164    3540
          152          SE  1694.7  1696.0  1700.0  1702.0  1704.0  1706.0  1708.0  1710.0  1712.0  1714.0
          153          SE  1714.8  1715.4  1715.8  1716.2  1716.6  1717.0  1717.2  1717.4  1717.6  1717.8
          154          RL                   0.97
          155          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    30       C560I
                V
                V
    42       C560O
                V
                V
    52      560599
                .
                .
    58          .       C578I
                .          V
                .          V
    68          .       C578O
                .          V
                .          V
    80          .      578599
                .          .
                .          .
    86          .          .      C584I
                .          .         V
                .          .         V
    96          .          .      C584O
                .          .         V
                .          .         V
   108          .          .     584599
                .          .          .
                .          .          .
   114          .          .          .       S210
                .          .          .          .
                .          .          .          .
   124       DAMPI.................................
                V
                V
   130       DAMPO
                V
                V
   142       C599O

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                                  ****************************************
 *                                      *                                  *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                  *   U.S. ARMY CORPS OF ENGINEERS       *
 *              MAY   1991              *                                  *   HYDROLOGIC ENGINEERING CENTER      *
 *            VERSION 4.0.1E            *                                  *         609 SECOND STREET            *
 *                                      *                                  *      DAVIS, CALIFORNIA 95616         *
 *  RUN DATE  10/21/96  TIME  15:40:47  *                                  *          (916) 551-1748              *
 *                                      *                                  *                                      *
 ****************************************                                  ****************************************
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FOUNTAIN HILLS ADMP - Project No. 63

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                    Future Condition Model                          File:  DAMP-24.IH1
                    100-Year, 24-Hour Storm                         Date:  5/9/96 CCC

                    Alternative No. 4 Analysis:
                     Model for the Proposed Dam with data as follows:
                       (a) Principal Spillway = 1-72" RCP
                       (b) Emergency Spillway Elev. = 1739.5 ft      Width:    30.00  ft

                 ************************************************************************
                 ****  The inflow hydrograph to the proposed dam is assumed to equal  ****
                 ****  the inflow hydrograph to GEPD.  Subbasin 210, as delineated by ****
                 ****  the Ftn Hills FDS, is considered non-effective for this        ****
                 ****  reconnaissance level evaluation and is not modeled separately. ****
                 ************************************************************************

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

   IT        HYDROGRAPH TIME DATA
                 NMIN           5  MINUTES IN COMPUTATION INTERVAL
                 IDATE      1   0  STARTING DATE
                 ITIME       0000  STARTING TIME
                    NQ        600  NUMBER OF HYDROGRAPH ORDINATES
                NDDATE      3   0  ENDING DATE
                NDTIME       0155  ENDING TIME
                 ICENT         19  CENTURY MARK

              COMPUTATION INTERVAL    0.08 HOURS
                   TOTAL TIME BASE   49.92 HOURS

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

19 JD        INDEX STORM NO. 1
                 STRM        4.20  PRECIPITATION DEPTH
                 TRDA        0.01  TRANSPOSITION DRAINAGE AREA

20 PI          PRECIPITATION PATTERN
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.06      0.06
                 0.06      0.06      0.06      0.06      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00

25 JD        INDEX STORM NO. 2
                 STRM        4.12  PRECIPITATION DEPTH
                 TRDA        1.38  TRANSPOSITION DRAINAGE AREA

 0 PI          PRECIPITATION PATTERN
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.06      0.06
                 0.06      0.06      0.06      0.06      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
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                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00
26 JD         INDEX STORM NO. 3
                STRM        4.12  PRECIPITATION DEPTH
                TRDA        1.60  TRANSPOSITION DRAINAGE AREA

 0 PI           PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.06      0.06
                0.06      0.06      0.06      0.06      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00
27 JD         INDEX STORM NO. 4
                STRM        4.10  PRECIPITATION DEPTH
                TRDA        2.00  TRANSPOSITION DRAINAGE AREA

 0 PI           PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.06      0.06
                0.06      0.06      0.06      0.06      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00
28 JD         INDEX STORM NO. 5
                STRM        4.10  PRECIPITATION DEPTH
                TRDA        2.15  TRANSPOSITION DRAINAGE AREA

 0 PI           PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
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                0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.06      0.06
                0.06      0.06      0.06      0.06      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
 29 JD        INDEX STORM NO. 6
                STRM        3.99  PRECIPITATION DEPTH
                TRDA       10.00  TRANSPOSITION DRAINAGE AREA

  0 PI         PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.06      0.06
                0.06      0.06      0.06      0.06      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
 134 KO       OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE

 144 KO       OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
1
                                    RUNOFF SUMMARY
                              FLOW IN CUBIC FEET PER SECOND
                           TIME IN HOURS,  AREA IN SQUARE MILES

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

        HYDROGRAPH AT
+                         C560I     2012.   12.25        404.        123.        59.      2.15

        ROUTED TO
+                         C560O      284.   13.67        263.        123.        59.      2.15

        ROUTED TO
+                        560599      284.   13.75        263.        123.        59.      2.15

        HYDROGRAPH AT
+                         C578I     3058.   12.08        454.        146.        70.      2.00

        ROUTED TO
+                         C578O      506.   12.75        328.        146.        70.      2.00

        ROUTED TO
+                        578599      491.   13.00        328.        145.        70.      2.00

        HYDROGRAPH AT
+                         C584I     2257.   12.08        332.        105.        50.      1.60

        ROUTED TO
+                         C584O      402.   12.75        316.        104.        50.      1.60

        ROUTED TO
+                        584599      390.   13.00        315.        104.        50.      1.60

        HYDROGRAPH AT
```

+		S210	2121.	12.08	271.	79.	38.	1.38
	4 COMBINED AT							
+		DAMPI	2697.	12.08	1116.	439.	212.	7.13
	ROUTED TO							
+		DAMPO	647.	17.92	635.	429.	212.	7.13
	ROUTED TO							
+		C5990	598.	22.00	594.	428.	212.	7.13

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

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1*************************************                                    *************************************
 *                                   *                                    *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                *   U.S. ARMY CORPS OF ENGINEERS    *
 *             MAY   1991            *                                    *   HYDROLOGIC ENGINEERING CENTER   *
 *           VERSION 4.0.1E          *                                    *         609 SECOND STREET         *
 *                                   *                                    *      DAVIS, CALIFORNIA 95616      *
 *  RUN DATE  10/21/96  TIME  15:28:21 *                                  *         (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        FOUNTAIN HILLS ADMP - Project No. 63
  2           ID        Future Condition Model                          File:  DAMP-PMF.IH1
  3           ID        0.5 PMF Storm                                   Date:  5/9/96 CCC
  4           ID
  5           ID        Alternative No. 4 Analysis:
  6           ID         Model for the Proposed Dam with data as follows:
  7           ID           (a) Principal Spillway = 1-72" RCP
  8           ID           (b) Emergency Spillway Elev. = 1739.5 ft      Width:    30.00  ft
  9           ID
 10           ID    ************************************************************************
 11           ID    ****  The inflow hydrograph to the proposed dam is assumed to equal  ****
 12           ID    ****  the inflow hydrograph to GEPD.  Subbasin 210, as delineated by ****
 13           ID    ****  the Ftn Hills FDS, is considered non-effective for this        ****
 14           ID    ****  reconnaissance level evaluation and is not modeled separately. ****
 15           ID    ************************************************************************
 16           ID
 17           ID        JR Record used to Calculate 0.5PMF
 18           ID
              *DIAGRAM
 19           IT       5       0       0     210
 20           IN       5
 21           IO       5
 22           JR    FLOW     0.5
              *

 23           KK   DAMPI
 24           KM        PMF Inflow Hydrograph to Proposed Dam
 25           BA    7.13
 26           QI    2557    2391    2090    1839    1635    1501    1401    1319    1252    1196
 27           QI    1155    1127    1109    1101    1113    1134    1144    1151    1158    1172
 28           QI    1192    1214    1239    1267    1298    2898    9000   20735   37590   53569
 29           QI   58754   55837   50581   43769   36839   31131   26527   22646   19477   16714
 30           QI   14532   12596   11016    9743    8724    7991    7404    6910    6514    6160
 31           QI    5743    5250    4788    4320    3861    3424    3064    2792    2565    2375
 32           QI    2209    2062    1898    1733    1604    1491    1399    1334    1286    1246
 33           QI    1212    1185    1167    1152    1129    1103    1085    1072    1060    1050
 34           QI    1040    1032    1023    1015    1007     999     991     984     977     969
 35           QI     961     952     944     935     927     919     912     906     900     894
 36           QI     888     880     873     865     857     848     838     827     814     801
 37           QI     785     766     744     709     673     642     618     597     580     565
 38           QI     552     544     536     529     522     515     509     502     496     490
 39           QI     483     477     471     464     457     450     442     434     426     418
 40           QI     410     402     394     382     363     337     311     288     268     253
 41           QI     239     228     219     211     205     200     196     192     187     183
 42           QI     179     174     170     166     162     159     155     152     148     145
 43           QI     142     139     136     133     131     128     125     123     120     118
 44           QI     115     113     111     108     106     103      98      90      82      77
 45           QI      72      67      62      56      51      47      42      39      35      32
              *

1                                          HEC-1 INPUT                                                    PAGE  2

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

 46           KK   DAMPO
 47           KM      Reservoir route at DAMPO
 48           KM      Principal Spillway: 1-72 inch RCP
 49           KM      Emergency Spillway Elevation:      1739.5 ft        Width:   30.00  ft
 50           KM      Antecedent water surface elevation set to emergency spillway crest
 51           RS       1    ELEV  1739.5
 52           SV    0.00    0.82   10.25   28.90   58.14   90.91  115.90  144.98  240.35  282.59
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53          SV  344.19  414.84  498.16  592.65  698.18  813.61  938.87 1074.50 1143.74  1299.5
54          SE  1714.0  1718.0  1722.0  1725.0  1728.0  1730.5  1732.0  1733.5  1737.5  1739.0
55          SE  1741.0  1743.0  1745.0  1747.0  1749.0  1751.0  1753.0  1755.0  1756.0  1758.0
56          SQ       0     114     284     377     440     487     515     544     619     647
57          SQ     764    1229    1999    3059    4422    6098    8110   10479   11814   14782
            *
            *
            * * C599I is the same as DAMPO
            *

58          KK   C5990
59          KM      Reservoir route at C599 (GEPD)
60          KM      Antecedent water surface set at emergency spillway crest
61          RS       1    ELEV  1715.0
62          SV    0.00    0.03    0.47   16.85   80.85      98  116.14  136.00  156.22  179.00
63          SV  200.89  214.00  226.00  252.10  281.00  310.47  344.00  376.60  413.00  450.02
64          SE  1694.7  1700.0 1702.00 1708.00 1714.00 1715.00 1716.00 1717.00 1718.00  1719.0
65          SE  1720.0 1720.50 1721.00 1722.00 1723.00 1724.00 1725.00 1726.00 1727.00  1728.0
66          SQ       0      95     214     497     628     651    1097    2182    3943    6256
67          SQ    8917   10376   11902   15529   21659   29743   39565   50633   62566   75527
68          SE  1694.7  1698.0  1700.0 1708.00 1714.00 1715.00 1716.00 1717.00 1718.00  1719.0
69          SE  1720.0 1720.50 1721.00 1722.00 1723.00 1724.00 1725.00 1726.00 1727.00  1728.0
70          RL                     0.97
71          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   23       DAMPI
               V
               V
   46       DAMPO
               V
               V
   58       C5990

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*****************************************                                  *****************************************
 *                                       *                                  *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                  *   U.S. ARMY CORPS OF ENGINEERS        *
 *              MAY   1991               *                                  *   HYDROLOGIC ENGINEERING CENTER       *
 *           VERSION 4.0.1E              *                                  *         609 SECOND STREET             *
 *                                       *                                  *      DAVIS, CALIFORNIA 95616          *
 *  RUN DATE  10/21/96  TIME  15:28:21   *                                  *          (916) 551-1748               *
 *                                       *                                  *                                       *
 *****************************************                                  *****************************************

                                FOUNTAIN HILLS ADMP - Project No. 63
                                Future Condition Model                          File:  DAMP-PMF.IH1
                                0.5 PMF Storm                                   Date:  5/9/96 CCC

                                Alternative No. 4 Analysis:
                                 Model for the Proposed Dam with data as follows:
                                   (a) Principal Spillway = 1-72" RCP
                                   (b) Emergency Spillway Elev. = 1739.5 ft      Width:    30.00  ft

                            ************************************************************************
                            ****  The inflow hydrograph to the proposed dam is assumed to equal  ****
                            ****  the inflow hydrograph to GEPD.  Subbasin 210, as delineated by ****
                            ****  the Ftn Hills FDS, is considered non-effective for this        ****
                            ****  reconnaissance level evaluation and is not modeled separately. ****
                            ************************************************************************

                                JR Record used to Calculate 0.5PMF


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

     IT          HYDROGRAPH TIME DATA
                        NMIN          5  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1    0  STARTING DATE
                       ITIME       0000  STARTING TIME
                          NQ        210  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      1    0  ENDING DATE
                      NDTIME       1725  ENDING TIME
                       ICENT         19  CENTURY MARK

                  COMPUTATION INTERVAL    0.08 HOURS
                       TOTAL TIME BASE   17.42 HOURS

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

```
     JP          MULTI-PLAN OPTION
                      NPLAN          1  NUMBER OF PLANS

     JR          MULTI-RATIO OPTION
                     RATIOS OF RUNOFF
                    0.50
1

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

                                                                  RATIOS APPLIED TO FLOWS
 OPERATION       STATION     AREA    PLAN            RATIO 1
                                                        0.50

 HYDROGRAPH AT
+                 DAMPI      7.13     1   FLOW       29377.
                                          TIME        2.50

 ROUTED TO
+                 DAMPO      7.13     1   FLOW       13229.
                                          TIME        3.00

                                     ** PEAK STAGES IN FEET **
                                     1   STAGE     1756.95
                                          TIME        3.00

 ROUTED TO
+                 C5990      7.13     1   FLOW       13013.
                                          TIME        3.08

                                     ** PEAK STAGES IN FEET **
                                     1   STAGE     1721.31
                                          TIME        3.08


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

ALTERNATIVE NO. 4

Storage and Discharge vs Stage Data for the Proposed Dam

Principal Spillway: 72 inch concrete pipe
Emergency Spillway: 30-foot wide spillway, Elevation = 1739.5 feet
Dam Crest: 1760.0 feet

HY8

Stage (ft)	Principal Spillway Circular (cfs)	Principal Spillway Total (cfs)
1714.00	0	0
1716.12	40	40
1716.34	80	80
1718.31	120	120
1719.15	160	160
1719.98	200	200
1720.87	240	240
1721.87	280	280
1723.03	320	320
1724.36	360	360
1725.87	400	400
1740.00	666	666
1743.74	720	720
1750.16	800	800
1760.00	895	895

Uneven Weir Output

Stage (ft)	Discharge (cfs)
1739.50	0
1740.50	83
1741.50	259
1742.50	519
1743.50	862
1744.50	1263
1745.50	1741
1746.50	2298
1747.50	2932
1748.50	3637
1749.50	4422
1750.50	5290
1751.50	6243
1752.50	7283
1753.50	8412
1754.50	9632
1755.50	10958
1756.50	12382
1757.50	13906
1758.50	15533
1759.50	17265
1760.50	19104

GVSCE

Stage NGVD 29 Datum	Surface Area (acres)	Storage Volume (acre-feet)	Discharge, in cfs: Principal Spillway	Discharge, in cfs: Emergenc Spillway	Discharge, in cfs: Total
1714.00	0.00	0.00	0	-	0
1715.00	0.0	0.01	19	-	19
1716.00	0.07	0.06	38	-	38
1717.00	0.4	0.27	95	-	95
1718.00	0.72	0.82	114	-	114
1719.00	1.4	1.88	153	-	153
1720.00	2.15	3.65	201	-	201
1721.00	3.3	6.36	245	-	245
1722.00	4.5	10.25	284	-	284
1723.00	5.6	15.30	319	-	319
1724.00	6.8	21.52	349	-	349
1725.00	8.0	28.90	377	-	377
1726.00	9.14	37.45	402	-	402
1727.00	10.3	47.19	421	-	421
1728.00	11.6	58.14	440	-	440
1729.00	12.8	70.29	459	-	459
1730.00	13.97	83.66	478	-	478
1730.50	15.0	90.91	487	-	487
1731.00	16.1	98.70	497	-	497
1731.50	17.2	107.03	506	-	506
1732.00	18.28	115.90	515	-	515
1732.50	19.0	125.23	525	-	525
1733.00	19.8	134.92	534	-	534
1733.50	20.5	144.98	544	-	544
1734.00	21.23	155.41	553	-	553
1734.50	22.1	166.24	562	-	562
1735.00	23.0	177.51	572	-	572
1735.50	23.8	189.21	581	-	581
1736.00	24.72	201.35	591	-	591
1736.50	25.6	213.93	600	-	600
1737.00	26.4	226.93	610	-	610
1737.50	27.3	240.35	619	-	619
1738.00	28.13	254.20	628	-	628
1738.50	28.4	268.33	638	-	638
1739.00	28.7	282.59	647	-	647
1739.50	28.9	296.99	657	0	657
1740.00	29.18	311.51	666	28	694
1741.00	32.3	344.19	680	83	764
1742.00	35.5	378.65	695	259	953
1743.00	38.7	414.84	709	519	1229
1744.00	41.8	452.76	723	862	1585
1745.00	45.0	498.16	736	1263	1999
1746.00	48.15	545.32	748	1741	2489
1747.00	50.5	592.65	761	2298	3059
1748.00	52.8	641.68	773	2932	3705
1749.00	55.2	698.18	786	3637	4422
1750.00	57.54	756.43	798	4422	5220
1751.00	60.1	813.61	808	5290	6098
1752.00	62.7	872.51	818	6243	7061
1753.00	65.3	938.87	827	7283	8110
1754.00	67.9	1006.97	837	8412	9249
1755.00	70.5	1074.50	847	9632	10479
1756.00	73.04	1143.74	856	10958	11814
1757.00	75.8	1220.73	866	12382	13248
1758.00	78.5	1299.46	876	13906	14782
1759.00	81.2	1377.62	885	15533	16418
1760.00	83.96	1457.49	895	17265	18160

APPENDIX M

Supporting HY-8 printouts and HEC-1 model output for Options P-1 through P-3

```
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *   U.S. ARMY CORPS OF ENGINEERS       *
 *              MAY   1991              *                                    *   HYDROLOGIC ENGINEERING CENTER      *
 *            VERSION 4.0.1E            *                                    *         609 SECOND STREET            *
 *                                      *                                    *      DAVIS, CALIFORNIA 95616         *
 *  RUN DATE  10/23/96  TIME  09:12:31  *                                    *          (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        FOUNTAIN HILLS ADMP - Project No. 63
        2           ID        Future Condition Model                          File:  opt_p-6.IH1
        3           ID        100-Year, 6-Hour Storm                          Date:  10/23/96 wso
        4           ID
        5           ID        Alternative No. 5: Principal Spillway Option Analysis
        6           ID
        7           ID        Inflow hydrograph to GEPD is directly coded using QI records to allow
        8           ID        analysis of all three options in one model.
                    *
        9           IT       5                    200
       10           IO       5
       11           IN       5
                    *DIAGRAM
                    *

       12           KK   P-1AI
       13           KM      Option P-1A:  Existing culverts plus perched 12'x 5' RCB
       14           KM      Inflow Hydrograph for GEPD (Dam 4)
       15           KM      Hydrograph equals that for C599I
       16           BA    7.13
       17           QI      0.      1.      6.     15.     22.     26.     29.     34.     42.     52.
       18           QI     63.     75.     89.    101.    112.    122.    133.    144.    154.    166.
       19           QI    177.    186.    194.    202.    208.    213.    217.    221.    224.    227.
       20           QI    231.    235.    239.    243.    248.    255.    265.    277.    295.    322.
       21           QI    361.    439.    564.    715.    964.   1319.   1621.   1907.   2200.   2397.
       22           QI   2444.   2349.   2251.   2118.   1971.   1926.   1922.   1889.   1846.   1772.
       23           QI   1669.   1565.   1459.   1352.   1266.   1190.   1128.   1086.   1055.   1033.
       24           QI   1020.   1012.   1005.   1000.    992.    981.    973.    966.    960.    956.
       25           QI    951.    948.    944.    940.    937.    933.    930.    926.    922.    919.
       26           QI    914.    910.    905.    900.    895.    889.    883.    877.    871.    864.
       27           QI    857.    848.    836.    823.    808.    792.    776.    757.    737.    718.
       28           QI    699.    679.    659.    639.    619.    600.    582.    567.    553.    540.
       29           QI    530.    521.    513.    505.    498.    491.    483.    476.    468.    461.
       30           QI    454.    447.    439.    431.    420.    409.    395.    381.    367.    353.
       31           QI    338.    323.    308.    293.    279.    266.    254.    242.    232.    223.
       32           QI    214.    205.    196.    187.    178.    171.    163.    157.    150.    144.
       33           QI    139.    134.    129.    124.    121.    118.    114.    111.    107.    103.
       34           QI     98.     94.     88.     81.     75.     69.     64.     59.     54.     50.
       35           QI     47.     44.     42.     40.     38.     36.     34.     32.     30.     27.
       36           QI     24.     20.     17.     14.     12.      9.      8.      6.      5.      4.
                    *

       37           KK   P-1AO
       38           KM      Reservoir route at GEPD (Dam 4).
       39           KM      Rating Data (Existing + perched 12'x 5' RCB)
       40           KM      This operation corresponds to Ftn Hills FDS operation C599O
       41           RS       1    ELEV  1694.7
       42           SV    0.00    0.03    0.47    2.35    7.35   16.85   31.66   52.71   80.85   90.00
       43           SV   98.00  107.0  116.14  126.00  136.00  146.00  156.22  167.00
       44           SE  1694.7  1700.0  1702.0  1704.0  1706.0  1708.0  1710.0  1712.0  1714.0  1714.5
       45           SE  1715.0  1715.5  1716.0  1716.5  1717.0  1717.5  1718.0  1718.5
       46           SQ       0     205     410     615     820    1025    1230    1435    1500    1845
       47           SE  1694.5  1699.8  1703.4  1705.2  1706.9  1708.6  1710.7  1713.3  1714.2  1720.0
       48           RL                   0.97
                    *

1                                                HEC-1 INPUT                                                    PAGE  2

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

       49           KK   P-1BI
```

```
 50          KM      Option P-1B:  Existing culverts plus perched 108" RCP
 51          KM      Inflow Hydrograph for GEPD (Dam 4)
 52          KM      Hydrograph equals that for C599I
 53          BA    7.13
 54          QI      0.      1.      6.     15.     22.     26.     29.     34.     42.     52.
 55          QI     63.     75.     89.    101.    112.    122.    133.    144.    154.    166.
 56          QI    177.    186.    194.    202.    208.    213.    217.    221.    224.    227.
 57          QI    231.    235.    239.    243.    248.    255.    265.    277.    295.    322.
 58          QI    361.    439.    564.    715.    964.   1319.   1621.   1907.   2200.   2397.
 59          QI   2444.   2349.   2251.   2118.   1971.   1926.   1922.   1889.   1846.   1772.
 60          QI   1669.   1565.   1459.   1352.   1266.   1190.   1128.   1086.   1055.   1033.
 61          QI   1020.   1012.   1005.   1000.    992.    981.    973.    966.    960.    956.
 62          QI    951.    948.    944.    940.    937.    933.    930.    926.    922.    919.
 63          QI    914.    910.    905.    900.    895.    889.    883.    877.    871.    864.
 64          QI    857.    848.    836.    823.    808.    792.    776.    757.    737.    718.
 65          QI    699.    679.    659.    639.    619.    600.    582.    567.    553.    540.
 66          QI    530.    521.    513.    505.    498.    491.    483.    476.    468.    461.
 67          QI    454.    447.    439.    431.    420.    409.    395.    381.    367.    353.
 68          QI    338.    323.    308.    293.    279.    266.    254.    242.    232.    223.
 69          QI    214.    205.    196.    187.    178.    171.    163.    157.    150.    144.
 70          QI    139.    134.    129.    124.    121.    118.    114.    111.    107.    103.
 71          QI     98.     94.     88.     81.     75.     69.     64.     59.     54.     50.
 72          QI     47.     44.     42.     40.     38.     36.     34.     32.     30.     27.
 73          QI     24.     20.     17.     14.     12.      9.      8.      6.      5.      4.
             *

 74          KK   P-1BO
 75          KM      Reservoir route at GEPD (Dam 4).
 76          KM      Rating Data (Existing + perched 108" RCP)
 77          KM      This operation corresponds to Ftn Hills FDS operation C5990
 78          RS       1    ELEV  1694.7
 79          SV    0.00    0.03    0.47    2.35    7.35   16.85   31.66   52.71   80.85   90.00
 80          SV   98.00  107.0  116.14  126.00  136.00  146.00  156.22  167.00
 81          SE  1694.7  1700.0  1702.0  1704.0  1706.0  1708.0  1710.0  1712.0  1714.0  1714.5
 82          SE  1715.0  1715.5  1716.0  1716.5  1717.0  1717.5  1718.0  1718.5
 83          SQ       0     205     410     615     820    1025    1230    1435    1500    1845
 84          SE  1694.5  1699.8  1704.8  1706.7  1708.2  1710.0  1712.0  1714.2  1715.0  1719.9
 85          RL                   0.97
             *

 86          KK   P-2AI
 87          KM      Option P-2A:  Existing culverts plus 7'x 6' RCB at same invert
 88          KM      Inflow Hydrograph for GEPD (Dam 4)
 89          KM      Hydrograph equals that for C599I
 90          BA    7.13
 91          QI      0.      1.      6.     15.     22.     26.     29.     34.     42.     52.
 92          QI     63.     75.     89.    101.    112.    122.    133.    144.    154.    166.
 93          QI    177.    186.    194.    202.    208.    213.    217.    221.    224.    227.
 94          QI    231.    235.    239.    243.    248.    255.    265.    277.    295.    322.
 95          QI    361.    439.    564.    715.    964.   1319.   1621.   1907.   2200.   2397.
 96          QI   2444.   2349.   2251.   2118.   1971.   1926.   1922.   1889.   1846.   1772.
 97          QI   1669.   1565.   1459.   1352.   1266.   1190.   1128.   1086.   1055.   1033.
 98          QI   1020.   1012.   1005.   1000.    992.    981.    973.    966.    960.    956.
```



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

 99          QI    951.    948.    944.    940.    937.    933.    930.    926.    922.    919.
100          QI    914.    910.    905.    900.    895.    889.    883.    877.    871.    864.
101          QI    857.    848.    836.    823.    808.    792.    776.    757.    737.    718.
102          QI    699.    679.    659.    639.    619.    600.    582.    567.    553.    540.
103          QI    530.    521.    513.    505.    498.    491.    483.    476.    468.    461.
104          QI    454.    447.    439.    431.    420.    409.    395.    381.    367.    353.
105          QI    338.    323.    308.    293.    279.    266.    254.    242.    232.    223.
106          QI    214.    205.    196.    187.    178.    171.    163.    157.    150.    144.
107          QI    139.    134.    129.    124.    121.    118.    114.    111.    107.    103.
108          QI     98.     94.     88.     81.     75.     69.     64.     59.     54.     50.
109          QI     47.     44.     42.     40.     38.     36.     34.     32.     30.     27.
110          QI     24.     20.     17.     14.     12.      9.      8.      6.      5.      4.
             *

111          KK   P-2AO
112          KM      Reservoir route at GEPD (Dam 4).
113          KM      Rating Data (Existing + 7'x 6' RCB at same invert)
114          KM      This operation corresponds to Ftn Hills FDS operation C5990
115          RS       1    ELEV  1694.7
116          SV    0.00    0.03    0.47    2.35    7.35   16.85   31.66   52.71   80.85   90.00
117          SV   98.00  107.0  116.14  126.00  136.00  146.00  156.22  167.00
118          SE  1694.7  1700.0  1702.0  1704.0  1706.0  1708.0  1710.0  1712.0  1714.0  1714.5
119          SE  1715.0  1715.5  1716.0  1716.5  1717.0  1717.5  1718.0  1718.5
120          SQ       0     180     360     540     720     900    1080    1260    1440    1500
121          SE  1694.5  1697.7  1699.3  1700.8  1702.6  1704.7  1707.4  1710.6  1714.3  1715.7
122          RL                   0.97
             *

123          KK   P-2BI
124          KM      Option P-2B:  Existing culverts plus 90" RCP at same invert
125          KM      Inflow Hydrograph for GEPD (Dam 4)
126          KM      Hydrograph equals that for C599I
127          BA    7.13
128          QI      0.      1.      6.     15.     22.     26.     29.     34.     42.     52.
129          QI     63.     75.     89.    101.    112.    122.    133.    144.    154.    166.
130          QI    177.    186.    194.    202.    208.    213.    217.    221.    224.    227.
131          QI    231.    235.    239.    243.    248.    255.    265.    277.    295.    322.
132          QI    361.    439.    564.    715.    964.   1319.   1621.   1907.   2200.   2397.
133          QI   2444.   2349.   2251.   2118.   1971.   1926.   1922.   1889.   1846.   1772.
134          QI   1669.   1565.   1459.   1352.   1266.   1190.   1128.   1086.   1055.   1033.
135          QI   1020.   1012.   1005.   1000.    992.    981.    973.    966.    960.    956.
136          QI    951.    948.    944.    940.    937.    933.    930.    926.    922.    919.
```

```
137        QI   914.   910.   905.   900.   895.   889.   883.   877.   871.   864.
138        QI   857.   848.   836.   823.   808.   792.   776.   757.   737.   718.
139        QI   699.   679.   659.   639.   619.   600.   582.   567.   553.   540.
140        QI   530.   521.   513.   505.   498.   491.   483.   476.   468.   461.
141        QI   454.   447.   439.   431.   420.   409.   395.   381.   367.   353.
142        QI   338.   323.   308.   293.   279.   266.   254.   242.   232.   223.
143        QI   214.   205.   196.   187.   178.   171.   163.   157.   150.   144.
144        QI   139.   134.   129.   124.   121.   118.   114.   111.   107.   103.
145        QI    98.    94.    88.    81.    75.    69.    64.    59.    54.    50.
146        QI    47.    44.    42.    40.    38.    36.    34.    32.    30.    27.
147        QI    24.    20.    17.    14.    12.     9.     8.     6.     5.     4.
           *
1                                    HEC-1 INPUT                                          PAGE  4

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

148        KK   P-2BO
149        KM      Reservoir route at GEPD (Dam 4).
150        KM      Rating Data (Existing + 90" RCP at same invert)
151        KM      This operation corresponds to Ftn Hills FDS operation C5990
152        RS       1    ELEV  1694.7
153        SV    0.00    0.03    0.47    2.35    7.35   16.85   31.66   52.71   80.85   90.00
154        SV   98.00   107.0  116.14  126.00  136.00  146.00  156.22  167.00
155        SE  1694.7  1700.0  1702.0  1704.0  1706.0  1708.0  1710.0  1712.0  1714.0  1714.5
156        SE  1715.0  1715.5  1716.0  1716.5  1717.0  1717.5  1718.0  1718.5
157        SQ       0     180     360     540     720     900    1080    1260    1440    1500
158        SE  1694.5  1698.2  1699.4  1700.9  1702.6  1704.6  1707.0  1709.9  1713.3  1714.6
159        RL                   0.97
           *

160        KK   P-3AI
161        KM      Option P-3A:  New 10'x 8' RCB with existing culverts removed
162        KM      Inflow Hydrograph for GEPD (Dam 4)
163        KM      Hydrograph equals that for C599I
164        BA    7.13
165        QI      0.      1.      6.     15.     22.     26.     29.     34.     42.     52.
166        QI     63.     75.     89.    101.    112.    122.    133.    144.    154.    166.
167        QI    177.    186.    194.    202.    208.    213.    217.    221.    224.    227.
168        QI    231.    235.    239.    243.    248.    255.    265.    277.    295.    322.
169        QI    361.    439.    564.    715.    964.   1319.   1621.   1907.   2200.   2397.
170        QI   2444.   2349.   2251.   2118.   1971.   1926.   1922.   1889.   1846.   1772.
171        QI   1669.   1565.   1459.   1352.   1266.   1190.   1128.   1086.   1055.   1033.
172        QI   1020.   1012.   1005.   1000.    992.    981.    973.    966.    960.    956.
173        QI    951.    948.    944.    940.    937.    933.    930.    926.    922.    919.
174        QI    914.    910.    905.    900.    895.    889.    883.    877.    871.    864.
175        QI    857.    848.    836.    823.    808.    792.    776.    757.    737.    718.
176        QI    699.    679.    659.    639.    619.    600.    582.    567.    553.    540.
177        QI    530.    521.    513.    505.    498.    491.    483.    476.    468.    461.
178        QI    454.    447.    439.    431.    420.    409.    395.    381.    367.    353.
179        QI    338.    323.    308.    293.    279.    266.    254.    242.    232.    223.
180        QI    214.    205.    196.    187.    178.    171.    163.    157.    150.    144.
181        QI    139.    134.    129.    124.    121.    118.    114.    111.    107.    103.
182        QI     98.     94.     88.     81.     75.     69.     64.     59.     54.     50.
183        QI     47.     44.     42.     40.     38.     36.     34.     32.     30.     27.
184        QI     24.     20.     17.     14.     12.      9.      8.      6.      5.      4.
           *

185        KK   P-3AO
186        KM      Reservoir route at GEPD (Dam 4).
187        KM      Rating Data (New 10'x 8' RCB; existing culverts removed)
188        KM      This operation corresponds to Ftn Hills FDS operation C5990
189        RS       1    ELEV  1694.7
190        SV    0.00    0.03    0.47    2.35    7.35   16.85   31.66   52.71   80.85   90.00
191        SV   98.00   107.0  116.14  126.00  136.00  146.00  156.22  167.00
192        SE  1694.7  1700.0  1702.0  1704.0  1706.0  1708.0  1710.0  1712.0  1714.0  1714.5
193        SE  1715.0  1715.5  1716.0  1716.5  1717.0  1717.5  1718.0  1718.5
194        SQ       0     200     400     600     800    1000    1200    1400    1600    1800
195        SE  1694.5  1698.6  1700.7  1702.6  1704.7  1707.0  1709.8  1713.1  1716.9  1721.6
196        RL                   0.97
           *
1                                    HEC-1 INPUT                                          PAGE  5

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

197        KK   P-3BI
198        KM      Option P-3B: New 120" RCP with existing culverts removed
199        KM      Inflow Hydrograph for GEPD (Dam 4)
200        KM      Hydrograph equals that for C599I
201        BA    7.13
202        QI      0.      1.      6.     15.     22.     26.     29.     34.     42.     52.
203        QI     63.     75.     89.    101.    112.    122.    133.    144.    154.    166.
204        QI    177.    186.    194.    202.    208.    213.    217.    221.    224.    227.
205        QI    231.    235.    239.    243.    248.    255.    265.    277.    295.    322.
206        QI    361.    439.    564.    715.    964.   1319.   1621.   1907.   2200.   2397.
207        QI   2444.   2349.   2251.   2118.   1971.   1926.   1922.   1889.   1846.   1772.
208        QI   1669.   1565.   1459.   1352.   1266.   1190.   1128.   1086.   1055.   1033.
209        QI   1020.   1012.   1005.   1000.    992.    981.    973.    966.    960.    956.
210        QI    951.    948.    944.    940.    937.    933.    930.    926.    922.    919.
211        QI    914.    910.    905.    900.    895.    889.    883.    877.    871.    864.
212        QI    857.    848.    836.    823.    808.    792.    776.    757.    737.    718.
213        QI    699.    679.    659.    639.    619.    600.    582.    567.    553.    540.
214        QI    530.    521.    513.    505.    498.    491.    483.    476.    468.    461.
215        QI    454.    447.    439.    431.    420.    409.    395.    381.    367.    353.
216        QI    338.    323.    308.    293.    279.    266.    254.    242.    232.    223.
217        QI    214.    205.    196.    187.    178.    171.    163.    157.    150.    144.
218        QI    139.    134.    129.    124.    121.    118.    114.    111.    107.    103.
219        QI     98.     94.     88.     81.     75.     69.     64.     59.     54.     50.
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220          QI     47.     44.     42.     40.     38.     36.     34.     32.     30.     27.
221          QI     24.     20.     17.     14.     12.      9.      8.      6.      5.      4.
             *

222          KK   P-3BO
223          KM      Reservoir route at GEPD (Dam 4).
224          KM      Rating Data (New 120" RCP; existing culverts removed)
225          KM      This operation corresponds to Ftn Hills FDS operation C5990
226          RS       1    ELEV  1694.7
227          SV    0.00    0.03    0.47    2.35    7.35   16.85   31.66   52.71   80.85   90.00
228          SV   98.00   107.0  116.14  126.00  136.00  146.00  156.22  167.00
229          SE  1694.7  1700.0  1702.0  1704.0  1706.0  1708.0  1710.0  1712.0  1714.0  1714.5
230          SE  1715.0  1715.5  1716.0  1716.5  1717.0  1717.5  1718.0  1718.5
231          SQ       0     200     400     600     800    1000    1200    1400    1600    1800
232          SE  1694.5  1700.0  1701.4  1703.4  1705.3  1707.6  1710.4  1713.7  1717.6  1722.0
233          RL                   0.97
234          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    12       P-1AI
                 V
                 V
    37       P-1AO
                 .
                 .
    49           .       P-1BI
                 .           V
                 .           V
    74           .       P-1BO
                 .           .
                 .           .
    86           .           .       P-2AI
                 .           .           V
                 .           .           V
   111           .           .       P-2AO
                 .           .           .
                 .           .           .
   123           .           .           .       P-2BI
                 .           .           .           V
                 .           .           .           V
   148           .           .           .       P-2BO
                 .           .           .           .
                 .           .           .           .
   160           .           .           .           .       P-3AI
                 .           .           .           .           V
                 .           .           .           .           V
   185           .           .           .           .       P-3AO
                 .           .           .           .           .
                 .           .           .           .           .
   197           .           .           .           .           .       P-3BI
                 .           .           .           .           .           V
                 .           .           .           .           .           V
   222           .           .           .           .           .       P-3BO

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*****************************************                                          ****************************************
 *                                        *                                          *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *                                          *    U.S. ARMY CORPS OF ENGINEERS      *
 *              MAY   1991                *                                          *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.0.1E              *                                          *          609 SECOND STREET           *
 *                                        *                                          *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE  10/23/96  TIME  09:12:31    *                                          *           (916) 551-1748             *
 *                                        *                                          *                                      *
 *****************************************                                          ****************************************


                                FOUNTAIN HILLS ADMP - Project No. 63
                                Future Condition Model                          File:  opt_p-6.IH1
                                100-Year, 6-Hour Storm                          Date:  10/23/96 wso

                                Alternative No. 5: Principal Spillway Option Analysis

                                Inflow hydrograph to GEPD is directly coded using QI records to allow
                                analysis of all three options in one model.

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

      IT          HYDROGRAPH TIME DATA
                         NMIN           5  MINUTES IN COMPUTATION INTERVAL
                        IDATE      1    0  STARTING DATE
                        ITIME        0000  STARTING TIME
                           NQ         200  NUMBER OF HYDROGRAPH ORDINATES
                       NDDATE      1    0  ENDING DATE
                       NDTIME        1635  ENDING TIME
                        ICENT          19  CENTURY MARK

                    COMPUTATION INTERVAL    0.08 HOURS
                         TOTAL TIME BASE   16.58 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
1
                                   RUNOFF SUMMARY
                             FLOW IN CUBIC FEET PER SECOND
                          TIME IN HOURS,  AREA IN SQUARE MILES

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

        HYDROGRAPH AT
+                       P-1AI   2444.   4.17       1163.       553.        553.       7.13
        ROUTED TO
+                       P-1AO   1498.   5.17       1156.       553.        553.       7.13
+                                                                                     1714.18     5.17
        HYDROGRAPH AT
+                       P-1BI   2444.   4.17       1163.       553.        553.       7.13
        ROUTED TO
+                       P-1BO   1473.   5.17       1147.       553.        553.       7.13
+                                                                                     1714.67     5.17
        HYDROGRAPH AT
+                       P-2AI   2444.   4.17       1163.       553.        553.       7.13
        ROUTED TO
+                       P-2AO   1428.   5.17       1163.       553.        553.       7.13
+                                                                                     1714.06     5.17
        HYDROGRAPH AT
+                       P-2BI   2444.   4.17       1163.       553.        553.       7.13
        ROUTED TO
+                       P-2BO   1463.   5.17       1163.       553.        553.       7.13
+                                                                                     1713.80     5.17
        HYDROGRAPH AT
+                       P-3AI   2444.   4.17       1163.       553.        553.       7.13
        ROUTED TO
+                       P-3AO   1451.   5.17       1162.       553.        553.       7.13
+                                                                                     1714.08     5.17
        HYDROGRAPH AT
+                       P-3BI   2444.   4.17       1163.       553.        553.       7.13
        ROUTED TO
+                       P-3BO   1430.   5.17       1161.       553.        553.       7.13
+                                                                                     1714.28     5.17


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

```
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *             MAY   1991               *
 *           VERSION 4.0.1E             *
 *                                      *
 *  RUN DATE  10/23/96  TIME  09:14:01  *
 *                                      *
 ****************************************
```

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

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

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

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

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1                                   HEC-1 INPUT                                   PAGE  1

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

  1           ID        FOUNTAIN HILLS ADMP - Project No. 63
  2           ID        Future Condition Model                          File:  opt_p-24.IH1
  3           ID        100-Year, 24-Hour Storm                          Date:  10/23/96 wso
  4           ID
  5           ID        Alternative No. 5: Principal Spillway Option Analysis
  6           ID
  7           ID        Inflow hydrograph to GEPD is directly coded using QI records to allow
  8           ID        analysis of all three options in one model.
              *
  9           IT       5                    400
 10           IO       5
 11           IN       5
              *DIAGRAM
              *

 12           KK   P-1AI
 13           KM      Option P-1A:  Existing culverts plus perched 12'x 5' RCB
 14           KM      Inflow Hydrograph for GEPD (Dam 4)
 15           KM      Hydrograph equals that for C599I
 16           BA    7.13
 17           QI      0.      0.      2.      4.      6.      7.      9.     11.     13.     16.
 18           QI     19.     23.     26.     30.     34.     39.     44.     47.     51.     53.
 19           QI     56.     59.     61.     63.     65.     66.     68.     69.     71.     72.
 20           QI     73.     74.     76.     77.     78.     79.     80.     81.     82.     83.
 21           QI     84.     84.     85.     86.     86.     87.     88.     88.     88.     89.
 22           QI     90.     90.     91.     92.     93.     94.     95.     96.     96.     97.
 23           QI     98.     98.     99.    100.    101.    101.    102.    102.    103.    104.
 24           QI    105.    106.    107.    108.    109.    110.    111.    112.    114.    115.
 25           QI    116.    117.    118.    118.    119.    120.    121.    123.    124.    125.
 26           QI    126.    128.    129.    131.    132.    134.    136.    137.    140.    142.
 27           QI    145.    147.    150.    152.    154.    157.    160.    163.    165.    168.
 28           QI    171.    174.    177.    180.    183.    187.    190.    194.    198.    202.
 29           QI    205.    210.    215.    220.    226.    231.    237.    242.    249.    258.
 30           QI    266.    274.    283.    292.    305.    322.    337.    352.    366.    466.
 31           QI    804.   1399.   1867.   2234.   2534.   2697.   2587.   2191.   1890.   1682.
 32           QI   1539.   1433.   1349.   1275.   1227.   1199.   1173.   1148.   1116.   1081.
 33           QI   1062.   1047.   1034.   1024.   1015.   1008.   1004.   1001.    998.    996.
 34           QI    993.    989.    986.    983.    980.    978.    974.    971.    968.    965.
 35           QI    961.    958.    954.    950.    947.    943.    939.    936.    932.    928.
 36           QI    923.    919.    914.    908.    903.    897.    892.    886.    880.    875.
 37           QI    869.    862.    853.    840.    825.    807.    789.    774.    759.    744.
 38           QI    727.    710.    693.    675.    658.    642.    628.    614.    601.    590.
 39           QI    579.    569.    560.    552.    544.    538.    531.    525.    520.    514.
 40           QI    510.    505.    500.    495.    490.    484.    479.    473.    468.    463.
 41           QI    457.    452.    446.    439.    430.    419.    407.    395.    382.    369.
 42           QI    357.    345.    333.    321.    310.    299.    288.    278.    269.    261.
 43           QI    254.    247.    241.    234.    226.    219.    213.    206.    200.    194.
 44           QI    188.    183.    177.    172.    167.    163.    159.    155.    151.    148.
 45           QI    145.    142.    140.    137.    134.    132.    129.    126.    124.    121.
 46           QI    117.    110.    104.     97.     91.     84.     77.     71.     64.     58.
 47           QI     52.     47.     42.     38.     34.     31.     28.     25.     22.     20.
 48           QI     18.     16.     14.     12.     11.      9.      8.      7.      6.      5.
 49           QI      5.      4.      3.      3.      3.      2.      2.      2.      1.      1.
 50           QI      1.      1.      1.      1.      1.      1.      0.      0.      0.      0.
 51           QI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
1                                   HEC-1 INPUT                                   PAGE  2

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
 52          KK   P-1AO
 53          KM      Reservoir route at GEPD (Dam 4).
 54          KM      Rating Data (Existing + perched 12'x 5' RCB)
 55          KM      This operation corresponds to Ftn Hills FDS operation C5990
 56          RS       1    ELEV  1694.7
 57          SV    0.00    0.03    0.47    2.35    7.35   16.85   31.66   52.71   80.85   90.00
 58          SV   98.00   107.0  116.14  126.00  136.00  146.00  156.22  167.00
 59          SE  1694.7  1700.0  1702.0  1704.0  1706.0  1708.0  1710.0  1712.0  1714.0  1714.5
 60          SE  1715.0  1715.5  1716.0  1716.5  1717.0  1717.5  1718.0  1718.5
 61          SQ       0     205     410     615     820    1025    1230    1435    1500    1845
 62          SE  1694.5  1699.8  1703.4  1705.2  1706.9  1708.6  1710.7  1713.3  1714.2  1720.0
 63          RL                   0.97
             *

 64          KK   P-1BI
 65          KM      Option P-1B:  Existing culverts plus perched 108" RCP
 66          KM      Inflow Hydrograph for GEPD (Dam 4)
 67          KM      Hydrograph equals that for C599I
 68          BA    7.13
 69          QI      0.      0.      2.      4.      6.      7.      9.     11.     13.     16.
 70          QI     19.     23.     26.     30.     34.     39.     44.     47.     51.     53.
 71          QI     56.     59.     61.     63.     65.     66.     68.     69.     71.     72.
 72          QI     73.     74.     76.     77.     78.     79.     80.     81.     82.     83.
 73          QI     84.     84.     85.     86.     86.     87.     88.     88.     88.     89.
 74          QI     90.     90.     91.     92.     93.     94.     95.     96.     96.     97.
 75          QI     98.     98.     99.    100.    101.    101.    102.    102.    103.    104.
 76          QI    105.    106.    107.    108.    109.    110.    111.    112.    114.    115.
 77          QI    116.    117.    118.    118.    119.    120.    121.    123.    124.    125.
 78          QI    126.    128.    129.    131.    132.    134.    136.    137.    140.    142.
 79          QI    145.    147.    150.    152.    154.    157.    160.    163.    165.    168.
 80          QI    171.    174.    177.    180.    183.    187.    190.    194.    198.    202.
 81          QI    205.    210.    215.    220.    226.    231.    237.    242.    249.    258.
 82          QI    266.    274.    283.    292.    305.    322.    337.    352.    366.    466.
 83          QI    804.   1399.   1867.   2234.   2534.   2697.   2587.   2191.   1890.   1682.
 84          QI   1539.   1433.   1349.   1275.   1227.   1199.   1173.   1148.   1116.   1081.
 85          QI   1062.   1047.   1034.   1024.   1015.   1008.   1004.   1001.    998.    996.
 86          QI    993.    989.    986.    983.    980.    978.    974.    971.    968.    965.
 87          QI    961.    958.    954.    950.    947.    943.    939.    936.    932.    928.
 88          QI    923.    919.    914.    908.    903.    897.    892.    886.    880.    875.
 89          QI    869.    862.    853.    840.    825.    807.    789.    774.    759.    744.
 90          QI    727.    710.    693.    675.    658.    642.    628.    614.    601.    590.
 91          QI    579.    569.    560.    552.    544.    538.    531.    525.    520.    514.
 92          QI    510.    505.    500.    495.    490.    484.    479.    473.    468.    463.
 93          QI    457.    452.    446.    439.    430.    419.    407.    395.    382.    369.
 94          QI    357.    345.    333.    321.    310.    299.    288.    278.    269.    261.
 95          QI    254.    247.    241.    234.    226.    219.    213.    206.    200.    194.
 96          QI    188.    183.    177.    172.    167.    163.    159.    155.    151.    148.
 97          QI    145.    142.    140.    137.    134.    132.    129.    126.    124.    121.
 98          QI    117.    110.    104.     97.     91.     84.     77.     71.     64.     58.
 99          QI     52.     47.     42.     38.     34.     31.     28.     25.     22.     20.
100          QI     18.     16.     14.     12.     11.      9.      8.      7.      6.      5.
101          QI      5.      4.      3.      3.      3.      2.      2.      2.      1.      1.
102          QI      1.      1.      1.      1.      1.      1.      0.      0.      0.      0.
103          QI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

104          KK   P-1BO
105          KM      Reservoir route at GEPD (Dam 4).
106          KM      Rating Data (Existing + perched 108" RCP)
107          KM      This operation corresponds to Ftn Hills FDS operation C5990
108          RS       1    ELEV  1694.7
109          SV    0.00    0.03    0.47    2.35    7.35   16.85   31.66   52.71   80.85   90.00
110          SV   98.00   107.0  116.14  126.00  136.00  146.00  156.22  167.00
111          SE  1694.7  1700.0  1702.0  1704.0  1706.0  1708.0  1710.0  1712.0  1714.0  1714.5
112          SE  1715.0  1715.5  1716.0  1716.5  1717.0  1717.5  1718.0  1718.5
113          SQ       0     205     410     615     820    1025    1230    1435    1500    1845
114          SE  1694.5  1699.8  1704.8  1706.7  1708.2  1710.0  1712.0  1714.2  1715.0  1719.9
115          RL                   0.97
             *

116          KK   P-2AI
117          KM      Option P-2A:  Existing culverts plus 7'x 6' RCB at same invert
118          KM      Inflow Hydrograph for GEPD (Dam 4)
119          KM      Hydrograph equals that for C599I
120          BA    7.13
121          QI      0.      0.      2.      4.      6.      7.      9.     11.     13.     16.
122          QI     19.     23.     26.     30.     34.     39.     44.     47.     51.     53.
123          QI     56.     59.     61.     63.     65.     66.     68.     69.     71.     72.
124          QI     73.     74.     76.     77.     78.     79.     80.     81.     82.     83.
125          QI     84.     84.     85.     86.     86.     87.     88.     88.     88.     89.
126          QI     90.     90.     91.     92.     93.     94.     95.     96.     96.     97.
127          QI     98.     98.     99.    100.    101.    101.    102.    102.    103.    104.
128          QI    105.    106.    107.    108.    109.    110.    111.    112.    114.    115.
129          QI    116.    117.    118.    118.    119.    120.    121.    123.    124.    125.
130          QI    126.    128.    129.    131.    132.    134.    136.    137.    140.    142.
131          QI    145.    147.    150.    152.    154.    157.    160.    163.    165.    168.
132          QI    171.    174.    177.    180.    183.    187.    190.    194.    198.    202.
133          QI    205.    210.    215.    220.    226.    231.    237.    242.    249.    258.
134          QI    266.    274.    283.    292.    305.    322.    337.    352.    366.    466.
135          QI    804.   1399.   1867.   2234.   2534.   2697.   2587.   2191.   1890.   1682.
136          QI   1539.   1433.   1349.   1275.   1227.   1199.   1173.   1148.   1116.   1081.
137          QI   1062.   1047.   1034.   1024.   1015.   1008.   1004.   1001.    998.    996.
138          QI    993.    989.    986.    983.    980.    978.    974.    971.    968.    965.
139          QI    961.    958.    954.    950.    947.    943.    939.    936.    932.    928.
140          QI    923.    919.    914.    908.    903.    897.    892.    886.    880.    875.
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 141        QI    869.    862.    853.    840.    825.    807.    789.    774.    759.    744.
 142        QI    727.    710.    693.    675.    658.    642.    628.    614.    601.    590.
 143        QI    579.    569.    560.    552.    544.    538.    531.    525.    520.    514.
 144        QI    510.    505.    500.    495.    490.    484.    479.    473.    468.    463.
 145        QI    457.    452.    446.    439.    430.    419.    407.    395.    382.    369.
 146        QI    357.    345.    333.    321.    310.    299.    288.    278.    269.    261.
 147        QI    254.    247.    241.    234.    226.    219.    213.    206.    200.    194.
 148        QI    188.    183.    177.    172.    167.    163.    159.    155.    151.    148.
 149        QI    145.    142.    140.    137.    134.    132.    129.    126.    124.    121.
 150        QI    117.    110.    104.     97.     91.     84.     77.     71.     64.     58.
 151        QI     52.     47.     42.     38.     34.     31.     28.     25.     22.     20.
 152        QI     18.     16.     14.     12.     11.      9.      8.      7.      6.      5.
 153        QI      5.      4.      3.      3.      3.      2.      2.      2.      1.      1.
 154        QI      1.      1.      1.      1.      1.      1.      0.      0.      0.      0.
 155        QI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
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1                                        HEC-1 INPUT                                          PAGE  4

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


 156        KK   P-2AO
 157        KM      Reservoir route at GEPD (Dam 4).
 158        KM      Rating Data (Existing + 7'x 6' RCB at same invert)
 159        KM      This operation corresponds to Ftn Hills FDS operation C5990
 160        RS       1    ELEV  1694.7
 161        SV    0.00    0.03    0.47    2.35    7.35   16.85   31.66   52.71   80.85   90.00
 162        SV   98.00   107.0   116.14  126.00  136.00  146.00  156.22  167.00
 163        SE  1694.7  1700.0  1702.0  1704.0  1706.0  1708.0  1710.0  1712.0  1714.0  1714.5
 164        SE  1715.0  1715.5  1716.0  1716.5  1717.0  1717.5  1718.0  1718.5
 165        SQ       0     180     360     540     720     900    1080    1260    1440    1500
 166        SE  1694.5  1697.7  1699.3  1700.8  1702.6  1704.7  1707.4  1710.6  1714.3  1715.7
 167        RL                   0.97
            *

 168        KK   P-2BI
 169        KM      Option P-2B:  Existing culverts plus 90" RCP at same invert
 170        KM      Inflow Hydrograph for GEPD (Dam 4)
 171        KM      Hydrograph equals that for C599I
 172        BA    7.13
 173        QI      0.      0.      2.      4.      6.      7.      9.     11.     13.     16.
 174        QI     19.     23.     26.     30.     34.     39.     44.     47.     51.     53.
 175        QI     56.     59.     61.     63.     65.     66.     68.     69.     71.     72.
 176        QI     73.     74.     76.     77.     78.     79.     80.     81.     82.     83.
 177        QI     84.     84.     85.     86.     86.     87.     88.     88.     88.     89.
 178        QI     90.     90.     91.     92.     93.     94.     95.     96.     96.     97.
 179        QI     98.     98.     99.    100.    101.    101.    102.    102.    103.    104.
 180        QI    105.    106.    107.    108.    109.    110.    111.    112.    114.    115.
 181        QI    116.    117.    118.    118.    119.    120.    121.    123.    124.    125.
 182        QI    126.    128.    129.    131.    132.    134.    136.    137.    140.    142.
 183        QI    145.    147.    150.    152.    154.    157.    160.    163.    165.    168.
 184        QI    171.    174.    177.    180.    183.    187.    190.    194.    198.    202.
 185        QI    205.    210.    215.    220.    226.    231.    237.    242.    249.    258.
 186        QI    266.    274.    283.    292.    305.    322.    337.    352.    366.    466.
 187        QI    804.   1399.   1867.   2234.   2534.   2697.   2587.   2191.   1890.   1682.
 188        QI   1539.   1433.   1349.   1275.   1227.   1199.   1173.   1148.   1116.   1081.
 189        QI   1062.   1047.   1034.   1024.   1015.   1008.   1004.   1001.    998.    996.
 190        QI    993.    989.    986.    983.    980.    978.    974.    971.    968.    965.
 191        QI    961.    958.    954.    950.    947.    943.    939.    936.    932.    928.
 192        QI    923.    919.    914.    908.    903.    897.    892.    886.    880.    875.
 193        QI    869.    862.    853.    840.    825.    807.    789.    774.    759.    744.
 194        QI    727.    710.    693.    675.    658.    642.    628.    614.    601.    590.
 195        QI    579.    569.    560.    552.    544.    538.    531.    525.    520.    514.
 196        QI    510.    505.    500.    495.    490.    484.    479.    473.    468.    463.
 197        QI    457.    452.    446.    439.    430.    419.    407.    395.    382.    369.
 198        QI    357.    345.    333.    321.    310.    299.    288.    278.    269.    261.
 199        QI    254.    247.    241.    234.    226.    219.    213.    206.    200.    194.
 200        QI    188.    183.    177.    172.    167.    163.    159.    155.    151.    148.
 201        QI    145.    142.    140.    137.    134.    132.    129.    126.    124.    121.
 202        QI    117.    110.    104.     97.     91.     84.     77.     71.     64.     58.
 203        QI     52.     47.     42.     38.     34.     31.     28.     25.     22.     20.
 204        QI     18.     16.     14.     12.     11.      9.      8.      7.      6.      5.
 205        QI      5.      4.      3.      3.      3.      2.      2.      2.      1.      1.
 206        QI      1.      1.      1.      1.      1.      1.      0.      0.      0.      0.
 207        QI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            *
1                                        HEC-1 INPUT                                          PAGE  5

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


 208        KK   P-2BO
 209        KM      Reservoir route at GEPD (Dam 4).
 210        KM      Rating Data (Existing + 90" RCP at same invert)
 211        KM      This operation corresponds to Ftn Hills FDS operation C5990
 212        RS       1    ELEV  1694.7
 213        SV    0.00    0.03    0.47    2.35    7.35   16.85   31.66   52.71   80.85   90.00
 214        SV   98.00   107.0   116.14  126.00  136.00  146.00  156.22  167.00
 215        SE  1694.7  1700.0  1702.0  1704.0  1706.0  1708.0  1710.0  1712.0  1714.0  1714.5
 216        SE  1715.0  1715.5  1716.0  1716.5  1717.0  1717.5  1718.0  1718.5
 217        SQ       0     180     360     540     720     900    1080    1260    1440    1500
 218        SE  1694.5  1698.2  1699.4  1700.9  1702.6  1704.6  1707.0  1709.9  1713.3  1714.6
 219        RL                   0.97
            *

 220        KK   P-3AI
 221        KM      Option P-3A:  New 10'x 8' RCB with existing culverts removed
 222        KM      Inflow Hydrograph for GEPD (Dam 4)
 223        KM      Hydrograph equals that for C599I
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224        BA    7.13
225        QI     0.     0.     2.     4.     6.     7.     9.    11.    13.    16.
226        QI    19.    23.    26.    30.    34.    39.    44.    47.    51.    53.
227        QI    56.    59.    61.    63.    65.    66.    68.    69.    71.    72.
228        QI    73.    74.    76.    77.    78.    79.    80.    81.    82.    83.
229        QI    84.    84.    85.    86.    86.    87.    88.    88.    88.    89.
230        QI    90.    90.    91.    92.    93.    94.    95.    96.    96.    97.
231        QI    98.    98.    99.   100.   101.   101.   102.   102.   103.   104.
232        QI   105.   106.   107.   108.   109.   110.   111.   112.   114.   115.
233        QI   116.   117.   118.   118.   119.   120.   121.   123.   124.   125.
234        QI   126.   128.   129.   131.   132.   134.   136.   137.   140.   142.
235        QI   145.   147.   150.   152.   154.   157.   160.   163.   165.   168.
236        QI   171.   174.   177.   180.   183.   187.   190.   194.   198.   202.
237        QI   205.   210.   215.   220.   226.   231.   237.   242.   249.   258.
238        QI   266.   274.   283.   292.   305.   322.   337.   352.   366.   466.
239        QI   804.  1399.  1867.  2234.  2534.  2697.  2587.  2191.  1890.  1682.
240        QI  1539.  1433.  1349.  1275.  1227.  1199.  1173.  1148.  1116.  1081.
241        QI  1062.  1047.  1034.  1024.  1015.  1008.  1004.  1001.   998.   996.
242        QI   993.   989.   986.   983.   980.   978.   974.   971.   968.   965.
243        QI   961.   958.   954.   950.   947.   943.   939.   936.   932.   928.
244        QI   923.   919.   914.   908.   903.   897.   892.   886.   880.   875.
245        QI   869.   862.   853.   840.   825.   807.   789.   774.   759.   744.
246        QI   727.   710.   693.   675.   658.   642.   628.   614.   601.   590.
247        QI   579.   569.   560.   552.   544.   538.   531.   525.   520.   514.
248        QI   510.   505.   500.   495.   490.   484.   479.   473.   468.   463.
249        QI   457.   452.   446.   439.   430.   419.   407.   395.   382.   369.
250        QI   357.   345.   333.   321.   310.   299.   288.   278.   269.   261.
251        QI   254.   247.   241.   234.   226.   219.   213.   206.   200.   194.
252        QI   188.   183.   177.   172.   167.   163.   159.   155.   151.   148.
253        QI   145.   142.   140.   137.   134.   132.   129.   126.   124.   121.
254        QI   117.   110.   104.    97.    91.    84.    77.    71.    64.    58.
255        QI    52.    47.    42.    38.    34.    31.    28.    25.    22.    20.
256        QI    18.    16.    14.    12.    11.     9.     8.     7.     6.     5.
257        QI     5.     4.     3.     3.     3.     2.     2.     2.     1.     1.
258        QI     1.     1.     1.     1.     1.     1.     0.     0.     0.     0.
259        QI     0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
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1 HEC-1 INPUT PAGE 6

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

260        KK   P-3AO
261        KM      Reservoir route at GEPD (Dam 4).
262        KM      Rating Data (New 10'x 8' RCB; existing culverts removed)
263        KM      This operation corresponds to Ftn Hills FDS operation C5990
264        RS       1    ELEV  1694.7
265        SV    0.00    0.03    0.47    2.35    7.35   16.85   31.66   52.71   80.85   90.00
266        SV   98.00   107.0  116.14  126.00  136.00  146.00  156.22  167.00
267        SE  1694.7  1700.0  1702.0  1704.0  1706.0  1708.0  1710.0  1712.0  1714.0  1714.5
268        SE  1715.0  1715.5  1716.0  1716.5  1717.0  1717.5  1718.0  1718.5
269        SQ       0     200     400     600     800    1000    1200    1400    1600    1800
270        SE  1694.5  1698.6  1700.7  1702.6  1704.7  1707.0  1709.8  1713.1  1716.9  1721.6
271        RL                   0.97
           *

272        KK   P-3BI
273        KM      Option P-3B: New 120" RCP with existing culverts removed
274        KM      Inflow Hydrograph for GEPD (Dam 4)
275        KM      Hydrograph equals that for C599I
276        BA    7.13
277        QI     0.     0.     2.     4.     6.     7.     9.    11.    13.    16.
278        QI    19.    23.    26.    30.    34.    39.    44.    47.    51.    53.
279        QI    56.    59.    61.    63.    65.    66.    68.    69.    71.    72.
280        QI    73.    74.    76.    77.    78.    79.    80.    81.    82.    83.
281        QI    84.    84.    85.    86.    86.    87.    88.    88.    88.    89.
282        QI    90.    90.    91.    92.    93.    94.    95.    96.    96.    97.
283        QI    98.    98.    99.   100.   101.   101.   102.   102.   103.   104.
284        QI   105.   106.   107.   108.   109.   110.   111.   112.   114.   115.
285        QI   116.   117.   118.   118.   119.   120.   121.   123.   124.   125.
286        QI   126.   128.   129.   131.   132.   134.   136.   137.   140.   142.
287        QI   145.   147.   150.   152.   154.   157.   160.   163.   165.   168.
288        QI   171.   174.   177.   180.   183.   187.   190.   194.   198.   202.
289        QI   205.   210.   215.   220.   226.   231.   237.   242.   249.   258.
290        QI   266.   274.   283.   292.   305.   322.   337.   352.   366.   466.
291        QI   804.  1399.  1867.  2234.  2534.  2697.  2587.  2191.  1890.  1682.
292        QI  1539.  1433.  1349.  1275.  1227.  1199.  1173.  1148.  1116.  1081.
293        QI  1062.  1047.  1034.  1024.  1015.  1008.  1004.  1001.   998.   996.
294        QI   993.   989.   986.   983.   980.   978.   974.   971.   968.   965.
295        QI   961.   958.   954.   950.   947.   943.   939.   936.   932.   928.
296        QI   923.   919.   914.   908.   903.   897.   892.   886.   880.   875.
297        QI   869.   862.   853.   840.   825.   807.   789.   774.   759.   744.
298        QI   727.   710.   693.   675.   658.   642.   628.   614.   601.   590.
299        QI   579.   569.   560.   552.   544.   538.   531.   525.   520.   514.
300        QI   510.   505.   500.   495.   490.   484.   479.   473.   468.   463.
301        QI   457.   452.   446.   439.   430.   419.   407.   395.   382.   369.
302        QI   357.   345.   333.   321.   310.   299.   288.   278.   269.   261.
303        QI   254.   247.   241.   234.   226.   219.   213.   206.   200.   194.
304        QI   188.   183.   177.   172.   167.   163.   159.   155.   151.   148.
305        QI   145.   142.   140.   137.   134.   132.   129.   126.   124.   121.
306        QI   117.   110.   104.    97.    91.    84.    77.    71.    64.    58.
307        QI    52.    47.    42.    38.    34.    31.    28.    25.    22.    20.
308        QI    18.    16.    14.    12.    11.     9.     8.     7.     6.     5.
309        QI     5.     4.     3.     3.     3.     2.     2.     2.     1.     1.
310        QI     1.     1.     1.     1.     1.     1.     0.     0.     0.     0.
311        QI     0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
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1 HEC-1 INPUT PAGE 7

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

 312          KK   P-3BO
 313          KM      Reservoir route at GEPD (Dam 4).
 314          KM      Rating Data (New 120" RCP; existing culverts removed)
 315          KM      This operation corresponds to Ftn Hills FDS operation C5990
 316          RS       1    ELEV  1694.7
 317          SV    0.00    0.03    0.47    2.35    7.35   16.85   31.66   52.71   80.85   90.00
 318          SV   98.00   107.0  116.14  126.00  136.00  146.00  156.22  167.00
 319          SE  1694.7  1700.0  1702.0  1704.0  1706.0  1708.0  1710.0  1712.0  1714.0  1714.5
 320          SE  1715.0  1715.5  1716.0  1716.5  1717.0  1717.5  1718.0  1718.5
 321          SQ       0     200     400     600     800    1000    1200    1400    1600    1800
 322          SE  1694.5  1700.0  1701.4  1703.4  1705.3  1707.6  1710.4  1713.7  1717.6  1722.0
 323          RL                    0.97
 324          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    12       P-1AI
                 V
                 V
    52       P-1AO
                 .
                 .
    64           .       P-1BI
                 .           V
                 .           V
   104           .       P-1BO
                 .           .
                 .           .
   116           .           .       P-2AI
                 .           .           V
                 .           .           V
   156           .           .       P-2AO
                 .           .           .
                 .           .           .
   168           .           .           .       P-2BI
                 .           .           .           V
                 .           .           .           V
   208           .           .           .       P-2BO
                 .           .           .           .
                 .           .           .           .
   220           .           .           .           .       P-3AI
                 .           .           .           .           V
                 .           .           .           .           V
   260           .           .           .           .       P-3AO
                 .           .           .           .           .
                 .           .           .           .           .
   272           .           .           .           .           .       P-3BI
                 .           .           .           .           .           V
                 .           .           .           .           .           V
   312           .           .           .           .           .       P-3BO

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*****************************************                                  ****************************************
 *                                       *                                  *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                  *    U.S. ARMY CORPS OF ENGINEERS      *
 *              MAY   1991               *                                  *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.0.1E             *                                  *          609 SECOND STREET           *
 *                                       *                                  *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE  10/23/96  TIME  09:14:01   *                                  *          (916) 551-1748              *
 *                                       *                                  *                                      *
 *****************************************                                  ****************************************

                                FOUNTAIN HILLS ADMP - Project No. 63
                                Future Condition Model                          File:  opt_p-24.IH1
                                100-Year, 24-Hour Storm                          Date:  10/23/96 wso

                                Alternative No. 5: Principal Spillway Option Analysis

                                Inflow hydrograph to GEPD is directly coded using QI records to allow
                                analysis of all three options in one model.

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

     IT          HYDROGRAPH TIME DATA
                        NMIN          5  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1    0  STARTING DATE
                       ITIME       0000  STARTING TIME
                          NQ        400  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      2    0  ENDING DATE
                      NDTIME       0915  ENDING TIME
                       ICENT         19  CENTURY MARK

                 COMPUTATION INTERVAL    0.08 HOURS
                      TOTAL TIME BASE   33.25 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

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	P-1AI	2697.	12.08	1116.	439.	318.	7.13		
+	ROUTED TO	P-1AO	1403.	12.58	1104.	439.	318.	7.13		
+									1712.90	12.58
+	HYDROGRAPH AT	P-1BI	2697.	12.08	1116.	439.	318.	7.13		
+	ROUTED TO	P-1BO	1360.	12.67	1093.	439.	318.	7.13		
+									1713.40	12.67
+	HYDROGRAPH AT	P-2AI	2697.	12.08	1116.	439.	318.	7.13		
+	ROUTED TO	P-2AO	1357.	12.67	1115.	439.	318.	7.13		
+									1712.60	12.67
+	HYDROGRAPH AT	P-2BI	2697.	12.08	1116.	439.	318.	7.13		
+	ROUTED TO	P-2BO	1394.	12.58	1115.	439.	318.	7.13		
+									1712.42	12.58
+	HYDROGRAPH AT	P-3AI	2697.	12.08	1116.	439.	318.	7.13		
+	ROUTED TO	P-3AO	1374.	12.67	1113.	439.	318.	7.13		
+									1712.68	12.67
+	HYDROGRAPH AT	P-3BI	2697.	12.08	1116.	439.	318.	7.13		
+	ROUTED TO	P-3BO	1350.	12.67	1110.	439.	318.	7.13		
+									1712.88	12.67

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

CURRENT DATE: 10-22-1996
CURRENT TIME: 14:50:52

FILE DATE: 10-22-1996
FILE NAME: DAM4-P1B

****
********** FHWA CULVERT ANALYSIS **********
********** HY-8, VERSION 6.0 **********
****

CULV NO.	SITE DATA: INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	1694.51	1693.24	105.54	1 RCP	5.00	5.00	.012	CONVENTIONAL
2	1696.56	1695.10	105.54	1 CMPA	4.75	3.17	.012	CONVENTIONAL
3	1701.84	1700.57	100.01	1 RCB	12.00	5.00	.012	CONVENTIONAL
4								
5								
6								

****

SUMMARY OF CULVERT FLOWS (cfs) FILE: DAM4-P1B DATE: 10-22-1996

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1694.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1699.84	205.0	138.8	66.2	0.0	0.0	0.0	0.0	0.00	8
1703.45	410.0	234.2	131.8	43.9	0.0	0.0	0.0	0.00	7
1705.20	615.0	268.0	153.7	192.2	0.0	0.0	0.0	0.00	3
1706.88	820.0	296.7	171.8	352.2	0.0	0.0	0.0	0.00	3
1708.65	1025.0	324.0	188.4	513.5	0.0	0.0	0.0	0.00	3
1710.74	1230.0	353.8	206.3	670.3	0.0	0.0	0.0	0.00	4
1713.29	1435.0	387.3	226.2	822.1	0.0	0.0	0.0	0.00	4
1714.19	1500.0	398.4	232.8	869.1	0.0	0.0	0.0	0.00	2
1719.97	1845.0	463.2	271.5	1110.4	0.0	0.0	0.0	0.00	7
1724.17	2050.0	502.9	296.5	1250.7	0.0	0.0	0.0	0.00	6
1728.00	2217.8	533.9	317.6	1366.3	0.0	0.0	0.0	OVERTOPPING	

****

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: DAM4-P1B DATE: 10-22-1996

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
1694.51	0.000	0.00	0.00	0.00
1699.84	0.001	205.00	-0.06	-0.03
1703.45	-0.001	410.00	0.11	0.03
1705.20	-0.009	615.00	1.05	0.17
1706.88	0.006	820.00	-0.73	-0.09
1708.65	0.008	1025.00	-0.88	-0.09
1710.74	0.003	1230.00	-0.28	-0.02
1713.29	0.007	1435.00	-0.53	-0.04
1714.19	0.003	1500.00	-0.25	-0.02
1719.97	0.003	1845.00	-0.13	-0.01
1724.17	0.002	2050.00	-0.09	-0.00

****

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

****

CURRENT DATE: 10-22-1996 FILE DATE: 10-22-1996
CURRENT TIME: 14:50:52 FILE NAME: DAM4-P1B

PERFORMANCE CURVE FOR CULVERT 1 - 1(5.00 (ft) BY 5.00 (ft)) RCP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	1694.51	0.00	-1.27	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
138.83	1699.85	5.34	4.33	1-S2n	2.34	3.37	2.60	1.19	13.48	3.96
234.22	1703.44	8.93	7.41	5-S2n	3.26	4.28	3.58	1.57	15.57	4.90
267.97	1705.19	10.68	8.78	5-S2n	3.60	4.54	3.93	1.87	16.22	5.53
296.71	1706.88	12.37	10.08	5-S2n	3.93	4.75	4.18	2.12	16.97	6.01
323.99	1708.64	14.13	11.43	5-S2n	4.39	4.95	4.85	2.33	16.75	6.40
353.76	1710.74	16.23	12.94	6-FFc	5.00	5.00	5.00	2.52	18.02	6.74
387.26	1713.29	18.78	14.77	6-FFc	5.00	5.00	5.00	2.69	19.72	7.03
398.40	1714.18	19.67	15.41	6-FFc	5.00	5.00	5.00	2.85	20.29	7.29
463.22	1719.96	25.45	19.52	6-FFc	5.00	5.00	5.00	3.01	23.59	7.54
502.87	1724.16	29.65	22.34	6-FFc	5.00	5.00	5.00	3.15	25.61	7.75

El. inlet face invert 1694.51 ft El. outlet invert 1693.24 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	1694.51 ft
OUTLET STATION	105.53 ft
OUTLET ELEVATION	1693.24 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.0120
CULVERT LENGTH ALONG SLOPE	105.54 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	5.00 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE WITH HEADWALL
INLET DEPRESSION	NONE

CURRENT DATE: 10-22-1996 FILE DATE: 10-22-1996
CURRENT TIME: 14:50:52 FILE NAME: DAM4-P1B

PERFORMANCE CURVE FOR CULVERT 2 - 1(4.75 (ft) BY 3.17 (ft)) CMPA

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	1696.56	0.00	-1.46	0-NF	0.00	0.00	0.00	-1.86	0.00	0.00
66.24	1699.84	3.28	2.10	1-S2n	1.25	1.95	1.35	-0.67	11.84	3.96
131.81	1703.44	6.88	5.49	5-S2n	2.03	2.77	2.21	-0.29	14.20	4.90
153.74	1705.19	8.63	7.02	5-S2n	2.33	2.97	2.49	0.01	14.94	5.53

171.83	1706.88	10.32	8.45	5-S2n	2.70	3.14	3.04	0.26	14.76	6.01
188.36	1708.64	12.08	9.83	6-FFc	3.17	3.17	3.17	0.47	15.91	6.40
206.26	1710.73	14.17	11.45	6-FFc	3.17	3.17	3.17	0.66	17.42	6.74
226.16	1713.28	16.72	13.42	6-FFc	3.17	3.17	3.17	0.83	19.10	7.03
232.78	1714.18	17.62	14.11	6-FFc	3.17	3.17	3.17	0.99	19.66	7.29
271.54	1719.97	23.41	18.59	6-FFc	3.17	3.17	3.17	1.15	22.93	7.54
296.51	1724.16	27.60	21.83	6-FFc	3.17	3.17	3.17	1.29	25.04	7.75

****

El. inlet face invert 1696.56 ft El. outlet invert 1695.10 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

****

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	1696.56 ft
OUTLET STATION	105.53 ft
OUTLET ELEVATION	1695.10 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.0138
CULVERT LENGTH ALONG SLOPE	105.54 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	PIPE ARCH
BARREL SPAN	4.75 ft
BARREL RISE	3.17 ft
BARREL MATERIAL	STEEL OR ALUMINUM
BARREL MANNING'S n	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	HEADWALL
INLET DEPRESSION	NONE

****

4

CURRENT DATE: 10-22-1996 FILE DATE: 10-22-1996
CURRENT TIME: 14:50:52 FILE NAME: DAM4-P1B

****

PERFORMANCE CURVE FOR CULVERT 3 - 1(12.00 (ft) BY 5.00 (ft)) RCB

****

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	1701.84	0.00	-1.27	0-NF	0.00	0.00	0.00	-7.33	0.00	0.00
0.00	1701.84	0.00	-1.27	0-NF	0.00	0.00	0.00	-6.14	0.00	3.96
43.86	1703.46	1.27	1.62	1-S2n	0.44	0.75	0.44	-5.76	8.35	4.90
192.24	1705.20	3.36	2.50	1-S2n	1.15	2.00	1.32	-5.46	12.12	5.53
352.18	1706.89	5.05	3.64	1-S2n	1.72	3.00	2.08	-5.21	14.13	6.01
513.53	1708.64	6.80	5.09	5-S2n	2.21	3.85	2.75	-5.00	15.54	6.40
670.26	1710.73	8.89	6.82	5-S2n	2.65	4.60	3.37	-4.81	16.56	6.74
822.10	1713.28	11.44	8.67	6-FFc	3.06	5.00	3.06	-4.64	22.40	7.03
869.07	1714.19	12.35	9.25	6-FFc	3.18	5.00	3.18	-4.47	22.80	7.29
1110.38	1719.96	18.12	12.75	6-FFc	3.78	5.00	3.78	-4.32	24.51	7.54
1250.72	1724.16	22.32	15.17	6-FFc	4.11	5.00	4.11	-4.18	25.35	7.75

****

El. inlet face invert 1701.84 ft El. outlet invert 1700.57 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

****

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	1701.84 ft
OUTLET STATION	100.00 ft

```
      OUTLET ELEVATION                          1700.57 ft
      NUMBER OF BARRELS                            1
      SLOPE (V/H)                                  0.0127
      CULVERT LENGTH ALONG SLOPE                 100.01 ft

***** CULVERT DATA SUMMARY ************************
      BARREL SHAPE          BOX
      BARREL SPAN            12.00 ft
      BARREL RISE             5.00 ft
      BARREL MATERIAL       CONCRETE
      BARREL MANNING'S n    0.012
      INLET TYPE            CONVENTIONAL
      INLET EDGE AND WALL   SQUARE EDGE   (90-45 DEG.)
      INLET DEPRESSION      NONE

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

                                                                            5

CURRENT DATE: 10-22-1996                                  FILE DATE: 10-22-1996
CURRENT TIME: 14:50:52                                    FILE NAME: DAM4-P1B

*******************************************************************************
**************************          TAILWATER          **************************
*******************************************************************************

***** USER DEFINED CHANNEL CROSS-SECTION                 FILE NAME: DAM4
      MAIN CHANNEL AND LT & RT OVER BANKS                 FILE DATE: 09-06-1995
      LEFT CHANNEL BOUNDARY            6
      RIGHT CHANNEL BOUNDARY          11
      MANNING n LEFT OVER BANK         0.055
      MANNING n MAIN CHANNEL           0.045
      MANNING n RIGHT OVER BANK         0.025
      SLOPE OF CHANNEL                 0.0240 ft/ft

      CROSS-SECTION    X          Y
        COORD. NO.    (ft)       (ft)
            1        1000.00    1701.84
            2        1004.00    1698.64
            3        1011.00    1696.24
            4        1022.00    1695.24
            5        1033.00    1695.64
            6        1038.00    1696.54
            7        1049.00    1694.04
            8        1070.00    1693.24
            9        1073.00    1693.94
           10        1100.00    1697.14
           11        1100.10    1697.54
           12        1127.00    1704.82

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

        FLOW      W.S.E.   FROUDE    DEPTH     VEL.    SHEAR
        (cfs)      (ft)    NUMBER     (ft)    (f/s)    (psf)
         0.00    1693.24    0.000     0.00     0.00     0.00
       205.00    1694.43    0.843     1.19     3.96     1.02
       410.00    1694.81    0.889     1.57     4.90     1.40
       615.00    1695.11    0.916     1.87     5.53     1.68
       820.00    1695.36    0.935     2.12     6.01     1.91
      1025.00    1695.57    0.950     2.33     6.40     2.10
      1230.00    1695.76    0.962     2.52     6.74     2.26
      1435.00    1695.93    0.972     2.69     7.03     2.41
      1500.00    1696.09    0.981     2.85     7.29     2.55
      1845.00    1696.25    0.989     3.01     7.54     2.68
      2050.00    1696.39    0.996     3.15     7.75     2.79
```

Note: Shear stress was calculated using R.

```
*******************************************************************************
*************************  ROADWAY OVERTOPPING DATA  *************************
*******************************************************************************

      ROADWAY SURFACE                              PAVED
      EMBANKMENT TOP WIDTH                          1.00 ft
      CREST LENGTH                                  1.00 ft
      OVERTOPPING CREST ELEVATION                1728.00 ft

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

CURRENT DATE: 10-22-1996 FILE DATE: 10-22-1996
CURRENT TIME: 15:57:21 FILE NAME: DAM4-P1P

****
********** FHWA CULVERT ANALYSIS **********
********** HY-8, VERSION 6.0 **********
****

CULV NO.	SITE DATA: INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	1694.51	1693.24	105.54	1 RCP	5.00	5.00	.012	CONVENTIONAL
2	1696.56	1695.10	105.54	1 CMPA	4.75	3.17	.012	CONVENTIONAL
3	1701.84	1700.57	100.01	1 RCP	9.00	9.00	.012	CONVENTIONAL
4								
5								
6								

****

SUMMARY OF CULVERT FLOWS (cfs) FILE: DAM4-P1P DATE: 10-22-1996

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1694.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1699.84	205.0	138.8	66.2	0.0	0.0	0.0	0.0	0.00	8
1704.78	410.0	260.3	148.8	0.7	0.0	0.0	0.0	0.00	6
1706.68	615.0	293.3	169.8	152.1	0.0	0.0	0.0	0.00	4
1708.17	820.0	316.8	184.0	318.6	0.0	0.0	0.0	0.00	3
1710.03	1025.0	343.9	200.4	480.8	0.0	0.0	0.0	0.00	3
1711.95	1230.0	370.0	216.0	644.3	0.0	0.0	0.0	0.00	3
1714.17	1435.0	398.2	232.6	804.8	0.0	0.0	0.0	0.00	4
1714.96	1500.0	407.8	238.3	854.5	0.0	0.0	0.0	0.00	2
1719.88	1845.0	462.3	270.9	1111.9	0.0	0.0	0.0	0.00	6
1723.40	2050.0	496.1	292.1	1262.0	0.0	0.0	0.0	0.00	5
1728.00	2285.4	533.9	317.6	1433.9	0.0	0.0	0.0	OVERTOPPING	

****

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: DAM4-P1P DATE: 10-22-1996

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
1694.51	0.000	0.00	0.00	0.00
1699.84	0.001	205.00	-0.06	-0.03
1704.78	-0.007	410.00	0.26	0.06
1706.68	0.001	615.00	-0.22	-0.04
1708.17	-0.005	820.00	0.55	0.07
1710.03	0.001	1025.00	-0.07	-0.01
1711.95	0.003	1230.00	-0.30	-0.02
1714.17	0.007	1435.00	-0.63	-0.04
1714.96	0.008	1500.00	-0.66	-0.04
1719.88	0.001	1845.00	-0.10	-0.01
1723.40	0.004	2050.00	-0.20	-0.01

****

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

****

CURRENT DATE: 10-22-1996 FILE DATE: 10-22-1996
CURRENT TIME: 15:57:21 FILE NAME: DAM4-P1P

****

PERFORMANCE CURVE FOR CULVERT 1 - 1(5.00 (ft) BY 5.00 (ft)) RCP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	1694.51	0.00	-1.27	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
138.83	1699.85	5.34	4.33	1-S2n	2.34	3.37	2.60	1.19	13.48	3.96
260.26	1704.77	10.26	8.45	5-S2n	3.51	4.48	3.85	1.57	16.08	4.90
293.32	1706.67	12.16	9.92	5-S2n	3.89	4.73	4.16	1.87	16.87	5.53
316.84	1708.17	13.66	11.07	5-S2n	4.26	4.90	4.80	2.12	16.48	6.01
343.93	1710.03	15.52	12.44	6-FFc	5.00	5.00	5.00	2.33	17.52	6.40
370.04	1711.95	17.44	13.81	6-FFc	5.00	5.00	5.00	2.52	18.85	6.74
398.16	1714.16	19.65	15.40	6-FFc	5.00	5.00	5.00	2.69	20.28	7.03
407.80	1714.96	20.45	15.97	6-FFc	5.00	5.00	5.00	2.85	20.77	7.29
462.25	1719.87	25.36	19.46	6-FFc	5.00	5.00	5.00	3.01	23.54	7.54
496.10	1723.40	28.89	21.84	6-FFc	5.00	5.00	5.00	3.15	25.27	7.75

El. inlet face invert 1694.51 ft El. outlet invert 1693.24 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	1694.51 ft
OUTLET STATION	105.53 ft
OUTLET ELEVATION	1693.24 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.0120
CULVERT LENGTH ALONG SLOPE	105.54 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	5.00 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE WITH HEADWALL
INLET DEPRESSION	NONE

3

CURRENT DATE: 10-22-1996 FILE DATE: 10-22-1996
CURRENT TIME: 15:57:21 FILE NAME: DAM4-P1P

PERFORMANCE CURVE FOR CULVERT 2 - 1(4.75 (ft) BY 3.17 (ft)) CMPA

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	1696.56	0.00	-1.46	0-NF	0.00	0.00	0.00	-1.86	0.00	0.00
66.24	1699.84	3.28	2.10	1-S2n	1.25	1.95	1.35	-0.67	11.84	3.96
148.75	1704.77	8.21	6.65	5-S2n	2.25	2.93	2.43	-0.29	14.79	4.90
169.76	1706.67	10.11	8.28	5-S2n	2.64	3.12	3.02	0.01	14.63	5.53
184.01	1708.16	11.60	9.46	6-FFc	3.17	3.17	3.17	0.26	15.54	6.01
200.39	1710.03	13.47	10.90	6-FFc	3.17	3.17	3.17	0.47	16.92	6.40
215.96	1711.95	15.39	12.38	6-FFc	3.17	3.17	3.17	0.66	18.24	6.74
232.64	1714.16	17.60	14.10	6-FFc	3.17	3.17	3.17	0.83	19.65	7.03
238.32	1714.95	18.39	14.71	6-FFc	3.17	3.17	3.17	0.99	20.13	7.29
270.94	1719.87	23.31	18.51	6-FFc	3.17	3.17	3.17	1.15	22.88	7.54

```
  292.12  1723.40  26.84  21.24 6-FFc   3.17   3.17   3.17   1.29  24.67   7.75
*******************************************************************************
        El. inlet face invert    1696.56 ft   El. outlet invert  1695.10 ft
        El. inlet throat invert     0.00 ft   El. inlet crest       0.00 ft
*******************************************************************************

***** SITE DATA ***** CULVERT INVERT **************
      INLET STATION                              0.00 ft
      INLET ELEVATION                         1696.56 ft
      OUTLET STATION                           105.53 ft
      OUTLET ELEVATION                        1695.10 ft
      NUMBER OF BARRELS                          1
      SLOPE (V/H)                                0.0138
      CULVERT LENGTH ALONG SLOPE               105.54 ft

***** CULVERT DATA SUMMARY ************************
      BARREL SHAPE          PIPE ARCH
      BARREL SPAN             4.75 ft
      BARREL RISE             3.17 ft
      BARREL MATERIAL       STEEL OR ALUMINUM
      BARREL MANNING'S n    0.012
      INLET TYPE            CONVENTIONAL
      INLET EDGE AND WALL   HEADWALL
      INLET DEPRESSION      NONE

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

                                                                            4

CURRENT DATE: 10-22-1996                                FILE DATE: 10-22-1996
CURRENT TIME: 15:57:21                                  FILE NAME: DAM4-P1P
*******************************************************************************
      PERFORMANCE CURVE FOR CULVERT 3 - 1(  9.00 (ft) BY   9.00 (ft)) RCP
*******************************************************************************
   DIS-     HEAD-  INLET  OUTLET
  CHARGE   WATER CONTROL CONTROL FLOW NORMAL  CRIT. OUTLET   TW   OUTLET   TW
   FLOW    ELEV.  DEPTH   DEPTH  TYPE DEPTH   DEPTH DEPTH  DEPTH  VEL.   VEL.
  (cfs)    (ft)   (ft)    (ft)   <F4> (ft)    (ft)  (ft)   (ft)  (fps)  (fps)
*******************************************************************************
    0.00  1701.84   0.00  -1.27 0-NF    0.00   0.00   0.00  -7.33   0.00   0.00
    0.00  1701.84   0.00  -1.27 0-NF    0.00   0.00   0.00  -6.14   0.00   3.96
    0.73  1705.09   0.75   3.25 1-S2n   0.02   0.04   0.02  -5.76   4.87   4.90
  152.14  1706.69   3.96   4.85 1-S2n   1.90   2.94   2.16  -5.46  12.86   5.53
  318.60  1708.17   6.33   6.04 1-S2n   2.78   4.34   3.31  -5.21  14.96   6.01
  480.75  1710.03   8.19   7.39 1-S2n   3.46   5.40   4.20  -5.00  16.51   6.40
  644.30  1711.95  10.11   8.98 1-S2n   4.07   6.28   5.02  -4.81  17.68   6.74
  804.82  1714.17  12.33  10.81 5-S2n   4.64   6.99   5.69  -4.64  19.01   7.03
  854.54  1714.95  13.11  11.43 5-S2n   4.81   7.21   5.91  -4.47  19.33   7.29
 1111.90  1719.87  18.03  15.02 5-S2n   5.71   8.00   6.90  -4.32  21.28   7.54
 1261.98  1723.40  21.56  17.49 5-S2n   6.24   8.47   7.34  -4.18  22.77   7.75
*******************************************************************************
        El. inlet face invert    1701.84 ft   El. outlet invert  1700.57 ft
        El. inlet throat invert     0.00 ft   El. inlet crest       0.00 ft
*******************************************************************************

***** SITE DATA ***** CULVERT INVERT **************
      INLET STATION                              0.00 ft
      INLET ELEVATION                         1701.84 ft
      OUTLET STATION                           100.00 ft
      OUTLET ELEVATION                        1700.57 ft
      NUMBER OF BARRELS                          1
      SLOPE (V/H)                                0.0127
      CULVERT LENGTH ALONG SLOPE               100.01 ft

***** CULVERT DATA SUMMARY ************************
```

```
BARREL SHAPE          CIRCULAR
BARREL DIAMETER         9.00 ft
BARREL MATERIAL       CONCRETE
BARREL MANNING'S n    0.012
INLET TYPE            CONVENTIONAL
INLET EDGE AND WALL   SQUARE EDGE WITH HEADWALL
INLET DEPRESSION      NONE
```

****

5

CURRENT DATE: 10-22-1996 FILE DATE: 10-22-1996
CURRENT TIME: 15:57:21 FILE NAME: DAM4-P1P

****
********** TAILWATER **********
****

```
***** USER DEFINED CHANNEL CROSS-SECTION          FILE NAME: DAM4
      MAIN CHANNEL AND LT & RT OVER BANKS         FILE DATE: 09-06-1995
      LEFT CHANNEL BOUNDARY          6
      RIGHT CHANNEL BOUNDARY        11
      MANNING n LEFT OVER BANK       0.055
      MANNING n MAIN CHANNEL         0.045
      MANNING n RIGHT OVER BANK       0.025
      SLOPE OF CHANNEL               0.0240 ft/ft
```

CROSS-SECTION COORD. NO.	X (ft)	Y (ft)
1	1000.00	1701.84
2	1004.00	1698.64
3	1011.00	1696.24
4	1022.00	1695.24
5	1033.00	1695.64
6	1038.00	1696.54
7	1049.00	1694.04
8	1070.00	1693.24
9	1073.00	1693.94
10	1100.00	1697.14
11	1100.10	1697.54
12	1127.00	1704.82

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	1693.24	0.000	0.00	0.00	0.00
205.00	1694.43	0.843	1.19	3.96	1.02
410.00	1694.81	0.889	1.57	4.90	1.40
615.00	1695.11	0.916	1.87	5.53	1.68
820.00	1695.36	0.935	2.12	6.01	1.91
1025.00	1695.57	0.950	2.33	6.40	2.10
1230.00	1695.76	0.962	2.52	6.74	2.26
1435.00	1695.93	0.972	2.69	7.03	2.41
1500.00	1696.09	0.981	2.85	7.29	2.55
1845.00	1696.25	0.989	3.01	7.54	2.68
2050.00	1696.39	0.996	3.15	7.75	2.79

Note: Shear stress was calculated using R.

****
********** ROADWAY OVERTOPPING DATA **********
****

ROADWAY SURFACE PAVED

```
EMBANKMENT TOP WIDTH                          1.00 ft
CREST LENGTH                                  1.00 ft
OVERTOPPING CREST ELEVATION                1728.00 ft

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

CURRENT DATE: 10-22-1996 FILE DATE: 10-22-1996
CURRENT TIME: 17:01:34 FILE NAME: DAM4-P2B

****
********** FHWA CULVERT ANALYSIS **********
********** HY-8, VERSION 6.0 **********
****

CULV NO.	SITE DATA: INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	1694.51	1693.24	105.54	1 RCP	5.00	5.00	.012	CONVENTIONAL
2	1696.56	1695.10	105.54	1 CMPA	4.75	3.17	.012	CONVENTIONAL
3	1694.51	1693.24	105.55	1 RCB	7.00	6.00	.012	CONVENTIONAL
4								
5								
6								

****
SUMMARY OF CULVERT FLOWS (cfs) FILE: DAM4-P2B DATE: 10-22-1996

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1694.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1697.72	180.0	63.1	13.0	103.7	0.0	0.0	0.0	0.00	6
1699.28	360.0	118.8	51.1	190.0	0.0	0.0	0.0	0.00	3
1700.78	540.0	168.8	88.0	283.2	0.0	0.0	0.0	0.00	4
1702.55	720.0	214.6	119.1	386.7	0.0	0.0	0.0	0.00	3
1704.71	900.0	259.2	148.0	493.3	0.0	0.0	0.0	0.00	4
1707.37	1080.0	304.4	176.5	599.5	0.0	0.0	0.0	0.00	4
1710.55	1260.0	351.1	204.7	704.5	0.0	0.0	0.0	0.00	5
1714.32	1440.0	400.0	233.8	806.3	0.0	0.0	0.0	0.00	5
1715.74	1500.0	416.9	243.8	839.3	0.0	0.0	0.0	0.00	3
1723.74	1800.0	499.1	294.0	1006.8	0.0	0.0	0.0	0.00	9
1728.00	1937.2	533.9	317.6	1085.7	0.0	0.0	0.0	OVERTOPPING	

****
SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: DAM4-P2B DATE: 10-22-1996

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
1694.51	0.000	0.00	0.00	0.00
1697.72	-0.001	180.00	0.16	0.09
1699.28	-0.001	360.00	0.11	0.03
1700.78	0.000	540.00	-0.05	-0.01
1702.55	0.005	720.00	-0.46	-0.06
1704.71	0.006	900.00	-0.43	-0.05
1707.37	0.006	1080.00	-0.40	-0.04
1710.55	0.005	1260.00	-0.25	-0.02
1714.32	0.003	1440.00	-0.11	-0.01
1715.74	0.000	1500.00	0.00	0.00
1723.74	0.000	1800.00	0.00	0.00

****
<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000
****

CURRENT DATE: 10-22-1996 FILE DATE: 10-22-1996
CURRENT TIME: 17:01:34 FILE NAME: DAM4-P2B

PERFORMANCE CURVE FOR CULVERT 1 - 1(5.00 (ft) BY 5.00 (ft)) RCP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	1694.51	0.00	-1.27	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
63.13	1697.72	3.21	2.64	1-S2n	1.53	2.22	1.63	1.19	11.28	3.96
118.79	1699.29	4.78	3.82	1-S2n	2.14	3.11	2.37	1.57	12.98	4.90
168.81	1700.78	6.27	5.18	5-S2n	2.63	3.71	2.91	1.87	14.24	5.53
214.62	1702.54	8.03	6.69	5-S2n	3.06	4.14	3.40	2.12	15.12	6.01
259.16	1704.71	10.20	8.41	5-S2n	3.50	4.47	3.84	2.33	16.05	6.40
304.38	1707.36	12.85	10.45	5-S2n	4.03	4.81	4.26	2.52	17.14	6.74
351.13	1710.54	16.03	12.80	6-FFc	5.00	5.00	5.00	2.69	17.88	7.03
400.05	1714.32	19.81	15.51	6-FFc	5.00	5.00	5.00	2.85	20.37	7.29
416.93	1715.73	21.22	16.52	6-FFc	5.00	5.00	5.00	3.01	21.23	7.54
499.12	1723.74	29.23	22.06	6-FFc	5.00	5.00	5.00	3.15	25.42	7.75

El. inlet face invert 1694.51 ft El. outlet invert 1693.24 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	1694.51 ft
OUTLET STATION	105.53 ft
OUTLET ELEVATION	1693.24 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.0120
CULVERT LENGTH ALONG SLOPE	105.54 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	5.00 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE WITH HEADWALL
INLET DEPRESSION	NONE

CURRENT DATE: 10-22-1996 FILE DATE: 10-22-1996
CURRENT TIME: 17:01:34 FILE NAME: DAM4-P2B

****

PERFORMANCE CURVE FOR CULVERT 2 - 1(4.75 (ft) BY 3.17 (ft)) CMPA

****

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	1696.56	0.00	-1.46	0-NF	0.00	0.00	0.00	-1.86	0.00	0.00
12.98	1697.72	1.16	0.54	1-S2n	0.49	0.77	0.52	-0.67	7.45	3.96
51.08	1699.27	2.71	1.56	1-S2n	1.07	1.68	1.14	-0.29	11.11	4.90
88.04	1700.78	4.22	3.04	1-S2n	1.50	2.29	1.65	0.01	12.68	5.53
119.10	1702.55	5.99	4.70	5-S2n	1.86	2.65	2.05	0.26	13.77	6.01
148.00	1704.71	8.15	6.60	5-S2n	2.24	2.92	2.42	0.47	14.75	6.40
176.50	1707.36	10.80	8.84	6-FFc	2.84	3.17	3.17	0.66	14.91	6.74
204.67	1710.54	13.98	11.30	6-FFc	3.17	3.17	3.17	0.83	17.29	7.03
233.80	1714.32	17.76	14.22	6-FFc	3.17	3.17	3.17	0.99	19.75	7.29
243.80	1715.74	19.18	15.31	6-FFc	3.17	3.17	3.17	1.15	20.59	7.54
294.05	1723.73	27.17	21.50	6-FFc	3.17	3.17	3.17	1.29	24.83	7.75

****

El. inlet face invert 1696.56 ft El. outlet invert 1695.10 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

****

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	1696.56 ft
OUTLET STATION	105.53 ft
OUTLET ELEVATION	1695.10 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.0138
CULVERT LENGTH ALONG SLOPE	105.54 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	PIPE ARCH
BARREL SPAN	4.75 ft
BARREL RISE	3.17 ft
BARREL MATERIAL	STEEL OR ALUMINUM
BARREL MANNING'S n	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	HEADWALL
INLET DEPRESSION	NONE

****

CURRENT DATE: 10-22-1996 FILE DATE: 10-22-1996
CURRENT TIME: 17:01:34 FILE NAME: DAM4-P2B

PERFORMANCE CURVE FOR CULVERT 3 - 1(7.00 (ft) BY 6.00 (ft)) RCB

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	1694.51	0.00	-1.27	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
103.73	1697.72	3.21	2.84	1-S2n	1.18	1.90	1.28	1.19	11.57	3.96
190.02	1699.28	4.77	3.70	1-S2n	1.78	2.85	2.03	1.57	13.40	4.90
283.20	1700.78	6.27	4.81	1-S2n	2.36	3.71	2.74	1.87	14.75	5.53
386.74	1702.54	8.03	6.30	5-S2n	2.96	4.57	3.47	2.12	15.92	6.01
493.27	1704.71	10.20	8.13	5-S2n	3.55	5.37	4.17	2.33	16.88	6.40
599.52	1707.36	12.85	10.21	6-FFc	4.12	6.00	4.12	2.52	20.80	6.74
704.45	1710.55	16.04	12.30	6-FFc	4.66	6.00	4.66	2.69	21.58	7.03
806.27	1714.32	19.81	14.64	6-FFc	5.18	6.00	5.18	2.85	22.22	7.29
839.28	1715.73	21.22	15.47	6-FFc	5.35	6.00	5.35	3.01	22.41	7.54
1006.83	1723.73	29.22	20.19	6-FFc	6.00	6.00	5.35	3.15	26.88	7.75

El. inlet face invert 1694.51 ft El. outlet invert 1693.24 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	1694.51 ft
OUTLET STATION	105.54 ft
OUTLET ELEVATION	1693.24 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.0120
CULVERT LENGTH ALONG SLOPE	105.55 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	BOX
BARREL SPAN	7.00 ft
BARREL RISE	6.00 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE (90-45 DEG.)
INLET DEPRESSION	NONE

CURRENT DATE: 10-22-1996 FILE DATE: 10-22-1996
CURRENT TIME: 17:01:34 FILE NAME: DAM4-P2B

****
********** TAILWATER **********
****

***** USER DEFINED CHANNEL CROSS-SECTION FILE NAME: DAM4
MAIN CHANNEL AND LT & RT OVER BANKS FILE DATE: 09-06-1995
LEFT CHANNEL BOUNDARY 6
RIGHT CHANNEL BOUNDARY 11
MANNING n LEFT OVER BANK 0.055
MANNING n MAIN CHANNEL 0.045
MANNING n RIGHT OVER BANK 0.025
SLOPE OF CHANNEL 0.0240 ft/ft

CROSS-SECTION COORD. NO.	X (ft)	Y (ft)
1	1000.00	1701.84
2	1004.00	1698.64
3	1011.00	1696.24
4	1022.00	1695.24
5	1033.00	1695.64
6	1038.00	1696.54
7	1049.00	1694.04
8	1070.00	1693.24
9	1073.00	1693.94
10	1100.00	1697.14
11	1100.10	1697.54
12	1127.00	1704.82

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	1693.24	0.000	0.00	0.00	0.00
180.00	1694.43	0.843	1.19	3.96	1.02
360.00	1694.81	0.889	1.57	4.90	1.40
540.00	1695.11	0.916	1.87	5.53	1.68
720.00	1695.36	0.935	2.12	6.01	1.91
900.00	1695.57	0.950	2.33	6.40	2.10
1080.00	1695.76	0.962	2.52	6.74	2.26
1260.00	1695.93	0.972	2.69	7.03	2.41
1440.00	1696.09	0.981	2.85	7.29	2.55
1500.00	1696.25	0.989	3.01	7.54	2.68
1800.00	1696.39	0.996	3.15	7.75	2.79

Note: Shear stress was calculated using R.

****
********** ROADWAY OVERTOPPING DATA **********
****

ROADWAY SURFACE PAVED
EMBANKMENT TOP WIDTH 1.00 ft
CREST LENGTH 1.00 ft
OVERTOPPING CREST ELEVATION 1728.00 ft

****

CURRENT DATE: 10-22-1996
CURRENT TIME: 15:45:18

FILE DATE: 10-22-1996
FILE NAME: DAM4-P2P

****
********** FHWA CULVERT ANALYSIS **********
********** HY-8, VERSION 6.0 **********
****

CULV NO.	SITE DATA: INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	1694.51	1693.24	105.54	1 RCP	5.00	5.00	.012	CONVENTIONAL
2	1696.56	1695.10	105.54	1 CMPA	4.75	3.17	.012	CONVENTIONAL
3	1694.51	1693.24	105.55	1 RCP	7.50	7.50	.012	CONVENTIONAL
4								
5								
6								

****

SUMMARY OF CULVERT FLOWS (cfs) FILE: DAM4-P2P DATE: 10-22-1996

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1694.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1698.17	180.0	78.2	22.7	78.4	0.0	0.0	0.0	0.00	6
1699.43	360.0	124.3	55.3	180.2	0.0	0.0	0.0	0.00	3
1700.93	540.0	173.1	91.0	276.8	0.0	0.0	0.0	0.00	3
1702.58	720.0	215.3	119.5	386.0	0.0	0.0	0.0	0.00	3
1704.55	900.0	256.1	146.0	498.0	0.0	0.0	0.0	0.00	3
1706.99	1080.0	298.4	172.9	609.3	0.0	0.0	0.0	0.00	4
1709.93	1260.0	342.4	199.5	718.0	0.0	0.0	0.0	0.00	4
1713.34	1440.0	387.9	226.6	825.7	0.0	0.0	0.0	0.00	5
1714.58	1500.0	403.1	235.6	861.3	0.0	0.0	0.0	0.00	3
1721.53	1800.0	478.7	281.1	1040.3	0.0	0.0	0.0	0.00	8
1728.00	2035.2	533.9	317.6	1183.8	0.0	0.0	0.0	OVERTOPPING	

****

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: DAM4-P2P DATE: 10-22-1996

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
1694.51	0.000	0.00	0.00	0.00
1698.17	-0.004	180.00	0.73	0.41
1699.43	-0.001	360.00	0.15	0.04
1700.93	0.008	540.00	-0.90	-0.17
1702.58	0.008	720.00	-0.80	-0.11
1704.55	0.001	900.00	-0.11	-0.01
1706.99	0.008	1080.00	-0.57	-0.05
1709.93	-0.003	1260.00	0.16	0.01
1713.34	0.004	1440.00	-0.20	-0.01
1714.58	0.003	1500.00	-0.13	-0.01
1721.53	0.001	1800.00	-0.02	-0.00

****

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

****

CURRENT DATE: 10-22-1996
CURRENT TIME: 15:45:18

FILE DATE: 10-22-1996
FILE NAME: DAM4-P2P

****

PERFORMANCE CURVE FOR CULVERT 1 - 1(5.00 (ft) BY 5.00 (ft)) RCP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	1694.51	0.00	-1.27	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
78.22	1698.17	3.66	2.93	1-S2n	1.70	2.50	1.85	1.19	11.79	3.96
124.34	1699.44	4.93	3.96	1-S2n	2.20	3.18	2.43	1.57	13.14	4.90
173.06	1700.93	6.42	5.31	5-S2n	2.67	3.76	2.96	1.87	14.33	5.53
215.25	1702.57	8.06	6.71	5-S2n	3.07	4.14	3.40	2.12	15.14	6.01
256.10	1704.54	10.03	8.28	5-S2n	3.47	4.45	3.81	2.33	16.00	6.40
298.39	1706.98	12.47	10.16	5-S2n	3.95	4.76	4.20	2.52	16.99	6.74
342.40	1709.92	15.41	12.36	6-FFc	5.00	5.00	5.00	2.69	17.44	7.03
387.92	1713.34	18.83	14.81	6-FFc	5.00	5.00	5.00	2.85	19.76	7.29
403.15	1714.57	20.06	15.69	6-FFc	5.00	5.00	5.00	3.01	20.53	7.54
478.70	1721.53	27.02	20.59	6-FFc	5.00	5.00	5.00	3.15	24.38	7.75

El. inlet face invert 1694.51 ft El. outlet invert 1693.24 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	1694.51 ft
OUTLET STATION	105.53 ft
OUTLET ELEVATION	1693.24 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.0120
CULVERT LENGTH ALONG SLOPE	105.54 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	5.00 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE WITH HEADWALL
INLET DEPRESSION	NONE

3

CURRENT DATE: 10-22-1996 FILE DATE: 10-22-1996
CURRENT TIME: 15:45:18 FILE NAME: DAM4-P2P

PERFORMANCE CURVE FOR CULVERT 2 - 1(4.75 (ft) BY 3.17 (ft)) CMPA

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	1696.56	0.00	-1.46	0-NF	0.00	0.00	0.00	-1.86	0.00	0.00
22.69	1698.18	1.62	0.77	1-S2n	0.68	1.05	0.70	-0.67	8.86	3.96
55.32	1699.43	2.87	1.70	1-S2n	1.12	1.76	1.20	-0.29	11.35	4.90
91.04	1700.92	4.36	3.19	5-S2n	1.54	2.33	1.69	0.01	12.79	5.53
119.52	1702.58	6.02	4.72	5-S2n	1.87	2.66	2.06	0.26	13.79	6.01
146.01	1704.55	7.99	6.45	5-S2n	2.21	2.90	2.40	0.47	14.65	6.40
172.90	1706.99	10.43	8.54	5-S2n	2.73	3.15	3.05	0.66	14.84	6.74
199.49	1709.92	13.36	10.82	6-FFc	3.17	3.17	3.17	0.83	16.85	7.03
226.60	1713.34	16.78	13.46	6-FFc	3.17	3.17	3.17	0.99	19.14	7.29
235.63	1714.58	18.02	14.42	6-FFc	3.17	3.17	3.17	1.15	19.90	7.54

```
  281.07  1721.52  24.96  19.79 6-FFc   3.17   3.17   3.17   1.29  23.74   7.75
*******************************************************************************
        El. inlet face invert    1696.56 ft   El. outlet invert  1695.10 ft
        El. inlet throat invert     0.00 ft   El. inlet crest       0.00 ft
*******************************************************************************

***** SITE DATA ***** CULVERT INVERT **************
      INLET STATION                              0.00 ft
      INLET ELEVATION                         1696.56 ft
      OUTLET STATION                           105.53 ft
      OUTLET ELEVATION                        1695.10 ft
      NUMBER OF BARRELS                          1
      SLOPE (V/H)                                0.0138
      CULVERT LENGTH ALONG SLOPE               105.54 ft

***** CULVERT DATA SUMMARY ************************
      BARREL SHAPE          PIPE ARCH
      BARREL SPAN             4.75 ft
      BARREL RISE             3.17 ft
      BARREL MATERIAL       STEEL OR ALUMINUM
      BARREL MANNING'S n    0.012
      INLET TYPE            CONVENTIONAL
      INLET EDGE AND WALL   HEADWALL
      INLET DEPRESSION      NONE

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

                                                                            4

CURRENT DATE: 10-22-1996                                FILE DATE: 10-22-1996
CURRENT TIME: 15:45:18                                  FILE NAME: DAM4-P2P
*******************************************************************************
      PERFORMANCE CURVE FOR CULVERT 3 - 1(  7.50 (ft) BY   7.50 (ft)) RCP
*******************************************************************************
   DIS-     HEAD-  INLET  OUTLET
  CHARGE   WATER CONTROL CONTROL FLOW NORMAL  CRIT. OUTLET   TW   OUTLET   TW
   FLOW    ELEV.  DEPTH   DEPTH  TYPE DEPTH   DEPTH  DEPTH  DEPTH  VEL.   VEL.
  (cfs)    (ft)   (ft)    (ft)   <F4>  (ft)    (ft)   (ft)   (ft)  (fps)  (fps)
*******************************************************************************
    0.00  1694.51   0.00  -1.27 0-NF    0.00   0.00   0.00   0.00   0.00   0.00
   78.36  1698.18   2.88   3.67 1-S2n   1.48   2.21   1.60   1.19  11.31   3.96
  180.19  1699.43   4.92   4.62 1-S2n   2.26   3.40   2.56   1.57  13.49   4.90
  276.81  1700.93   6.42   5.64 1-S2n   2.82   4.27   3.30   1.87  14.80   5.53
  386.04  1702.57   8.06   7.02 1-S2n   3.39   5.07   4.01   2.12  16.05   6.01
  498.00  1704.54  10.03   8.69 5-S2n   3.95   5.75   4.65   2.33  17.30   6.40
  609.28  1706.99  12.48  10.61 5-S2n   4.48   6.28   5.25   2.52  18.44   6.74
  717.96  1709.92  15.41  12.77 5-S2n   5.02   6.72   5.81   2.69  19.58   7.03
  825.68  1713.34  18.83  15.23 5-S2n   5.61   7.16   6.26   2.85  21.03   7.29
  861.35  1714.58  20.07  16.11 5-S2n   5.82   7.30   6.40   3.01  21.51   7.54
 1040.26  1721.53  27.02  20.79 6-FFc   7.50   7.50   7.50   3.15  23.55   7.75
*******************************************************************************
        El. inlet face invert    1694.51 ft   El. outlet invert  1693.24 ft
        El. inlet throat invert     0.00 ft   El. inlet crest       0.00 ft
*******************************************************************************

***** SITE DATA ***** CULVERT INVERT **************
      INLET STATION                              0.00 ft
      INLET ELEVATION                         1694.51 ft
      OUTLET STATION                           105.54 ft
      OUTLET ELEVATION                        1693.24 ft
      NUMBER OF BARRELS                          1
      SLOPE (V/H)                                0.0120
      CULVERT LENGTH ALONG SLOPE               105.55 ft

***** CULVERT DATA SUMMARY ************************
```

```
BARREL SHAPE          CIRCULAR
BARREL DIAMETER         7.50 ft
BARREL MATERIAL       CONCRETE
BARREL MANNING'S n    0.012
INLET TYPE            CONVENTIONAL
INLET EDGE AND WALL   SQUARE EDGE WITH HEADWALL
INLET DEPRESSION      NONE
```

****

5

CURRENT DATE: 10-22-1996 FILE DATE: 10-22-1996
CURRENT TIME: 15:45:18 FILE NAME: DAM4-P2P

****
********** TAILWATER **********
****

```
***** USER DEFINED CHANNEL CROSS-SECTION          FILE NAME: DAM4
      MAIN CHANNEL AND LT & RT OVER BANKS         FILE DATE: 09-06-1995
      LEFT CHANNEL BOUNDARY          6
      RIGHT CHANNEL BOUNDARY        11
      MANNING n LEFT OVER BANK       0.055
      MANNING n MAIN CHANNEL         0.045
      MANNING n RIGHT OVER BANK       0.025
      SLOPE OF CHANNEL               0.0240 ft/ft
```

CROSS-SECTION COORD. NO.	X (ft)	Y (ft)
1	1000.00	1701.84
2	1004.00	1698.64
3	1011.00	1696.24
4	1022.00	1695.24
5	1033.00	1695.64
6	1038.00	1696.54
7	1049.00	1694.04
8	1070.00	1693.24
9	1073.00	1693.94
10	1100.00	1697.14
11	1100.10	1697.54
12	1127.00	1704.82

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	1693.24	0.000	0.00	0.00	0.00
180.00	1694.43	0.843	1.19	3.96	1.02
360.00	1694.81	0.889	1.57	4.90	1.40
540.00	1695.11	0.916	1.87	5.53	1.68
720.00	1695.36	0.935	2.12	6.01	1.91
900.00	1695.57	0.950	2.33	6.40	2.10
1080.00	1695.76	0.962	2.52	6.74	2.26
1260.00	1695.93	0.972	2.69	7.03	2.41
1440.00	1696.09	0.981	2.85	7.29	2.55
1500.00	1696.25	0.989	3.01	7.54	2.68
1800.00	1696.39	0.996	3.15	7.75	2.79

Note: Shear stress was calculated using R.

****
********** ROADWAY OVERTOPPING DATA **********
****

ROADWAY SURFACE PAVED

EMBANKMENT TOP WIDTH	1.00 ft
CREST LENGTH	1.00 ft
OVERTOPPING CREST ELEVATION	1728.00 ft

****

CURRENT DATE: 10-22-1996 FILE DATE: 10-22-1996
CURRENT TIME: 15:47:12 FILE NAME: DAM4-P3B

****
********** FHWA CULVERT ANALYSIS **********
********** HY-8, VERSION 6.0 **********
****

CULV NO.	SITE DATA: INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS	SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	1694.51	1693.24	105.54	1	RCB	10.00	8.00	.012	CONVENTIONAL
2									
3									
4									
5									
6									

****

SUMMARY OF CULVERT FLOWS (cfs) FILE: DAM4-P3B DATE: 10-22-1996

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1694.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1698.56	200.0	200.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1700.69	400.0	400.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1702.65	600.0	600.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1704.67	800.0	800.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1706.99	1000.0	1000.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1709.76	1200.0	1200.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1713.06	1400.0	1400.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1716.92	1600.0	1600.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1721.61	1800.0	1800.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1727.03	2000.0	2000.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1728.00	2033.7	2033.7	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

****

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: DAM4-P3B DATE: 10-22-1996

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
1694.51	0.000	0.00	0.00	0.00
1698.56	0.000	200.00	0.00	0.00
1700.69	0.000	400.00	0.00	0.00
1702.65	0.000	600.00	0.00	0.00
1704.67	0.000	800.00	0.00	0.00
1706.99	0.000	1000.00	0.00	0.00
1709.76	0.000	1200.00	0.00	0.00
1713.06	0.000	1400.00	0.00	0.00
1716.92	0.000	1600.00	0.00	0.00
1721.61	0.000	1800.00	0.00	0.00
1727.03	0.000	2000.00	0.00	0.00

****

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

****

CURRENT DATE: 10-22-1996 FILE DATE: 10-22-1996
CURRENT TIME: 15:47:12 FILE NAME: DAM4-P3B

****

PERFORMANCE CURVE FOR CULVERT 1 - 1(10.00 (ft) BY 8.00 (ft)) RCB

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	1694.51	0.00	-1.27	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
200.00	1698.56	3.93	4.05	1-S2n	1.37	2.32	1.57	1.19	12.72	3.96
400.00	1700.69	6.18	5.21	1-S2n	2.20	3.68	2.65	1.57	15.07	4.90
600.00	1702.65	8.14	6.59	1-S2n	2.92	4.83	3.61	1.87	16.63	5.53
800.00	1704.67	10.16	8.22	5-S2n	3.59	5.85	4.45	2.12	17.98	6.01
1000.00	1706.99	12.48	10.13	5-S2n	4.23	6.79	5.29	2.33	18.92	6.40
1200.00	1709.76	15.25	12.33	5-S2n	4.84	7.66	6.06	2.52	19.79	6.74
1400.00	1713.06	18.55	14.59	6-FFc	5.44	8.00	5.44	2.69	25.75	7.03
1600.00	1716.92	22.41	16.99	6-FFc	6.02	8.00	6.02	2.85	26.57	7.29
1800.00	1721.61	27.10	19.72	6-FFc	6.60	8.00	6.60	3.01	27.29	7.54
2000.00	1727.03	32.52	22.76	6-FFc	7.16	8.00	7.16	3.15	27.93	7.75

El. inlet face invert 1694.51 ft El. outlet invert 1693.24 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	1694.51 ft
OUTLET STATION	105.53 ft
OUTLET ELEVATION	1693.24 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.0120
CULVERT LENGTH ALONG SLOPE	105.54 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	BOX
BARREL SPAN	10.00 ft
BARREL RISE	8.00 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE (90-45 DEG.)
INLET DEPRESSION	NONE

3

CURRENT DATE: 10-22-1996 FILE DATE: 10-22-1996
CURRENT TIME: 15:47:12 FILE NAME: DAM4-P3B

********** TAILWATER **********

***** USER DEFINED CHANNEL CROSS-SECTION FILE NAME: DAM4
MAIN CHANNEL AND LT & RT OVER BANKS FILE DATE: 09-06-1995

LEFT CHANNEL BOUNDARY	6
RIGHT CHANNEL BOUNDARY	11
MANNING n LEFT OVER BANK	0.055
MANNING n MAIN CHANNEL	0.045
MANNING n RIGHT OVER BANK	0.025
SLOPE OF CHANNEL	0.0240 ft/ft

CROSS-SECTION COORD. NO.	X (ft)	Y (ft)
1	1000.00	1701.84

2	1004.00	1698.64
3	1011.00	1696.24
4	1022.00	1695.24
5	1033.00	1695.64
6	1038.00	1696.54
7	1049.00	1694.04
8	1070.00	1693.24
9	1073.00	1693.94
10	1100.00	1697.14
11	1100.10	1697.54
12	1127.00	1704.82

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	1693.24	0.000	0.00	0.00	0.00
200.00	1694.43	0.843	1.19	3.96	1.02
400.00	1694.81	0.889	1.57	4.90	1.40
600.00	1695.11	0.916	1.87	5.53	1.68
800.00	1695.36	0.935	2.12	6.01	1.91
1000.00	1695.57	0.950	2.33	6.40	2.10
1200.00	1695.76	0.962	2.52	6.74	2.26
1400.00	1695.93	0.972	2.69	7.03	2.41
1600.00	1696.09	0.981	2.85	7.29	2.55
1800.00	1696.25	0.989	3.01	7.54	2.68
2000.00	1696.39	0.996	3.15	7.75	2.79

Note: Shear stress was calculated using R.

****
********** ROADWAY OVERTOPPING DATA **********
****

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	1.00 ft
CREST LENGTH	1.00 ft
OVERTOPPING CREST ELEVATION	1728.00 ft

****

CURRENT DATE: 10-22-1996 FILE DATE: 10-22-1996
CURRENT TIME: 15:48:33 FILE NAME: DAM4-P3P

****
********** FHWA CULVERT ANALYSIS **********
********** HY-8, VERSION 6.0 **********
****

CULV NO.	SITE DATA: INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	1694.51	1693.24	105.54	1 RCP	10.00	10.00	.012	CONVENTIONAL
2								
3								
4								
5								
6								

****

SUMMARY OF CULVERT FLOWS (cfs) FILE: DAM4-P3P DATE: 10-22-1996

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1694.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1700.05	200.0	200.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1701.40	400.0	400.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1703.37	600.0	600.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1705.34	800.0	800.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1707.61	1000.0	1000.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1710.36	1200.0	1200.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1713.68	1400.0	1400.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1717.57	1600.0	1600.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1722.01	1800.0	1800.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1726.93	2000.0	2000.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1728.00	2040.7	2040.7	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

****

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: DAM4-P3P DATE: 10-22-1996

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
1694.51	0.000	0.00	0.00	0.00
1700.05	0.000	200.00	0.00	0.00
1701.40	0.000	400.00	0.00	0.00
1703.37	0.000	600.00	0.00	0.00
1705.34	0.000	800.00	0.00	0.00
1707.61	0.000	1000.00	0.00	0.00
1710.36	0.000	1200.00	0.00	0.00
1713.68	0.000	1400.00	0.00	0.00
1717.57	0.000	1600.00	0.00	0.00
1722.01	0.000	1800.00	0.00	0.00
1726.93	0.000	2000.00	0.00	0.00

****

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

****

CURRENT DATE: 10-22-1996 FILE DATE: 10-22-1996
CURRENT TIME: 15:48:33 FILE NAME: DAM4-P3P

****

PERFORMANCE CURVE FOR CULVERT 1 - 1(10.00 (ft) BY 10.00 (ft)) RCP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	1694.51	0.00	-1.27	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
200.00	1700.05	4.43	5.54	1-S2n	2.13	3.28	2.44	1.19	13.36	3.96
400.00	1701.40	6.89	6.75	1-S2n	3.05	4.73	3.63	1.57	15.50	4.90
600.00	1703.37	8.86	8.14	1-S2n	3.77	5.86	4.63	1.87	16.85	5.53
800.00	1705.34	10.83	9.76	1-S2n	4.43	6.80	5.48	2.12	18.16	6.01
1000.00	1707.61	13.10	11.63	5-S2n	5.05	7.59	6.25	2.33	19.39	6.40
1200.00	1710.36	15.85	13.76	5-S2n	5.64	8.24	6.94	2.52	20.64	6.74
1400.00	1713.68	19.17	16.16	5-S2n	6.24	8.77	7.57	2.69	22.01	7.03
1600.00	1717.57	23.06	18.88	5-S2n	6.86	9.29	8.09	2.85	23.52	7.29
1800.00	1722.01	27.50	21.93	5-S2n	7.56	9.82	8.58	3.01	25.18	7.54
2000.00	1726.93	32.42	25.14	6-FFc	8.45	10.00	10.00	3.15	25.46	7.75

El. inlet face invert 1694.51 ft El. outlet invert 1693.24 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	1694.51 ft
OUTLET STATION	105.53 ft
OUTLET ELEVATION	1693.24 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.0120
CULVERT LENGTH ALONG SLOPE	105.54 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	10.00 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE WITH HEADWALL
INLET DEPRESSION	NONE

3

CURRENT DATE: 10-22-1996 FILE DATE: 10-22-1996
CURRENT TIME: 15:48:33 FILE NAME: DAM4-P3P

********** TAILWATER **********

***** USER DEFINED CHANNEL CROSS-SECTION FILE NAME: DAM4
MAIN CHANNEL AND LT & RT OVER BANKS FILE DATE: 09-06-1995

LEFT CHANNEL BOUNDARY	6
RIGHT CHANNEL BOUNDARY	11
MANNING n LEFT OVER BANK	0.055
MANNING n MAIN CHANNEL	0.045
MANNING n RIGHT OVER BANK	0.025
SLOPE OF CHANNEL	0.0240 ft/ft

CROSS-SECTION COORD. NO.	X (ft)	Y (ft)
1	1000.00	1701.84
2	1004.00	1698.64

3	1011.00	1696.24
4	1022.00	1695.24
5	1033.00	1695.64
6	1038.00	1696.54
7	1049.00	1694.04
8	1070.00	1693.24
9	1073.00	1693.94
10	1100.00	1697.14
11	1100.10	1697.54
12	1127.00	1704.82

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	1693.24	0.000	0.00	0.00	0.00
200.00	1694.43	0.843	1.19	3.96	1.02
400.00	1694.81	0.889	1.57	4.90	1.40
600.00	1695.11	0.916	1.87	5.53	1.68
800.00	1695.36	0.935	2.12	6.01	1.91
1000.00	1695.57	0.950	2.33	6.40	2.10
1200.00	1695.76	0.962	2.52	6.74	2.26
1400.00	1695.93	0.972	2.69	7.03	2.41
1600.00	1696.09	0.981	2.85	7.29	2.55
1800.00	1696.25	0.989	3.01	7.54	2.68
2000.00	1696.39	0.996	3.15	7.75	2.79

Note: Shear stress was calculated using R.

****
********** ROADWAY OVERTOPPING DATA **********
****

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	1.00 ft
CREST LENGTH	1.00 ft
OVERTOPPING CREST ELEVATION	1728.00 ft

****

APPENDIX N

Supporting hydraulic calculations and HEC-1 model output for Alternative No. 5.1

```
1*****************************************                    *****************************************
*                                         *                    *                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)     *                    *    U.S. ARMY CORPS OF ENGINEERS       *
*              MAY   1991                 *                    *    HYDROLOGIC ENGINEERING CENTER      *
*            VERSION 4.0.1E               *                    *          609 SECOND STREET            *
*                                         *                    *       DAVIS, CALIFORNIA 95616         *
*  RUN DATE  10/24/96  TIME  08:52:59     *                    *           (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        FOUNTAIN HILLS ADMP
            2           ID        GVSCE Project No. 63                                  file: alt51-rt.ih1
            3           ID        0.5 PMF Analysis                                      date: 10/23/96 ccc
            4           ID
            5           ID        Alternative No. 5.1:
            6           ID          * Principal Spillway by Option P-1A.
            7           ID          * Raise existing dam crest to preclude overtopping by 0.5 PMF
            8           ID            flows.
            9           ID          * Make no modifications to existing emergency spillway
           10           ID
                        *DIAGRAM
           11           IT       5       0       0     200
           12           IO       5
           13           IN       5
           14           JR    FLOW     0.5
                        *

           15           KK   C599I
           16           KM        PMF INFLOW TO GEPD (DAM 4)
           17           BA    7.13
           18           QI   2557.   2391.   2090.   1839.   1635.   1501.   1401.   1319.   1252.   1196.
           19           QI   1155.   1127.   1109.   1101.   1113.   1134.   1144.   1151.   1158.   1172.
           20           QI   1192.   1214.   1239.   1267.   1298.   2898.   9000.  20735.  37590.  53569.
           21           QI  58754.  55837.  50581.  43769.  36839.  31131.  26527.  22646.  19477.  16714.
           22           QI  14532.  12596.  11016.   9743.   8724.   7991.   7404.   6910.   6514.   6160.
           23           QI   5743.   5250.   4788.   4320.   3861.   3424.   3064.   2792.   2565.   2375.
           24           QI   2209.   2062.   1898.   1733.   1604.   1491.   1399.   1334.   1286.   1246.
           25           QI   1212.   1185.   1167.   1152.   1129.   1103.   1085.   1072.   1060.   1050.
           26           QI   1040.   1032.   1023.   1015.   1007.    999.    991.    984.    977.    969.
           27           QI    961.    952.    944.    935.    927.    919.    912.    906.    900.    894.
           28           QI    888.    880.    873.    865.    857.    848.    838.    827.    814.    801.
           29           QI    785.    766.    744.    709.    673.    642.    618.    597.    580.    565.
           30           QI    552.    544.    536.    529.    522.    515.    509.    502.    496.    490.
           31           QI    483.    477.    471.    464.    457.    450.    442.    434.    426.    418.
           32           QI    410.    402.    394.    382.    363.    337.    311.    288.    268.    253.
           33           QI    239.    228.    219.    211.    205.    200.    196.    192.    188.    183.
           34           QI    179.    174.    170.    166.    162.    159.    155.    152.    148.    145.
           35           QI    142.    139.    136.    133.    131.    128.    125.    123.    120.    118.
           36           QI    115.    113.    111.    108.    106.    103.     98.     90.     82.     77.
           37           QI     72.     67.     62.     56.     51.     47.     42.     39.     35.     32.
                        *

           38           KK   C599O
           39           KM      Reservoir route at C599 (GEPD)
           40           KM      Principal Spillway: Option P-1A
           41           KM      Emergency Spillway Width:  280 feet, Elevation = 1714.86 feet
           42           KM      New Dam Crest Elevation:  1726.80 feet
           43           RS       1    ELEV 1714.86
           44           SV    0.00    0.03    0.47   16.85   80.85     107  116.14  136.00  156.22  179.00
           45           SV  190.00  200.89  214.00  226.00  239.00  252.10  267.00  281.00  296.00  310.47
           46           SE  1694.7  1700.0 1702.00 1708.00 1714.00 1715.50 1716.00 1717.00 1718.00 1719.00
           47           SE  1719.5  1720.0 1720.50 1721.00 1721.50 1722.00 1722.50 1723.00 1723.50 1724.00
           48           SQ       0     214     329     947    1485    1719    2039    3188    5014    7405
           49           SQ    8739   10165   11675   13264   14943   17039   19920   23364   27301   31705
           50           ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

```
   15       C599I
                V
                V
   38       C599O

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              MAY   1991              *
 *           VERSION 4.0.1E             *
 *                                      *
 *  RUN DATE  10/24/96  TIME  08:52:59  *
 *                                      *
 ****************************************

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


                              FOUNTAIN HILLS ADMP
                              GVSCE Project No. 63                    file: alt51-rt.ih1
                              0.5 PMF Analysis                        date: 10/23/96 ccc

                              Alternative No. 5.1:
                                * Principal Spillway by Option P-1A.
                                * Raise existing dam crest to preclude overtopping by 0.5 PMF
                                    flows.
                                * Make no modifications to existing emergency spillway


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

     IT          HYDROGRAPH TIME DATA
                        NMIN           5  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1    0  STARTING DATE
                       ITIME        0000  STARTING TIME
                          NQ         200  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      1    0  ENDING DATE
                     NDTIME        1635  ENDING TIME
                      ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL    0.08 HOURS
                       TOTAL TIME BASE   16.58 HOURS

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

     JP          MULTI-PLAN OPTION
                      NPLAN           1  NUMBER OF PLANS

     JR          MULTI-RATIO OPTION
                     RATIOS OF RUNOFF
                    0.50
1

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


                                                                  RATIOS APPLIED TO FLOWS
 OPERATION       STATION     AREA    PLAN            RATIO 1
                                                        0.50

 HYDROGRAPH AT
+                 C599I      7.13     1   FLOW       29377.
                                          TIME         2.50

 ROUTED TO
+                 C599O      7.13     1   FLOW       28614.
                                          TIME         2.58

                                     ** PEAK STAGES IN FEET **
                                     1   STAGE     1723.65
                                          TIME         2.58


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

Alternative No. 5-1
Storage and Discharge vs Stage Data for Golden Eagle Park Dam (4)

HY8 Output

Stage (ft)	Discharges Circular (cfs)	Arch (cfs)	12'x 5' Box (cfs)	Total (cfs)
1694.51	0	0	0	0
1699.84	139	66	0	205
1703.29	231	130	42	403
1705.35	271	156	206	633
1707.14	301	174	376	851
1709.07	330	192	545	1067
1711.42	363	212	711	1286
1714.30	400	234	874	1508
1715.32	412	241	916	1569
1721.92	482	283	1176	1941
1726.65	524	310	1326	2160
1728.00	534	318	1366	2218

Uneven Weir Output

Stage (ft)	Discharge (cfs)
1714.50	0
1715.00	4
1715.50	140
1716.00	431
1716.50	882
1717.00	1499
1717.50	2293
1718.00	3242
1718.50	4336
1719.00	5537
1719.50	6817
1720.00	8182
1720.50	9633
1721.00	11151
1721.50	12752
1722.00	14762
1722.50	17547
1723.00	20877
1723.50	24687
1724.00	28946
1724.50	33637
1725.00	38754
1725.50	44238
1726.00	49808
1726.50	55636
1727.00	61727
1727.50	68076
1728.00	74675

GVSCE

Stage NGVD 29 Datum	Surface Area (acres)	Storage Volume (acre-feet)	Discharge, in cfs Principal Spillway	Emergency Spillway	Total
1694.69	0.00	0.00	0	---	0
1696.00	0.00	0.00	57	---	57
1698.00	0.00	0.00	134	---	134
1700.00	0.05	0.03	214	---	214
1702.00	0.45	0.47	329	---	329
1704.00	1.54	2.35	482	---	482
1706.00	3.61	7.35	712	---	712
1708.00	5.99	16.85	947	---	947
1710.00	8.91	31.66	1154	---	1154
1712.00	12.23	52.71	1330	---	1330
1714.00	15.99	80.85	1485	---	1485
1714.50	---	90	1520	0	1520
1715.00	---	98	1550	4	1554
1715.50	---	107	1579	140	1719
1716.00	19.36	116.14	1608	431	2039
1716.50	---	126	1636	882	2518
1717.00	---	136	1664	1499	3163
1717.50	---	146	1692	2293	3985
1718.00	20.73	156.22	1720	3242	4962
1718.50	---	167	1748	4336	6084
1719.00	---	179	1776	5537	7313
1719.50	---	190	1804	6817	8621
1720.00	23.97	200.89	1833	8182	10015
1720.50	---	214	1861	9633	11494
1721.00	---	226	1889	11151	13040
1721.50	---	239	1917	12752	14669
1722.00	27.28	252.10	1944	14762	16706
1722.50	---	267	1967	17547	19514
1723.00	---	281	1991	20877	22868
1723.50	---	296	2014	24687	26701
1724.00	31.13	310.47	2037	28946	30983
1724.50	---	327	2060	33637	35697
1725.00	---	344	2083	38754	40837
1725.50	---	360	2106	44238	46344
1726.00	35.04	376.60	2129	49808	51937
1726.50	---	395	2153	55636	57789
1727.00	36.73	413	2175	61727	63902
1727.50	---	432	2197	68076	70273
1728.00	38.42	450.02	2218	74675	76893

APPENDIX O

Supporting hydraulic calculations and HEC-1 model output for Alternative No. 5.2

```
1****************************************                    ****************************************
*                                      *                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *   U.S. ARMY CORPS OF ENGINEERS       *
*              MAY   1991              *                    *   HYDROLOGIC ENGINEERING CENTER      *
*            VERSION 4.0.1E            *                    *         609 SECOND STREET            *
*                                      *                    *      DAVIS, CALIFORNIA 95616         *
*  RUN DATE  10/24/96  TIME  11:01:09  *                    *          (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        FOUNTAIN HILLS ADMP
           2          ID        GVSCE Project No. 63                                  file: alt52-rt.ih1
           3          ID        0.5 PMF Analysis                                      date: 10/23/96 ccc
           4          ID
           5          ID        Alternative No. 5.1:
           6          ID          * Principal Spillway by Option P-1A.
           7          ID          * Increase width of existing emergency spillway to handle the
           8          ID            0.5 PMF flows.
           9          ID          * Maintain existing dam crest elevation.
          10          ID
                      *DIAGRAM
          11          IT       5       0       0     200
          12          IO       5
          13          IN       5
          14          JR    FLOW     0.5
                      *

          15          KK   C599I
          16          KM        PMF INFLOW TO GEPD (DAM 4)
          17          BA    7.13
          18          QI   2557.   2391.   2090.   1839.   1635.   1501.   1401.   1319.   1252.   1196.
          19          QI   1155.   1127.   1109.   1101.   1113.   1134.   1144.   1151.   1158.   1172.
          20          QI   1192.   1214.   1239.   1267.   1298.   2898.   9000.  20735.  37590.  53569.
          21          QI  58754.  55837.  50581.  43769.  36839.  31131.  26527.  22646.  19477.  16714.
          22          QI  14532.  12596.  11016.   9743.   8724.   7991.   7404.   6910.   6514.   6160.
          23          QI   5743.   5250.   4788.   4320.   3861.   3424.   3064.   2792.   2565.   2375.
          24          QI   2209.   2062.   1898.   1733.   1604.   1491.   1399.   1334.   1286.   1246.
          25          QI   1212.   1185.   1167.   1152.   1129.   1103.   1085.   1072.   1060.   1050.
          26          QI   1040.   1032.   1023.   1015.   1007.    999.    991.    984.    977.    969.
          27          QI    961.    952.    944.    935.    927.    919.    912.    906.    900.    894.
          28          QI    888.    880.    873.    865.    857.    848.    838.    827.    814.    801.
          29          QI    785.    766.    744.    709.    673.    642.    618.    597.    580.    565.
          30          QI    552.    544.    536.    529.    522.    515.    509.    502.    496.    490.
          31          QI    483.    477.    471.    464.    457.    450.    442.    434.    426.    418.
          32          QI    410.    402.    394.    382.    363.    337.    311.    288.    268.    253.
          33          QI    239.    228.    219.    211.    205.    200.    196.    192.    188.    183.
          34          QI    179.    174.    170.    166.    162.    159.    155.    152.    148.    145.
          35          QI    142.    139.    136.    133.    131.    128.    125.    123.    120.    118.
          36          QI    115.    113.    111.    108.    106.    103.     98.     90.     82.     77.
          37          QI     72.     67.     62.     56.     51.     47.     42.     39.     35.     32.
                      *

          38          KK   C599O
          39          KM      Reservoir route at C599 (GEPD)
          40          KM      Principal Spillway: Option P-1A
          41          KM      New Emergency Spillway Width:  550 feet; Elevation = 1714.86 feet
          42          KM      Dam Crest Elevation: 1721.47 feet
          43          RS       1    ELEV 1714.86
          44          SV    0.00    0.03    0.47   16.85   80.85     107  116.14  136.00  156.22  179.00
          45          SV  190.00  200.89  214.00  226.00  239.00  252.10  267.00  281.00  296.00  310.47
          46          SE  1694.7  1700.0 1702.00 1708.00 1714.00 1715.50 1716.00 1717.00 1718.00 1719.00
          47          SE  1719.5  1720.0 1720.50 1721.00 1721.50 1722.00 1722.50 1723.00 1723.50 1724.00
          48          SQ       0     214     329     947    1485    2133    2967    5598    9453   14289
          49          SQ   16908   19693   22632   25719   28958   32508   36654   41255   46260   51652
          50          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

```
   15       C599I
                V
                V
   38       C599O

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              MAY   1991              *
 *           VERSION 4.0.1E             *
 *                                      *
 *  RUN DATE  10/24/96  TIME  11:01:09  *
 *                                      *
 ****************************************

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

                              FOUNTAIN HILLS ADMP
                              GVSCE Project No. 63                    file: alt52-rt.ih1
                              0.5 PMF Analysis                        date: 10/23/96 ccc

                              Alternative No. 5.1:
                                * Principal Spillway by Option P-1A.
                                * Increase width of existing emergency spillway to handle the
                                  0.5 PMF flows.
                                * Maintain existing dam crest elevation.

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

     IT          HYDROGRAPH TIME DATA
                        NMIN           5  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1    0  STARTING DATE
                       ITIME        0000  STARTING TIME
                          NQ         200  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      1    0  ENDING DATE
                     NDTIME        1635  ENDING TIME
                      ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL    0.08 HOURS
                       TOTAL TIME BASE   16.58 HOURS

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

     JP          MULTI-PLAN OPTION
                       NPLAN           1  NUMBER OF PLANS

     JR          MULTI-RATIO OPTION
                     RATIOS OF RUNOFF
                       0.50
1

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

                                                                  RATIOS APPLIED TO FLOWS
 OPERATION       STATION     AREA    PLAN            RATIO 1
                                                        0.50

 HYDROGRAPH AT
+                 C599I      7.13     1   FLOW       29377.
                                         TIME         2.50

 ROUTED TO
+                 C599O      7.13     1   FLOW       28555.
                                         TIME         2.58

                                     ** PEAK STAGES IN FEET **
                                     1   STAGE     1721.44
                                         TIME         2.58


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

Alternative No. 5-2

Storage and Discharge vs Stage Data for Golden Eagle Park Dam (4)

EMERGENCY	SPILLWAY:	Width	550	ft.	Elevation:	1714.86	ft.
AUXILIARY	SPILLWAY:	Width	N/A		Elevation:	N/A	
PRINCIPAL	SPILLWAY:	New Pipe	12' X 5'	RCB	plus	Existing	

HY8 Output

Stage (ft)	Discharges: Circular (cfs)	Arch (cfs)	Box Culvert (cfs)	Total (cfs)
1694.51	0	0	0	0
1699.84	139	66	0	205
1703.29	231	130	42	403
1705.35	271	156	206	633
1707.14	301	174	376	851
1709.07	330	192	545	1067
1711.42	363	212	711	1286
1714.30	400	234	874	1508
1715.32	412	241	916	1569
1721.92	482	283	1176	1941
1726.65	524	310	1326	2160
1728.00	534	318	1366	2218

Uneven Weir Output

Stage (ft)	Discharge (cfs)
1714.50	0.00
1714.80	22.00
1714.90	31.00
1715.00	40
1715.50	497
1716.00	1303
1716.50	2432
1717.00	3878
1717.50	5634
1718.00	7677
1718.50	10002
1719.00	12456
1719.50	15047
1720.00	17804
1720.50	20715
1721.00	23775
1721.50	26991
1722.00	30517
1722.50	34640
1723.00	39218
1723.50	44200
1724.00	49569
1724.50	55322
1725.00	61463

Note: The Uneven Weir Output comes from ALT_5-2.IWR

GVSCE

Stage NGVD 29 Datum	Surface Area (acres)	Storage Volume (acre-feet)	Discharge, in cfs: Principal Spillway	Emergency Spillway	Total
1694.69	0.00	0.00	0	---	0
1696.00	0.00	0.00	57	---	57
1698.00	0.00	0.00	134	---	134
1700.00	0.05	0.03	214	---	214
1702.00	0.45	0.47	329	---	329
1704.00	1.54	2.35	482	---	482
1706.00	3.61	7.35	712	---	712
1708.00	5.99	16.85	947	---	947
1710.00	8.91	31.66	1154	---	1154
1712.00	12.23	52.71	1330	---	1330
1714.00	15.99	80.85	1485	---	1485
1714.50	---	90	1520	---	1520
1714.86	---	96	1542	0	1550
1714.90	---	97	1544	31.00	1610
1715.00	---	98	1550	40	1648
1715.50	---	107	1579	497	2133
1716.00	19.36	116.14	1608	1303	2967
1716.50	---	126	1636	2432	4124
1717.00	---	136	1664	3878	5598
1717.50	---	146	1692	5634	7382
1718.00	20.73	156.22	1720	7677	9453
1718.50	---	167	1748	10002	11806
1719.00	---	179	1776	12456	14289
1719.50	---	190	1804	15047	16908
1720.00	23.97	200.89	1833	17804	19693
1720.50	---	214	1861	20715	22632
1721.00	---	226	1889	23775	25719
1721.50	---	239	1917	26991	28958
1722.00	27.28	252.10	1944	30517	32508
1722.50	---	267	1967	34640	36654
1723.00	---	281	1991	39218	41255
1723.50	---	296	2014	44200	46260
1724.00	31.13	310.47	2037	49569	51652
1724.50	---	311	2060	55322	55322
1725.00	---	311	2083	61463	61463

APPENDIX P

Supporting hydraulic calculations and HEC-1 model output for Alternative No. 5.3

```
1*************************************                    *************************************
 *                                   *                    *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *   U.S. ARMY CORPS OF ENGINEERS    *
 *              MAY   1991           *                    *   HYDROLOGIC ENGINEERING CENTER   *
 *           VERSION 4.0.1E          *                    *         609 SECOND STREET         *
 *                                   *                    *      DAVIS, CALIFORNIA 95616      *
 *  RUN DATE  10/24/96  TIME  10:56:54  *                    *          (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        FOUNTAIN HILLS ADMP
  2           ID        GVSCE Project No. 63                                file: alt53-rt.ih1
  3           ID        0.5 PMF Analysis                                    date: 10/23/96 ccc
  4           ID
  5           ID        Alternative No. 5.3:
  6           ID          * Principal Spillway by Option P-1A.
  7           ID          * Grade a secondary, stair-step emergency spillway above and
  8           ID            adjacent to the existing emergency spillway, to handle the
  9           ID            0.5 PMF flows without overtopping.
 10           ID          * Maintain existing crest elevation.
 11           ID
              *DIAGRAM
 12           IT       5       0       0     200
 13           IO       5
 14           IN       5
 15           JR    FLOW     0.5
              *

 16           KK   C599I
 17           KM        PMF INFLOW TO GEPD (DAM 4)
 18           BA    7.13
 19           QI   2557.   2391.   2090.   1839.   1635.   1501.   1401.   1319.   1252.   1196.
 20           QI   1155.   1127.   1109.   1101.   1113.   1134.   1144.   1151.   1158.   1172.
 21           QI   1192.   1214.   1239.   1267.   1298.   2898.   9000.  20735.  37590.  53569.
 22           QI  58754.  55837.  50581.  43769.  36839.  31131.  26527.  22646.  19477.  16714.
 23           QI  14532.  12596.  11016.   9743.   8724.   7991.   7404.   6910.   6514.   6160.
 24           QI   5743.   5250.   4788.   4320.   3861.   3424.   3064.   2792.   2565.   2375.
 25           QI   2209.   2062.   1898.   1733.   1604.   1491.   1399.   1334.   1286.   1246.
 26           QI   1212.   1185.   1167.   1152.   1129.   1103.   1085.   1072.   1060.   1050.
 27           QI   1040.   1032.   1023.   1015.   1007.    999.    991.    984.    977.    969.
 28           QI    961.    952.    944.    935.    927.    919.    912.    906.    900.    894.
 29           QI    888.    880.    873.    865.    857.    848.    838.    827.    814.    801.
 30           QI    785.    766.    744.    709.    673.    642.    618.    597.    580.    565.
 31           QI    552.    544.    536.    529.    522.    515.    509.    502.    496.    490.
 32           QI    483.    477.    471.    464.    457.    450.    442.    434.    426.    418.
 33           QI    410.    402.    394.    382.    363.    337.    311.    288.    268.    253.
 34           QI    239.    228.    219.    211.    205.    200.    196.    192.    188.    183.
 35           QI    179.    174.    170.    166.    162.    159.    155.    152.    148.    145.
 36           QI    142.    139.    136.    133.    131.    128.    125.    123.    120.    118.
 37           QI    115.    113.    111.    108.    106.    103.     98.     90.     82.     77.
 38           QI     72.     67.     62.     56.     51.     47.     42.     39.     35.     32.
              *

 39           KK   C599O
 40           KM      Reservoir route at C599 (GEPD)
 41           KM      Principal Spillway: Option P-1A
 42           KM      Primary Emergency Spillway Width: 280 feet, Elevation = 1714.86 feet
 43           KM      Secondary Emergency Spillway Width: 490 feet, Elevation = 1717.0 feet
 44           KM      New Dam Crest Elevation:  1721.47 feet
 45           RS       1    ELEV 1714.86
 46           SV    0.00    0.03    0.47   16.85   80.85     107  116.14  136.00  156.22  179.00
 47           SV  190.00  200.89  214.00  226.00  239.00  252.10  267.00  281.00  296.00  310.47
 48           SE  1694.7  1700.0 1702.00 1708.00 1714.00 1715.50 1716.00 1717.00 1718.00 1719.00
 49           SE  1719.5  1720.0 1720.50 1721.00 1721.50 1722.00 1722.50 1723.00 1723.50 1724.00
 50           SQ       0     214     329     947    1485    1719    2039    3188    6306   11243
1                                                HEC-1 INPUT                                                PAGE  2

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

 51           SQ   14232   17555   21197   25034   29005   33275   37988   43079   48508   54268
 52           ZZ
```

```
1
                    SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE       (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    16        C599I
                  V
                  V
    39        C5990

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              MAY   1991              *                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *           VERSION 4.0.1E             *                                    *          609 SECOND STREET           *
 *                                      *                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE  10/24/96  TIME  10:56:54  *                                    *           (916) 551-1748             *
 *                                      *                                    *                                      *
 ****************************************                                    ****************************************


                              FOUNTAIN HILLS ADMP
                              GVSCE Project No. 63                          file: alt53-rt.ih1
                              0.5 PMF Analysis                              date: 10/23/96 ccc

                              Alternative No. 5.3:
                                * Principal Spillway by Option P-1A.
                                * Grade a secondary, stair-step emergency spillway above and
                                  adjacent to the existing emergency spillway, to handle the
                                  0.5 PMF flows without overtopping.
                                * Maintain existing crest elevation.


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

      IT          HYDROGRAPH TIME DATA
                         NMIN          5  MINUTES IN COMPUTATION INTERVAL
                        IDATE      1   0  STARTING DATE
                        ITIME       0000  STARTING TIME
                           NQ        200  NUMBER OF HYDROGRAPH ORDINATES
                       NDDATE      1   0  ENDING DATE
                       NDTIME       1635  ENDING TIME
                        ICENT         19  CENTURY MARK

                    COMPUTATION INTERVAL    0.08 HOURS
                         TOTAL TIME BASE   16.58 HOURS

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

      JP          MULTI-PLAN OPTION
                       NPLAN          1  NUMBER OF PLANS

      JR          MULTI-RATIO OPTION
                      RATIOS OF RUNOFF
                     0.50
1

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


                                                                  RATIOS APPLIED TO FLOWS
 OPERATION       STATION     AREA    PLAN            RATIO 1
                                                       0.50

 HYDROGRAPH AT
+                 C599I      7.13     1   FLOW       29377.
                                         TIME         2.50

 ROUTED TO
+                 C5990      7.13     1   FLOW       28656.
                                         TIME         2.58

                                     ** PEAK STAGES IN FEET **
                                     1   STAGE     1721.46
                                         TIME         2.58


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

Alternative No. 5-3

Storage and Discharge vs Stage Data for Golden Eagle Park Dam (4)

EMERGENCY	SPILLWAY:	Width	490	ft.	Elevation:	1717	ft.
AUXILIARY	SPILLWAY:	Width	280	(Modified)	Elevation:	Existing	
PRINCIPAL	SPILLWAY:	New Pipe	12' X 5'	RCB	plus	Existing	

HY8 Output

Stage (ft)	Discharges: Circular (cfs)	Arch (cfs)	Box Culvert (cfs)	Total (cfs)
1694.51	0	0	0	0
1699.84	139	66	0	205
1703.29	231	130	42	403
1705.35	271	156	206	633
1707.14	301	174	376	851
1709.07	330	192	545	1067
1711.42	363	212	711	1286
1714.30	400	234	874	1508
1715.32	412	241	916	1569
1721.92	482	283	1176	1941
1726.65	524	310	1326	2160
1728.00	534	318	1366	2218

Uneven Weir Output

Stage (ft)	Discharge (cfs)
1714.50	0
1715.00	4
1715.50	140
1716.00	431
1716.50	890
1717.00	1524
1717.50	2778
1718.00	4586
1718.50	6839
1719.00	9467
1719.50	12428
1720.00	15722
1720.50	19336
1721.00	23145
1721.50	27088
1722.00	31331
1722.50	36021
1723.00	41088
1723.50	46494
1724.00	52231

GVSCE

Stage NGVD 29 Datum	Surface Area (acres)	Storage Volume (acre-feet)	Discharge, in cfs: Principal Spillway	Emergency Spillway	Total
1694.69	0.00	0.00	0	---	0
1696.00	0.00	0.00	57	---	57
1698.00	0.00	0.00	134	---	134
1700.00	0.05	0.03	214	---	214
1702.00	0.45	0.47	329	---	329
1704.00	1.54	2.35	482	---	482
1706.00	3.61	7.35	712	---	712
1708.00	5.99	16.85	947	---	947
1710.00	8.91	31.66	1154	---	1154
1712.00	12.23	52.71	1330	---	1330
1714.00	15.99	80.85	1485	---	1485
1714.50	---	90	1520	0	1520
1715.00	---	98	1550	4	1554
1715.50	---	107	1579	140	1719
1716.00	19.36	116.14	1608	431	2039
1716.50	---	126	1636	890	2526
1717.00	---	136	1664	1524	3188
1717.50	---	146	1692	2778	4470
1718.00	20.73	156.22	1720	4586	6306
1718.50	---	167	1748	6839	8587
1719.00	---	179	1776	9467	11243
1719.50	---	190	1804	12428	14232
1720.00	23.97	200.89	1833	15722	17555
1720.50	---	214	1861	19336	21197
1721.00	---	226	1889	23145	25034
1721.50	---	239	1917	27088	29005
1722.00	27.28	252.10	1944	31331	33275
1722.50	---	267	1967	36021	37988
1723.00	---	281	1991	41088	43079
1723.50	---	296	2014	46494	48508
1724.00	31.13	310.47	2037	52231	54268

APPENDIX Q

Supporting hydraulic calculations and HEC-1 model output for Alternative No. 5.4

```
1****************************************                    ****************************************
*                                      *                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *   U.S. ARMY CORPS OF ENGINEERS       *
*              MAY  1991               *                    *   HYDROLOGIC ENGINEERING CENTER      *
*            VERSION 4.0.1E            *                    *         609 SECOND STREET            *
*                                      *                    *      DAVIS, CALIFORNIA 95616         *
*  RUN DATE  10/24/96  TIME  09:01:28  *                    *          (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        FOUNTAIN HILLS ADMP
        2           ID        GVSCE Project No. 63                          file: alt54art.ih1
        3           ID        0.5 PMF Analysis                              date: 10/23/96 ccc
        4           ID
        5           ID        Alternative No. 5.4:
        6           ID          * Principal Spillway by Option P-1A.
        7           ID          * Construct a separate fuse plug spillway to augment the existing
        8           ID            emergency spillway capacity, and provide conveyance to handle the
        9           ID            0.5 PMF flows without dam crest overtopping.
       10           ID          * Maintain existing crest elevation.
       11           ID
       12           ID        PHASE I MODEL: This model routes the 0.5 PMF inflow hydrograph using
       13           ID                       a rating curve that assumes the fuse plug does not
       14           ID                       collapse until the stage elevation exceeds the design
       15           ID                       height of 1718.50 feet.  That point in time determines
       16           ID                       when the fuse plug collapses during the inflow
       17           ID                       hydrograph.  The remaining hydrologic routing is
       18           ID                       performed by the PHASE II MODEL, which uses a rating
       19           ID                       curve that assumes a completely collapsed fuse plug
       20           ID                       for the remainder of the storm.
       21           ID
                    *DIAGRAM
       22           IT       1       0       0    1000
       23           IO       5
       24           IN       5
       25           JR    FLOW     0.5
                    *

       26           KK   C599I
       27           KM        PMF INFLOW TO GEPD (DAM 4)
       28           BA    7.13
       29           QI   2557.   2391.   2090.   1839.   1635.   1501.   1401.   1319.   1252.   1196.
       30           QI   1155.   1127.   1109.   1101.   1113.   1134.   1144.   1151.   1158.   1172.
       31           QI   1192.   1214.   1239.   1267.   1298.   2898.   9000.  20735.  37590.  53569.
       32           QI  58754.  55837.  50581.  43769.  36839.  31131.  26527.  22646.  19477.  16714.
       33           QI  14532.  12596.  11016.   9743.   8724.   7991.   7404.   6910.   6514.   6160.
       34           QI   5743.   5250.   4788.   4320.   3861.   3424.   3064.   2792.   2565.   2375.
       35           QI   2209.   2062.   1898.   1733.   1604.   1491.   1399.   1334.   1286.   1246.
       36           QI   1212.   1185.   1167.   1152.   1129.   1103.   1085.   1072.   1060.   1050.
       37           QI   1040.   1032.   1023.   1015.   1007.    999.    991.    984.    977.    969.
       38           QI    961.    952.    944.    935.    927.    919.    912.    906.    900.    894.
       39           QI    888.    880.    873.    865.    857.    848.    838.    827.    814.    801.
       40           QI    785.    766.    744.    709.    673.    642.    618.    597.    580.    565.
       41           QI    552.    544.    536.    529.    522.    515.    509.    502.    496.    490.
       42           QI    483.    477.    471.    464.    457.    450.    442.    434.    426.    418.
       43           QI    410.    402.    394.    382.    363.    337.    311.    288.    268.    253.
       44           QI    239.    228.    219.    211.    205.    200.    196.    192.    188.    183.
       45           QI    179.    174.    170.    166.    162.    159.    155.    152.    148.    145.
       46           QI    142.    139.    136.    133.    131.    128.    125.    123.    120.    118.
       47           QI    115.    113.    111.    108.    106.    103.     98.     90.     82.     77.
       48           QI     72.     67.     62.     56.     51.     47.     42.     39.     35.     32.
                    *

1                                          HEC-1 INPUT                                          PAGE  2

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

```
49          KK   C5990
50          KO       1
51          KM      Reservoir route at C599 (GEPD)
52          KM      Principal Spillway: Option P-1A
53          KM      Existing Emergency Spillway Width: 280 feet, Elevation = 1714.86 feet
54          KM      Fuse Plug Emergency Spillway Width: 150 feet, Elevation = 1708.0 feet
55          KM      Dam Crest Elevation:  1721.47 feet
56          RS       1    ELEV 1714.86
57          SV    0.00    0.03    0.47   16.85   80.85     107  116.14  136.00  156.22  179.00
58          SV  190.00  200.89  214.00  226.00  239.00  252.10  267.00  281.00  296.00  310.47
59          SE  1694.7  1700.0 1702.00 1708.00 1714.00 1715.50 1716.00 1717.00 1718.00 1719.00
60          SE  1719.5  1720.0 1720.50 1721.00 1721.50 1722.00 1722.50 1723.00 1723.50 1724.00
61          SQ       0     214     329     947    1485    1719    2039    3188    5014    7541
62          SQ    9134   10909   12848   14944   17203   19898   23259   27097   31386   36104
63          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    26       C599I
                 V
                 V
    49       C5990

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*****************************************                                    *****************************************
*                                         *                                    *                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)     *                                    *   U.S. ARMY CORPS OF ENGINEERS        *
*              MAY   1991                 *                                    *   HYDROLOGIC ENGINEERING CENTER       *
*            VERSION 4.0.1E               *                                    *          609 SECOND STREET            *
*                                         *                                    *       DAVIS, CALIFORNIA 95616         *
*  RUN DATE  10/24/96  TIME  09:01:28     *                                    *          (916) 551-1748               *
*                                         *                                    *                                       *
*****************************************                                    *****************************************
```

FOUNTAIN HILLS ADMP
GVSCE Project No. 63 — file: alt54art.ih1
0.5 PMF Analysis — date: 10/23/96 ccc

Alternative No. 5.4:
- Principal Spillway by Option P-1A.
- Construct a separate fuse plug spillway to augment the existing emergency spillway capacity, and provide conveyance to handle the 0.5 PMF flows without dam crest overtopping.
- Maintain existing crest elevation.

PHASE I MODEL: This model routes the 0.5 PMF inflow hydrograph using a rating curve that assumes the fuse plug does not collapse until the stage elevation exceeds the design height of 1718.50 feet. That point in time determines when the fuse plug collapses during the inflow hydrograph. The remaining hydrologic routing is performed by the PHASE II MODEL, which uses a rating curve that assumes a completely collapsed fuse plug for the remainder of the storm.

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

    IT          HYDROGRAPH TIME DATA
                       NMIN           1  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ        1000  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      1    0  ENDING DATE
                     NDTIME        1639  ENDING TIME
                      ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL    0.02 HOURS
                       TOTAL TIME BASE   16.65 HOURS

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

    JP          MULTI-PLAN OPTION
                      NPLAN           1  NUMBER OF PLANS

    JR          MULTI-RATIO OPTION
                    RATIOS OF RUNOFF
                   0.50
```

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

            **************
            *            *
 49 KK      *     C5990  *
            *            *
            **************

 50 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          1  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                             Reservoir route at C599 (GEPD)
                             Principal Spillway: Option P-1A
                             Existing Emergency Spillway Width: 280 feet, Elevation = 1714.86 feet
                             Fuse Plug Emergency Spillway Width: 150 feet, Elevation = 1708.0 feet
                             Dam Crest Elevation:  1721.47 feet

              HYDROGRAPH ROUTING DATA

 56 RS          STORAGE ROUTING
                      NSTPS          1  NUMBER OF SUBREACHES
                       ITYP       ELEV  TYPE OF INITIAL CONDITION
                     RSVRIC    1714.86  INITIAL CONDITION
                          X       0.00 WORKING R AND D COEFFICIENT

 57 SV            STORAGE        0.0      0.0      0.5     16.9     80.8    107.0    116.1    136.0    156.2    179.0
                                190.0    200.9    214.0    226.0    239.0    252.1    267.0    281.0    296.0    310.5

 59 SE           ELEVATION    1694.70  1700.00  1702.00  1708.00  1714.00  1715.50  1716.00  1717.00  1718.00  1719.00
                              1719.50  1720.00  1720.50  1721.00  1721.50  1722.00  1722.50  1723.00  1723.50  1724.00

 61 SQ           DISCHARGE        0.      214.     329.     947.    1485.    1719.    2039.    3188.    5014.    7541.
                                9134.   10909.   12848.   14944.   17203.   19898.   23259.   27097.   31386.   36104.

                                                                  ***

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN        0. TO      214.
                THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
                THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

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

                                                HYDROGRAPH AT STATION    C5990
                                                    PLAN 1,    RATIO =  0.50

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

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	1619.	95.8	1714.9	1		0534	335	1395.	70.1	1713.0	1		1108	669	232.	0.1	1700.3
1		0001	2	1615.	95.4	1714.8	1		0535	336	1386.	69.1	1712.9	1		1109	670	231.	0.1	1700.3
1		0002	3	1610.	94.9	1714.8	1		0536	337	1378.	68.1	1712.8	1		1110	671	230.	0.1	1700.3
1		0003	4	1606.	94.4	1714.8	1		0537	338	1370.	67.2	1712.7	1		1111	672	230.	0.1	1700.3
1		0004	5	1601.	93.8	1714.7	1		0538	339	1362.	66.2	1712.6	1		1112	673	229.	0.1	1700.3
1		0005	6	1596.	93.3	1714.7	1		0539	340	1353.	65.2	1712.5	1		1113	674	228.	0.1	1700.2
1		0006	7	1591.	92.7	1714.7	1		0540	341	1345.	64.2	1712.4	1		1114	675	228.	0.1	1700.2
1		0007	8	1586.	92.1	1714.6	1		0541	342	1337.	63.3	1712.4	1		1115	676	227.	0.1	1700.2
1		0008	9	1580.	91.5	1714.6	1		0542	343	1329.	62.3	1712.3	1		1116	677	226.	0.1	1700.2
1		0009	10	1574.	90.8	1714.6	1		0543	344	1321.	61.4	1712.2	1		1117	678	225.	0.1	1700.2
1		0010	11	1568.	90.1	1714.5	1		0544	345	1313.	60.4	1712.1	1		1118	679	225.	0.1	1700.2
1		0011	12	1561.	89.4	1714.5	1		0545	346	1305.	59.5	1712.0	1		1119	680	224.	0.1	1700.2
1		0012	13	1554.	88.6	1714.4	1		0546	347	1297.	58.5	1711.9	1		1120	681	223.	0.1	1700.2
1		0013	14	1547.	87.8	1714.4	1		0547	348	1290.	57.6	1711.8	1		1121	682	222.	0.1	1700.1
1		0014	15	1540.	87.0	1714.4	1		0548	349	1282.	56.7	1711.7	1		1122	683	222.	0.1	1700.1
1		0015	16	1533.	86.2	1714.3	1		0549	350	1274.	55.8	1711.6	1		1123	684	221.	0.1	1700.1
1		0016	17	1525.	85.3	1714.3	1		0550	351	1266.	54.8	1711.6	1		1124	685	220.	0.1	1700.1
1		0017	18	1517.	84.5	1714.2	1		0551	352	1259.	53.9	1711.5	1		1125	686	219.	0.0	1700.1
1		0018	19	1509.	83.6	1714.2	1		0552	353	1251.	53.0	1711.4	1		1126	687	218.	0.0	1700.1
1		0019	20	1501.	82.7	1714.1	1		0553	354	1244.	52.1	1711.3	1		1127	688	218.	0.0	1700.1
1		0020	21	1493.	81.7	1714.1	1		0554	355	1236.	51.3	1711.2	1		1128	689	217.	0.0	1700.0
1		0021	22	1485.	80.8	1714.0	1		0555	356	1229.	50.4	1711.1	1		1129	690	216.	0.0	1700.0
1		0022	23	1477.	79.9	1713.9	1		0556	357	1222.	49.5	1711.1	1		1130	691	215.	0.0	1700.0
1		0023	24	1469.	78.9	1713.8	1		0557	358	1214.	48.6	1711.0	1		1131	692	214.	0.0	1700.0
1		0024	25	1461.	78.0	1713.7	1		0558	359	1207.	47.8	1710.9	1		1132	693	212.	0.0	1699.9
1		0025	26	1453.	77.0	1713.6	1		0559	360	1200.	46.9	1710.8	1		1133	694	210.	0.0	1699.9
1		0026	27	1445.	76.0	1713.5	1		0600	361	1193.	46.1	1710.7	1		1134	695	210.	0.0	1699.9
1		0027	28	1436.	75.1	1713.5	1		0601	362	1186.	45.3	1710.7	1		1135	696	209.	0.0	1699.9
1		0028	29	1428.	74.1	1713.4	1		0602	363	1179.	44.4	1710.6	1		1136	697	208.	0.0	1699.9
1		0029	30	1420.	73.1	1713.3	1		0603	364	1172.	43.6	1710.5	1		1137	698	207.	0.0	1699.8
1		0030	31	1412.	72.1	1713.2	1		0604	365	1165.	42.8	1710.4	1		1138	699	207.	0.0	1699.8
1		0031	32	1404.	71.2	1713.1	1		0605	366	1158.	42.0	1710.4	1		1139	700	206.	0.0	1699.8
1		0032	33	1395.	70.2	1713.0	1		0606	367	1152.	41.2	1710.3	1		1140	701	205.	0.0	1699.8
1		0033	34	1387.	69.2	1712.9	1		0607	368	1145.	40.4	1710.2	1		1141	702	204.	0.0	1699.8
1		0034	35	1379.	68.2	1712.8	1		0608	369	1138.	39.6	1710.1	1		1142	703	203.	0.0	1699.7
1		0035	36	1371.	67.2	1712.7	1		0609	370	1132.	38.8	1710.1	1		1143	704	203.	0.0	1699.7
1		0036	37	1362.	66.3	1712.6	1		0610	371	1125.	38.1	1710.0	1		1144	705	202.	0.0	1699.7
1		0037	38	1354.	65.3	1712.5	1		0611	372	1119.	37.3	1709.9	1		1145	706	201.	0.0	1699.7
1		0038	39	1346.	64.3	1712.4	1		0612	373	1112.	36.5	1709.8	1		1146	707	200.	0.0	1699.7
1		0039	40	1338.	63.3	1712.4	1		0613	374	1106.	35.8	1709.8	1		1147	708	199.	0.0	1699.6
1		0040	41	1330.	62.4	1712.3	1		0614	375	1100.	35.0	1709.7	1		1148	709	199.	0.0	1699.6
1		0041	42	1321.	61.4	1712.2	1		0615	376	1093.	34.3	1709.6	1		1149	710	198.	0.0	1699.6
1		0042	43	1313.	60.4	1712.1	1		0616	377	1087.	33.5	1709.6	1		1150	711	197.	0.0	1699.6
1		0043	44	1305.	59.5	1712.0	1		0617	378	1081.	32.8	1709.5	1		1151	712	196.	0.0	1699.6
1		0044	45	1297.	58.5	1711.9	1		0618	379	1075.	32.0	1709.4	1		1152	713	195.	0.0	1699.5
1		0045	46	1289.	57.6	1711.8	1		0619	380	1069.	31.3	1709.4	1		1153	714	194.	0.0	1699.5
1		0046	47	1281.	56.6	1711.7	1		0620	381	1063.	30.6	1709.3	1		1154	715	192.	0.0	1699.5
1		0047	48	1273.	55.7	1711.6	1		0621	382	1057.	29.9	1709.2	1		1155	716	191.	0.0	1699.4

1	0048	49	1265.	54.7	1711.6	*	1	0622	383	1051.	29.2	1709.2	*	1	1156	717	189.	0.0	1699.4
1	0049	50	1258.	53.8	1711.5	*	1	0623	384	1045.	28.5	1709.1	*	1	1157	718	187.	0.0	1699.3
1	0050	51	1250.	52.9	1711.4	*	1	0624	385	1039.	27.8	1709.0	*	1	1158	719	186.	0.0	1699.3
1	0051	52	1242.	51.9	1711.3	*	1	0625	386	1033.	27.1	1709.0	*	1	1159	720	184.	0.0	1699.2
1	0052	53	1234.	51.0	1711.2	*	1	0626	387	1027.	26.4	1708.9	*	1	1200	721	182.	0.0	1699.2
1	0053	54	1227.	50.1	1711.1	*	1	0627	388	1022.	25.7	1708.8	*	1	1201	722	179.	0.0	1699.1
1	0054	55	1219.	49.2	1711.0	*	1	0628	389	1016.	25.1	1708.8	*	1	1202	723	177.	0.0	1699.1
1	0055	56	1212.	48.3	1711.0	*	1	0629	390	1011.	24.4	1708.7	*	1	1203	724	174.	0.0	1699.0
1	0056	57	1204.	47.4	1710.9	*	1	0630	391	1005.	23.8	1708.6	*	1	1204	725	171.	0.0	1698.9
1	0057	58	1197.	46.6	1710.8	*	1	0631	392	1000.	23.1	1708.6	*	1	1205	726	169.	0.0	1698.9
1	0058	59	1189.	45.7	1710.7	*	1	0632	393	994.	22.5	1708.5	*	1	1206	727	166.	0.0	1698.8
1	0059	60	1182.	44.8	1710.6	*	1	0633	394	989.	21.8	1708.5	*	1	1207	728	164.	0.0	1698.8
1	0100	61	1175.	44.0	1710.5	*	1	0634	395	983.	21.2	1708.4	*	1	1208	729	161.	0.0	1698.7
1	0101	62	1168.	43.1	1710.5	*	1	0635	396	978.	20.6	1708.3	*	1	1209	730	158.	0.0	1698.6
1	0102	63	1161.	42.3	1710.4	*	1	0636	397	973.	19.9	1708.3	*	1	1210	731	156.	0.0	1698.6
1	0103	64	1154.	41.4	1710.3	*	1	0637	398	968.	19.3	1708.2	*	1	1211	732	153.	0.0	1698.5
1	0104	65	1147.	40.6	1710.2	*	1	0638	399	963.	18.7	1708.2	*	1	1212	733	151.	0.0	1698.4
1	0105	66	1140.	39.8	1710.2	*	1	0639	400	958.	18.1	1708.1	*	1	1213	734	149.	0.0	1698.4
1	0106	67	1133.	39.0	1710.1	*	1	0640	401	953.	17.5	1708.1	*	1	1214	735	147.	0.0	1698.3
1	0107	68	1126.	38.2	1710.0	*	1	0641	402	948.	16.9	1708.0	*	1	1215	736	144.	0.0	1698.3
1	0108	69	1120.	37.4	1709.9	*	1	0642	403	928.	16.3	1707.8	*	1	1216	737	142.	0.0	1698.2
1	0109	70	1113.	36.6	1709.9	*	1	0643	404	907.	15.8	1707.6	*	1	1217	738	140.	0.0	1698.2
1	0110	71	1107.	35.9	1709.8	*	1	0644	405	887.	15.3	1707.4	*	1	1218	739	138.	0.0	1698.1
1	0111	72	1101.	35.1	1709.7	*	1	0645	406	868.	14.8	1707.2	*	1	1219	740	136.	0.0	1698.1
1	0112	73	1094.	34.4	1709.6	*	1	0646	407	850.	14.3	1707.1	*	1	1220	741	134.	0.0	1698.0
1	0113	74	1088.	33.6	1709.6	*	1	0647	408	833.	13.8	1706.9	*	1	1221	742	133.	0.0	1698.0
1	0114	75	1082.	32.9	1709.5	*	1	0648	409	817.	13.4	1706.7	*	1	1222	743	131.	0.0	1697.9
1	0115	76	1076.	32.2	1709.4	*	1	0649	410	802.	13.0	1706.6	*	1	1223	744	130.	0.0	1697.9
1	0116	77	1070.	31.5	1709.4	*	1	0650	411	787.	12.6	1706.4	*	1	1224	745	128.	0.0	1697.9
1	0117	78	1065.	30.8	1709.3	*	1	0651	412	773.	12.2	1706.3	*	1	1225	746	127.	0.0	1697.8
1	0118	79	1059.	30.2	1709.2	*	1	0652	413	760.	11.9	1706.2	*	1	1226	747	125.	0.0	1697.8
1	0119	80	1053.	29.5	1709.2	*	1	0653	414	747.	11.6	1706.1	*	1	1227	748	124.	0.0	1697.8
1	0120	81	1048.	28.8	1709.1	*	1	0654	415	735.	11.2	1705.9	*	1	1228	749	122.	0.0	1697.7
1	0121	82	1042.	28.2	1709.1	*	1	0655	416	724.	10.9	1705.8	*	1	1229	750	121.	0.0	1697.7
1	0122	83	1037.	27.5	1709.0	*	1	0656	417	713.	10.6	1705.7	*	1	1230	751	120.	0.0	1697.7
1	0123	84	1032.	26.9	1708.9	*	1	0657	418	702.	10.4	1705.6	*	1	1231	752	118.	0.0	1697.6
1	0124	85	1026.	26.3	1708.9	*	1	0658	419	692.	10.1	1705.5	*	1	1232	753	117.	0.0	1697.6
1	0125	86	1021.	25.7	1708.8	*	1	0659	420	683.	9.8	1705.4	*	1	1233	754	116.	0.0	1697.6
1	0126	87	1016.	25.0	1708.8	*	1	0700	421	674.	9.6	1705.3	*	1	1234	755	115.	0.0	1697.6
1	0127	88	1011.	24.4	1708.7	*	1	0701	422	665.	9.4	1705.3	*	1	1235	756	114.	0.0	1697.5
1	0128	89	1006.	23.9	1708.7	*	1	0702	423	657.	9.2	1705.2	*	1	1236	757	113.	0.0	1697.5
1	0129	90	1001.	23.3	1708.6	*	1	0703	424	649.	8.9	1705.1	*	1	1237	758	112.	0.0	1697.5
1	0130	91	996.	22.7	1708.5	*	1	0704	425	641.	8.8	1705.0	*	1	1238	759	111.	0.0	1697.5
1	0131	92	991.	22.1	1708.5	*	1	0705	426	634.	8.6	1705.0	*	1	1239	760	110.	0.0	1697.4
1	0132	93	987.	21.6	1708.4	*	1	0706	427	627.	8.4	1704.9	*	1	1240	761	110.	0.0	1697.4
1	0133	94	982.	21.0	1708.4	*	1	0707	428	621.	8.2	1704.8	*	1	1241	762	109.	0.0	1697.4
1	0134	95	977.	20.5	1708.3	*	1	0708	429	615.	8.0	1704.8	*	1	1242	763	108.	0.0	1697.4
1	0135	96	973.	19.9	1708.3	*	1	0709	430	609.	7.9	1704.7	*	1	1243	764	107.	0.0	1697.4
1	0136	97	968.	19.4	1708.2	*	1	0710	431	603.	7.7	1704.7	*	1	1244	765	106.	0.0	1697.3
1	0137	98	964.	18.9	1708.2	*	1	0711	432	597.	7.6	1704.6	*	1	1245	766	106.	0.0	1697.3
1	0138	99	960.	18.4	1708.1	*	1	0712	433	592.	7.4	1704.6	*	1	1246	767	105.	0.0	1697.3
1	0139	100	955.	17.9	1708.1	*	1	0713	434	587.	7.3	1704.5	*	1	1247	768	104.	0.0	1697.3
1	0140	101	951.	17.4	1708.0	*	1	0714	435	582.	7.2	1704.5	*	1	1248	769	104.	0.0	1697.3
1	0141	102	947.	16.9	1708.0	*	1	0715	436	578.	7.1	1704.4	*	1	1249	770	103.	0.0	1697.3
1	0142	103	931.	16.4	1707.8	*	1	0716	437	574.	7.0	1704.4	*	1	1250	771	103.	0.0	1697.2
1	0143	104	914.	16.0	1707.7	*	1	0717	438	569.	6.8	1704.3	*	1	1251	772	102.	0.0	1697.2
1	0144	105	898.	15.6	1707.5	*	1	0718	439	565.	6.7	1704.3	*	1	1252	773	102.	0.0	1697.2
1	0145	106	883.	15.2	1707.4	*	1	0719	440	562.	6.6	1704.3	*	1	1253	774	101.	0.0	1697.2
1	0146	107	869.	14.8	1707.2	*	1	0720	441	558.	6.5	1704.2	*	1	1254	775	101.	0.0	1697.2
1	0147	108	856.	14.4	1707.1	*	1	0721	442	554.	6.4	1704.2	*	1	1255	776	100.	0.0	1697.2
1	0148	109	844.	14.1	1707.0	*	1	0722	443	551.	6.4	1704.2	*	1	1256	777	100.	0.0	1697.2
1	0149	110	832.	13.8	1706.9	*	1	0723	444	548.	6.3	1704.1	*	1	1257	778	99.	0.0	1697.2
1	0150	111	822.	13.5	1706.8	*	1	0724	445	545.	6.2	1704.1	*	1	1258	779	99.	0.0	1697.1
1	0151	112	811.	13.3	1706.7	*	1	0725	446	541.	6.1	1704.1	*	1	1259	780	98.	0.0	1697.1
1	0152	113	802.	13.0	1706.6	*	1	0726	447	539.	6.0	1704.0	*	1	1300	781	98.	0.0	1697.1
1	0153	114	793.	12.8	1706.5	*	1	0727	448	536.	6.0	1704.0	*	1	1301	782	98.	0.0	1697.1
1	0154	115	785.	12.5	1706.4	*	1	0728	449	533.	5.9	1704.0	*	1	1302	783	97.	0.0	1697.1
1	0155	116	777.	12.3	1706.3	*	1	0729	450	530.	5.8	1704.0	*	1	1303	784	97.	0.0	1697.1
1	0156	117	770.	12.2	1706.3	*	1	0730	451	528.	5.7	1703.9	*	1	1304	785	96.	0.0	1697.1
1	0157	118	763.	12.0	1706.2	*	1	0731	452	526.	5.7	1703.9	*	1	1305	786	96.	0.0	1697.1
1	0158	119	757.	11.8	1706.2	*	1	0732	453	523.	5.6	1703.9	*	1	1306	787	96.	0.0	1697.1
1	0159	120	751.	11.7	1706.1	*	1	0733	454	521.	5.6	1703.9	*	1	1307	788	95.	0.0	1697.1
1	0200	121	746.	11.5	1706.0	*	1	0734	455	519.	5.5	1703.8	*	1	1308	789	95.	0.0	1697.0
1	0201	122	745.	11.5	1706.0	*	1	0735	456	517.	5.4	1703.8	*	1	1309	790	94.	0.0	1697.0
1	0202	123	752.	11.7	1706.1	*	1	0736	457	514.	5.4	1703.8	*	1	1310	791	94.	0.0	1697.0
1	0203	124	767.	12.1	1706.3	*	1	0737	458	512.	5.3	1703.8	*	1	1311	792	94.	0.0	1697.0
1	0204	125	790.	12.7	1706.5	*	1	0738	459	511.	5.3	1703.8	*	1	1312	793	93.	0.0	1697.0
1	0205	126	819.	13.5	1706.8	*	1	0739	460	509.	5.2	1703.7	*	1	1313	794	93.	0.0	1697.0
1	0206	127	867.	14.7	1707.2	*	1	0740	461	507.	5.2	1703.7	*	1	1314	795	92.	0.0	1697.0
1	0207	128	942.	16.7	1708.0	*	1	0741	462	505.	5.1	1703.7	*	1	1315	796	92.	0.0	1697.0
1	0208	129	969.	19.5	1708.2	*	1	0742	463	503.	5.1	1703.7	*	1	1316	797	91.	0.0	1697.0
1	0209	130	999.	23.1	1708.6	*	1	0743	464	502.	5.0	1703.7	*	1	1317	798	91.	0.0	1696.9
1	0210	131	1036.	27.5	1709.0	*	1	0744	465	500.	5.0	1703.7	*	1	1318	799	90.	0.0	1696.9
1	0211	132	1083.	33.0	1709.5	*	1	0745	466	498.	5.0	1703.6	*	1	1319	800	90.	0.0	1696.9
1	0212	133	1142.	40.1	1710.2	*	1	0746	467	497.	4.9	1703.6	*	1	1320	801	90.	0.0	1696.9
1	0213	134	1215.	48.7	1711.0	*	1	0747	468	495.	4.9	1703.6	*	1	1321	802	89.	0.0	1696.9
1	0214	135	1300.	58.8	1711.9	*	1	0748	469	494.	4.8	1703.6	*	1	1322	803	89.	0.0	1696.9
1	0215	136	1398.	70.5	1713.0	*	1	0749	470	492.	4.8	1703.6	*	1	1323	804	88.	0.0	1696.9
1	0216	137	1512.	83.9	1714.2	*	1	0750	471	491.	4.8	1703.6	*	1	1324	805	88.	0.0	1696.9
1	0217	138	1652.	99.5	1715.1	*	1	0751	472	489.	4.7	1703.6	*	1	1325	806	87.	0.0	1696.9
1	0218	139	2088.	117.0	1716.0	*	1	0752	473	488.	4.7	1703.5	*	1	1326	807	87.	0.0	1696.8
1	0219	140	3175.	135.8	1717.0	*	1	0753	474	487.	4.6	1703.5	*	1	1327	808	86.	0.0	1696.8
1	0220	141	4898.	154.9	1717.9	*	1	0754	475	485.	4.6	1703.5	*	1	1328	809	86.	0.0	1696.8
1	0221	142	6960.	173.8	1718.8	*	1	0755	476	484.	4.6	1703.5	*	1	1329	810	85.	0.0	1696.8
1	0222	143	9407.	191.7	1719.6	*	1	0756	477	483.	4.5	1703.5	*	1	1330	811	85.	0.0	1696.8
1	0223	144	12008.	208.3	1720.3	*	1	0757	478	482.	4.5	1703.5	*	1	1331	812	85.	0.0	1696.8
1	0224	145	14531.	223.6	1720.9	*	1	0758	479	480.	4.5	1703.5	*	1	1332	813	84.	0.0	1696.8
1	0225	146	16981.	237.7	1721.5	*	1	0759	480	479.	4.5	1703.5	*	1	1333	814	84.	0.0	1696.8
1	0226	147	19443.	249.9	1721.9	*	1	0800	481	478.	4.4	1703.4	*	1	1334	815	83.	0.0	1696.8

1	0227	148	21589.	259.6	1722.3	*	1	0801	482	477.	4.4	1703.4	*	1	1335	816	83.	0.0	1696.8
1	0228	149	23348.	267.3	1722.5	*	1	0802	483	476.	4.4	1703.4	*	1	1336	817	83.	0.0	1696.7
1	0229	150	25016.	273.4	1722.7	*	1	0803	484	475.	4.3	1703.4	*	1	1337	818	82.	0.0	1696.7
1	0230	151	26319.	278.2	1722.9	*	1	0804	485	474.	4.3	1703.4	*	1	1338	819	82.	0.0	1696.7
1	0231	152	27249.	281.5	1723.0	*	1	0805	486	473.	4.3	1703.4	*	1	1339	820	81.	0.0	1696.7
1	0232	153	27805.	283.5	1723.1	*	1	0806	487	472.	4.2	1703.4	*	1	1340	821	81.	0.0	1696.7
1	0233	154	28083.	284.4	1723.1	*	1	0807	488	471.	4.2	1703.4	*	1	1341	822	81.	0.0	1696.7
1	0234	155	28173.	284.8	1723.1	*	1	0808	489	470.	4.2	1703.4	*	1	1342	823	80.	0.0	1696.7
1	0235	156	28137.	284.6	1723.1	*	1	0809	490	469.	4.2	1703.4	*	1	1343	824	80.	0.0	1696.7
1	0236	157	27979.	284.1	1723.1	*	1	0810	491	468.	4.1	1703.3	*	1	1344	825	80.	0.0	1696.7
1	0237	158	27699.	283.1	1723.1	*	1	0811	492	467.	4.1	1703.3	*	1	1345	826	80.	0.0	1696.7
1	0238	159	27339.	281.8	1723.0	*	1	0812	493	466.	4.1	1703.3	*	1	1346	827	79.	0.0	1696.7
1	0239	160	26930.	280.4	1723.0	*	1	0813	494	465.	4.1	1703.3	*	1	1347	828	79.	0.0	1696.7
1	0240	161	26493.	278.8	1722.9	*	1	0814	495	464.	4.1	1703.3	*	1	1348	829	78.	0.0	1696.6
1	0241	162	26003.	277.0	1722.9	*	1	0815	496	463.	4.0	1703.3	*	1	1349	830	78.	0.0	1696.6
1	0242	163	25452.	275.0	1722.8	*	1	0816	497	463.	4.0	1703.3	*	1	1350	831	78.	0.0	1696.6
1	0243	164	24860.	272.8	1722.7	*	1	0817	498	462.	4.0	1703.3	*	1	1351	832	77.	0.0	1696.6
1	0244	165	24239.	270.6	1722.6	*	1	0818	499	461.	4.0	1703.3	*	1	1352	833	77.	0.0	1696.6
1	0245	166	23600.	268.2	1722.5	*	1	0819	500	460.	3.9	1703.3	*	1	1353	834	77.	0.0	1696.6
1	0246	167	22993.	265.8	1722.5	*	1	0820	501	459.	3.9	1703.3	*	1	1354	835	76.	0.0	1696.6
1	0247	168	22415.	263.3	1722.4	*	1	0821	502	458.	3.9	1703.3	*	1	1355	836	76.	0.0	1696.6
1	0248	169	21807.	260.6	1722.3	*	1	0822	503	458.	3.9	1703.2	*	1	1356	837	76.	0.0	1696.6
1	0249	170	21175.	257.8	1722.2	*	1	0823	504	457.	3.9	1703.2	*	1	1357	838	75.	0.0	1696.6
1	0250	171	20527.	254.9	1722.1	*	1	0824	505	456.	3.8	1703.2	*	1	1358	839	75.	0.0	1696.6
1	0251	172	19885.	252.0	1722.0	*	1	0825	506	455.	3.8	1703.2	*	1	1359	840	74.	0.0	1696.5
1	0252	173	19309.	249.2	1721.9	*	1	0826	507	454.	3.8	1703.2	*	1	1400	841	74.	0.0	1696.5
1	0253	174	18734.	246.4	1721.8	*	1	0827	508	454.	3.8	1703.2	*	1	1401	842	74.	0.0	1696.5
1	0254	175	18160.	243.7	1721.7	*	1	0828	509	453.	3.8	1703.2	*	1	1402	843	73.	0.0	1696.5
1	0255	176	17587.	240.9	1721.6	*	1	0829	510	452.	3.7	1703.2	*	1	1403	844	73.	0.0	1696.5
1	0256	177	17052.	238.1	1721.5	*	1	0830	511	451.	3.7	1703.2	*	1	1404	845	73.	0.0	1696.5
1	0257	178	16587.	235.5	1721.4	*	1	0831	512	451.	3.7	1703.2	*	1	1405	846	73.	0.0	1696.5
1	0258	179	16122.	232.8	1721.3	*	1	0832	513	450.	3.7	1703.2	*	1	1406	847	72.	0.0	1696.5
1	0259	180	15659.	230.1	1721.2	*	1	0833	514	449.	3.7	1703.2	*	1	1407	848	72.	0.0	1696.5
1	0300	181	15196.	227.5	1721.1	*	1	0834	515	448.	3.6	1703.2	*	1	1408	849	72.	0.0	1696.5
1	0301	182	14741.	224.8	1721.0	*	1	0835	516	447.	3.6	1703.2	*	1	1409	850	71.	0.0	1696.5
1	0302	183	14298.	222.3	1720.8	*	1	0836	517	447.	3.6	1703.1	*	1	1410	851	71.	0.0	1696.5
1	0303	184	13868.	219.8	1720.7	*	1	0837	518	446.	3.6	1703.1	*	1	1411	852	71.	0.0	1696.5
1	0304	185	13446.	217.4	1720.6	*	1	0838	519	445.	3.5	1703.1	*	1	1412	853	70.	0.0	1696.4
1	0305	186	13032.	215.1	1720.5	*	1	0839	520	444.	3.5	1703.1	*	1	1413	854	70.	0.0	1696.4
1	0306	187	12661.	212.7	1720.5	*	1	0840	521	444.	3.5	1703.1	*	1	1414	855	70.	0.0	1696.4
1	0307	188	12326.	210.5	1720.4	*	1	0841	522	443.	3.5	1703.1	*	1	1415	856	70.	0.0	1696.4
1	0308	189	11994.	208.2	1720.3	*	1	0842	523	442.	3.5	1703.1	*	1	1416	857	69.	0.0	1696.4
1	0309	190	11665.	206.0	1720.2	*	1	0843	524	441.	3.4	1703.1	*	1	1417	858	69.	0.0	1696.4
1	0310	191	11338.	203.8	1720.1	*	1	0844	525	440.	3.4	1703.1	*	1	1418	859	69.	0.0	1696.4
1	0311	192	11017.	201.6	1720.0	*	1	0845	526	440.	3.4	1703.1	*	1	1419	860	68.	0.0	1696.4
1	0312	193	10685.	199.5	1719.9	*	1	0846	527	439.	3.4	1703.1	*	1	1420	861	68.	0.0	1696.4
1	0313	194	10354.	197.5	1719.8	*	1	0847	528	438.	3.4	1703.1	*	1	1421	862	68.	0.0	1696.4
1	0314	195	10035.	195.5	1719.8	*	1	0848	529	437.	3.3	1703.0	*	1	1422	863	67.	0.0	1696.4
1	0315	196	9724.	193.6	1719.7	*	1	0849	530	436.	3.3	1703.0	*	1	1423	864	67.	0.0	1696.4
1	0316	197	9426.	191.8	1719.6	*	1	0850	531	435.	3.3	1703.0	*	1	1424	865	67.	0.0	1696.4
1	0317	198	9144.	190.1	1719.5	*	1	0851	532	435.	3.3	1703.0	*	1	1425	866	67.	0.0	1696.3
1	0318	199	8901.	188.4	1719.4	*	1	0852	533	434.	3.2	1703.0	*	1	1426	867	66.	0.0	1696.3
1	0319	200	8664.	186.8	1719.4	*	1	0853	534	433.	3.2	1703.0	*	1	1427	868	66.	0.0	1696.3
1	0320	201	8430.	185.1	1719.3	*	1	0854	535	432.	3.2	1703.0	*	1	1428	869	66.	0.0	1696.3
1	0321	202	8202.	183.6	1719.2	*	1	0855	536	431.	3.2	1703.0	*	1	1429	870	66.	0.0	1696.3
1	0322	203	7979.	182.0	1719.1	*	1	0856	537	430.	3.1	1703.0	*	1	1430	871	66.	0.0	1696.3
1	0323	204	7762.	180.5	1719.1	*	1	0857	538	429.	3.1	1703.0	*	1	1431	872	65.	0.0	1696.3
1	0324	205	7549.	179.1	1719.0	*	1	0858	539	428.	3.1	1703.0	*	1	1432	873	65.	0.0	1696.3
1	0325	206	7384.	177.6	1718.9	*	1	0859	540	427.	3.1	1703.0	*	1	1433	874	65.	0.0	1696.3
1	0326	207	7218.	176.1	1718.9	*	1	0900	541	426.	3.0	1702.9	*	1	1434	875	64.	0.0	1696.3
1	0327	208	7054.	174.6	1718.8	*	1	0901	542	425.	3.0	1702.9	*	1	1435	876	64.	0.0	1696.3
1	0328	209	6891.	173.1	1718.7	*	1	0902	543	424.	3.0	1702.9	*	1	1436	877	64.	0.0	1696.3
1	0329	210	6728.	171.7	1718.7	*	1	0903	544	423.	3.0	1702.9	*	1	1437	878	63.	0.0	1696.3
1	0330	211	6566.	170.2	1718.6	*	1	0904	545	422.	2.9	1702.9	*	1	1438	879	63.	0.0	1696.3
1	0331	212	6407.	168.8	1718.6	*	1	0905	546	421.	2.9	1702.9	*	1	1439	880	63.	0.0	1696.3
1	0332	213	6252.	167.4	1718.5	*	1	0906	547	420.	2.9	1702.9	*	1	1440	881	63.	0.0	1696.2
1	0333	214	6101.	166.0	1718.4	*	1	0907	548	419.	2.9	1702.9	*	1	1441	882	62.	0.0	1696.2
1	0334	215	5954.	164.7	1718.4	*	1	0908	549	418.	2.8	1702.9	*	1	1442	883	62.	0.0	1696.2
1	0335	216	5809.	163.4	1718.3	*	1	0909	550	417.	2.8	1702.9	*	1	1443	884	62.	0.0	1696.2
1	0336	217	5669.	162.1	1718.3	*	1	0910	551	415.	2.8	1702.8	*	1	1444	885	62.	0.0	1696.2
1	0337	218	5534.	160.9	1718.2	*	1	0911	552	414.	2.7	1702.8	*	1	1445	886	62.	0.0	1696.2
1	0338	219	5404.	159.7	1718.2	*	1	0912	553	413.	2.7	1702.8	*	1	1446	887	61.	0.0	1696.2
1	0339	220	5278.	158.6	1718.1	*	1	0913	554	412.	2.7	1702.8	*	1	1447	888	61.	0.0	1696.2
1	0340	221	5155.	157.5	1718.1	*	1	0914	555	410.	2.6	1702.8	*	1	1448	889	61.	0.0	1696.2
1	0341	222	5037.	156.4	1718.0	*	1	0915	556	409.	2.6	1702.8	*	1	1449	890	60.	0.0	1696.2
1	0342	223	4941.	155.4	1718.0	*	1	0916	557	408.	2.6	1702.8	*	1	1450	891	60.	0.0	1696.2
1	0343	224	4852.	154.4	1717.9	*	1	0917	558	406.	2.5	1702.7	*	1	1451	892	60.	0.0	1696.2
1	0344	225	4764.	153.5	1717.9	*	1	0918	559	405.	2.5	1702.7	*	1	1452	893	60.	0.0	1696.2
1	0345	226	4679.	152.5	1717.8	*	1	0919	560	403.	2.4	1702.7	*	1	1453	894	59.	0.0	1696.2
1	0346	227	4595.	151.6	1717.8	*	1	0920	561	402.	2.4	1702.7	*	1	1454	895	59.	0.0	1696.2
1	0347	228	4515.	150.7	1717.7	*	1	0921	562	400.	2.4	1702.7	*	1	1455	896	59.	0.0	1696.2
1	0348	229	4437.	149.8	1717.7	*	1	0922	563	398.	2.3	1702.7	*	1	1456	897	59.	0.0	1696.2
1	0349	230	4361.	149.0	1717.6	*	1	0923	564	397.	2.3	1702.7	*	1	1457	898	58.	0.0	1696.1
1	0350	231	4287.	148.2	1717.6	*	1	0924	565	395.	2.2	1702.6	*	1	1458	899	58.	0.0	1696.1
1	0351	232	4216.	147.4	1717.6	*	1	0925	566	393.	2.2	1702.6	*	1	1459	900	58.	0.0	1696.1
1	0352	233	4147.	146.6	1717.5	*	1	0926	567	391.	2.1	1702.6	*	1	1500	901	58.	0.0	1696.1
1	0353	234	4080.	145.9	1717.5	*	1	0927	568	389.	2.1	1702.6	*	1	1501	902	57.	0.0	1696.1
1	0354	235	4016.	145.2	1717.5	*	1	0928	569	387.	2.0	1702.6	*	1	1502	903	57.	0.0	1696.1
1	0355	236	3953.	144.5	1717.4	*	1	0929	570	384.	1.9	1702.5	*	1	1503	904	57.	0.0	1696.1
1	0356	237	3892.	143.8	1717.4	*	1	0930	571	382.	1.9	1702.5	*	1	1504	905	57.	0.0	1696.1
1	0357	238	3834.	143.2	1717.4	*	1	0931	572	380.	1.8	1702.5	*	1	1505	906	57.	0.0	1696.1
1	0358	239	3778.	142.5	1717.3	*	1	0932	573	377.	1.7	1702.5	*	1	1506	907	56.	0.0	1696.1
1	0359	240	3724.	141.9	1717.3	*	1	0933	574	375.	1.7	1702.4	*	1	1507	908	56.	0.0	1696.1
1	0400	241	3672.	141.4	1717.3	*	1	0934	575	372.	1.6	1702.4	*	1	1508	909	56.	0.0	1696.1
1	0401	242	3621.	140.8	1717.2	*	1	0935	576	370.	1.5	1702.4	*	1	1509	910	56.	0.0	1696.1
1	0402	243	3572.	140.3	1717.2	*	1	0936	577	367.	1.5	1702.4	*	1	1510	911	56.	0.0	1696.1
1	0403	244	3525.	139.7	1717.2	*	1	0937	578	365.	1.4	1702.3	*	1	1511	912	55.	0.0	1696.1
1	0404	245	3479.	139.2	1717.2	*	1	0938	579	362.	1.3	1702.3	*	1	1512	913	55.	0.0	1696.1
1	0405	246	3434.	138.7	1717.1	*	1	0939	580	360.	1.3	1702.3	*	1	1513	914	55.	0.0	1696.1

1	0406	247	3390.	138.2	1717.1	*	1	0940	581	357.	1.2	1702.3	*	1	1514	915	54.	0.0	1696.0
1	0407	248	3347.	137.8	1717.1	*	1	0941	582	355.	1.1	1702.2	*	1	1515	916	54.	0.0	1696.0
1	0408	249	3303.	137.3	1717.1	*	1	0942	583	352.	1.1	1702.2	*	1	1516	917	54.	0.0	1696.0
1	0409	250	3260.	136.8	1717.0	*	1	0943	584	350.	1.0	1702.2	*	1	1517	918	54.	0.0	1696.0
1	0410	251	3217.	136.3	1717.0	*	1	0944	585	347.	1.0	1702.2	*	1	1518	919	53.	0.0	1696.0
1	0411	252	3179.	135.8	1717.0	*	1	0945	586	345.	0.9	1702.2	*	1	1519	920	53.	0.0	1696.0
1	0412	253	3149.	135.3	1717.0	*	1	0946	587	342.	0.8	1702.1	*	1	1520	921	53.	0.0	1696.0
1	0413	254	3119.	134.8	1716.9	*	1	0947	588	340.	0.8	1702.1	*	1	1521	922	53.	0.0	1696.0
1	0414	255	3087.	134.2	1716.9	*	1	0948	589	338.	0.7	1702.1	*	1	1522	923	52.	0.0	1696.0
1	0415	256	3053.	133.7	1716.9	*	1	0949	590	335.	0.6	1702.1	*	1	1523	924	52.	0.0	1696.0
1	0416	257	3018.	133.1	1716.9	*	1	0950	591	333.	0.6	1702.0	*	1	1524	925	52.	0.0	1696.0
1	0417	258	2983.	132.5	1716.8	*	1	0951	592	331.	0.5	1702.0	*	1	1525	926	52.	0.0	1696.0
1	0418	259	2947.	131.8	1716.8	*	1	0952	593	328.	0.5	1702.0	*	1	1526	927	51.	0.0	1696.0
1	0419	260	2910.	131.2	1716.8	*	1	0953	594	315.	0.4	1701.8	*	1	1527	928	51.	0.0	1696.0
1	0420	261	2872.	130.5	1716.7	*	1	0954	595	306.	0.4	1701.6	*	1	1528	929	50.	0.0	1695.9
1	0421	262	2833.	129.9	1716.7	*	1	0955	596	299.	0.4	1701.5	*	1	1529	930	50.	0.0	1695.9
1	0422	263	2794.	129.2	1716.7	*	1	0956	597	294.	0.3	1701.4	*	1	1530	931	49.	0.0	1695.9
1	0423	264	2755.	128.5	1716.6	*	1	0957	598	290.	0.3	1701.3	*	1	1531	932	48.	0.0	1695.9
1	0424	265	2715.	127.8	1716.6	*	1	0958	599	287.	0.3	1701.3	*	1	1532	933	47.	0.0	1695.9
1	0425	266	2674.	127.1	1716.6	*	1	0959	600	284.	0.3	1701.2	*	1	1533	934	47.	0.0	1695.9
1	0426	267	2633.	126.4	1716.5	*	1	1000	601	282.	0.3	1701.2	*	1	1534	935	46.	0.0	1695.8
1	0427	268	2591.	125.7	1716.5	*	1	1001	602	280.	0.3	1701.1	*	1	1535	936	45.	0.0	1695.8
1	0428	269	2549.	125.0	1716.4	*	1	1002	603	278.	0.3	1701.1	*	1	1536	937	44.	0.0	1695.8
1	0429	270	2507.	124.2	1716.4	*	1	1003	604	277.	0.3	1701.1	*	1	1537	938	43.	0.0	1695.8
1	0430	271	2465.	123.5	1716.4	*	1	1004	605	276.	0.3	1701.1	*	1	1538	939	43.	0.0	1695.8
1	0431	272	2422.	122.8	1716.3	*	1	1005	606	275.	0.3	1701.1	*	1	1539	940	42.	0.0	1695.7
1	0432	273	2379.	122.0	1716.3	*	1	1006	607	274.	0.3	1701.0	*	1	1540	941	41.	0.0	1695.7
1	0433	274	2337.	121.3	1716.3	*	1	1007	608	273.	0.3	1701.0	*	1	1541	942	41.	0.0	1695.7
1	0434	275	2294.	120.5	1716.2	*	1	1008	609	272.	0.3	1701.0	*	1	1542	943	40.	0.0	1695.7
1	0435	276	2251.	119.8	1716.2	*	1	1009	610	271.	0.2	1701.0	*	1	1543	944	40.	0.0	1695.7
1	0436	277	2208.	119.1	1716.1	*	1	1010	611	270.	0.2	1701.0	*	1	1544	945	39.	0.0	1695.7
1	0437	278	2166.	118.3	1716.1	*	1	1011	612	270.	0.2	1701.0	*	1	1545	946	39.	0.0	1695.7
1	0438	279	2124.	117.6	1716.1	*	1	1012	613	269.	0.2	1701.0	*	1	1546	947	38.	0.0	1695.6
1	0439	280	2083.	116.9	1716.0	*	1	1013	614	268.	0.2	1700.9	*	1	1547	948	38.	0.0	1695.6
1	0440	281	2042.	116.2	1716.0	*	1	1014	615	267.	0.2	1700.9	*	1	1548	949	37.	0.0	1695.6
1	0441	282	2016.	115.5	1716.0	*	1	1015	616	267.	0.2	1700.9	*	1	1549	950	37.	0.0	1695.6
1	0442	283	1992.	114.8	1715.9	*	1	1016	617	266.	0.2	1700.9	*	1	1550	951	36.	0.0	1695.6
1	0443	284	1967.	114.1	1715.9	*	1	1017	618	265.	0.2	1700.9	*	1	1551	952	36.	0.0	1695.6
1	0444	285	1942.	113.4	1715.8	*	1	1018	619	264.	0.2	1700.9	*	1	1552	953	35.	0.0	1695.6
1	0445	286	1917.	112.6	1715.8	*	1	1019	620	264.	0.2	1700.9	*	1	1553	954	35.	0.0	1695.6
1	0446	287	1892.	111.9	1715.8	*	1	1020	621	263.	0.2	1700.9	*	1	1554	955	34.	0.0	1695.5
1	0447	288	1867.	111.2	1715.7	*	1	1021	622	262.	0.2	1700.8	*	1	1555	956	34.	0.0	1695.5
1	0448	289	1842.	110.5	1715.7	*	1	1022	623	262.	0.2	1700.8	*	1	1556	957	33.	0.0	1695.5
1	0449	290	1817.	109.8	1715.7	*	1	1023	624	261.	0.2	1700.8	*	1	1557	958	33.	0.0	1695.5
1	0450	291	1793.	109.1	1715.6	*	1	1024	625	260.	0.2	1700.8	*	1	1558	959	32.	0.0	1695.5
1	0451	292	1768.	108.4	1715.6	*	1	1025	626	259.	0.2	1700.8	*	1	1559	960	32.	0.0	1695.5
1	0452	293	1744.	107.7	1715.5	*	1	1026	627	259.	0.2	1700.8	*	1	1600	961	31.	0.0	1695.5
1	0453	294	1720.	107.0	1715.5	*	1	1027	628	258.	0.2	1700.8	*	1	1601	962	30.	0.0	1695.5
1	0454	295	1713.	106.3	1715.5	*	1	1028	629	257.	0.2	1700.8	*	1	1602	963	30.	0.0	1695.4
1	0455	296	1707.	105.6	1715.4	*	1	1029	630	257.	0.2	1700.7	*	1	1603	964	29.	0.0	1695.4
1	0456	297	1700.	104.9	1715.4	*	1	1030	631	256.	0.2	1700.7	*	1	1604	965	29.	0.0	1695.4
1	0457	298	1694.	104.2	1715.3	*	1	1031	632	256.	0.2	1700.7	*	1	1605	966	28.	0.0	1695.4
1	0458	299	1687.	103.4	1715.3	*	1	1032	633	255.	0.2	1700.7	*	1	1606	967	28.	0.0	1695.4
1	0459	300	1680.	102.7	1715.3	*	1	1033	634	254.	0.2	1700.7	*	1	1607	968	27.	0.0	1695.4
1	0500	301	1673.	101.9	1715.2	*	1	1034	635	254.	0.2	1700.7	*	1	1608	969	27.	0.0	1695.4
1	0501	302	1666.	101.1	1715.2	*	1	1035	636	253.	0.2	1700.7	*	1	1609	970	26.	0.0	1695.3
1	0502	303	1659.	100.3	1715.1	*	1	1036	637	252.	0.2	1700.7	*	1	1610	971	26.	0.0	1695.3
1	0503	304	1652.	99.5	1715.1	*	1	1037	638	252.	0.2	1700.7	*	1	1611	972	25.	0.0	1695.3
1	0504	305	1644.	98.7	1715.0	*	1	1038	639	251.	0.2	1700.6	*	1	1612	973	25.	0.0	1695.3
1	0505	306	1637.	97.8	1715.0	*	1	1039	640	250.	0.2	1700.6	*	1	1613	974	24.	0.0	1695.3
1	0506	307	1629.	97.0	1714.9	*	1	1040	641	250.	0.2	1700.6	*	1	1614	975	24.	0.0	1695.3
1	0507	308	1622.	96.1	1714.9	*	1	1041	642	249.	0.2	1700.6	*	1	1615	976	24.	0.0	1695.3
1	0508	309	1614.	95.3	1714.8	*	1	1042	643	248.	0.2	1700.6	*	1	1616	977	23.	0.0	1695.3
1	0509	310	1606.	94.4	1714.8	*	1	1043	644	248.	0.2	1700.6	*	1	1617	978	23.	0.0	1695.3
1	0510	311	1598.	93.5	1714.7	*	1	1044	645	247.	0.2	1700.6	*	1	1618	979	22.	0.0	1695.2
1	0511	312	1590.	92.6	1714.7	*	1	1045	646	247.	0.2	1700.6	*	1	1619	980	22.	0.0	1695.2
1	0512	313	1582.	91.7	1714.6	*	1	1046	647	246.	0.2	1700.6	*	1	1620	981	21.	0.0	1695.2
1	0513	314	1574.	90.8	1714.6	*	1	1047	648	245.	0.2	1700.5	*	1	1621	982	21.	0.0	1695.2
1	0514	315	1565.	89.8	1714.5	*	1	1048	649	245.	0.1	1700.5	*	1	1622	983	20.	0.0	1695.2
1	0515	316	1557.	88.9	1714.5	*	1	1049	650	244.	0.1	1700.5	*	1	1623	984	20.	0.0	1695.2
1	0516	317	1548.	87.9	1714.4	*	1	1050	651	243.	0.1	1700.5	*	1	1624	985	20.	0.0	1695.2
1	0517	318	1540.	87.0	1714.4	*	1	1051	652	243.	0.1	1700.5	*	1	1625	986	20.	0.0	1695.2
1	0518	319	1531.	86.0	1714.3	*	1	1052	653	242.	0.1	1700.5	*	1	1626	987	19.	0.0	1695.2
1	0519	320	1523.	85.0	1714.2	*	1	1053	654	241.	0.1	1700.5	*	1	1627	988	19.	0.0	1695.2
1	0520	321	1514.	84.1	1714.2	*	1	1054	655	241.	0.1	1700.5	*	1	1628	989	18.	0.0	1695.2
1	0521	322	1505.	83.1	1714.1	*	1	1055	656	240.	0.1	1700.5	*	1	1629	990	18.	0.0	1695.1
1	0522	323	1496.	82.1	1714.1	*	1	1056	657	240.	0.1	1700.4	*	1	1630	991	18.	0.0	1695.1
1	0523	324	1487.	81.1	1714.0	*	1	1057	658	239.	0.1	1700.4	*	1	1631	992	17.	0.0	1695.1
1	0524	325	1479.	80.1	1713.9	*	1	1058	659	238.	0.1	1700.4	*	1	1632	993	17.	0.0	1695.1
1	0525	326	1470.	79.1	1713.8	*	1	1059	660	238.	0.1	1700.4	*	1	1633	994	17.	0.0	1695.1
1	0526	327	1462.	78.1	1713.7	*	1	1100	661	237.	0.1	1700.4	*	1	1634	995	16.	0.0	1695.1
1	0527	328	1454.	77.1	1713.7	*	1	1101	662	237.	0.1	1700.4	*	1	1635	996	16.	0.0	1695.1
1	0528	329	1445.	76.1	1713.6	*	1	1102	663	236.	0.1	1700.4	*	1	1636	997	16.	0.0	1695.1
1	0529	330	1437.	75.1	1713.5	*	1	1103	664	235.	0.1	1700.4	*	1	1637	998	16.	0.0	1695.1
1	0530	331	1428.	74.1	1713.4	*	1	1104	665	235.	0.1	1700.4	*	1	1638	999	16.	0.0	1695.1
1	0531	332	1420.	73.1	1713.3	*	1	1105	666	234.	0.1	1700.3	*	1	16391000		16.	0.0	1695.1
1	0532	333	1412.	72.1	1713.2	*	1	1106	667	233.	0.1	1700.3	*						
1	0533	334	1403.	71.1	1713.1	*	1	1107	668	233.	0.1	1700.3	*						
						*							*						

****

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	16.65-HR
+ (CFS)	(HR)					
		(CFS)				
+ 28173.	2.57		4743.	1899.	1899.	1899.
		(INCHES)	6.185	6.870	6.870	6.870
		(AC-FT)	2352.	2613.	2613.	2613.

```
 PEAK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
                                     6-HR       24-HR       72-HR     16.65-HR
+  (AC-FT)      (HR)
     285.       2.57                109.         41.         41.         41.

  PEAK STAGE    TIME                        MAXIMUM AVERAGE STAGE
                                     6-HR       24-HR       72-HR     16.65-HR
+   (FEET)      (HR)
   1723.13      2.57              1714.64     1705.43     1705.43     1705.43

                        CUMULATIVE AREA =    7.13 SQ MI

1

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

                                                                    RATIOS APPLIED TO FLOWS
 OPERATION        STATION     AREA    PLAN              RATIO 1
                                                          0.50

 HYDROGRAPH AT
+                  C599I      7.13     1   FLOW        29377.
                                           TIME          2.50

 ROUTED TO
+                  C599O      7.13     1   FLOW        28173.
                                           TIME          2.57

                                      ** PEAK STAGES IN FEET **
                                      1   STAGE      1723.13
                                          TIME          2.57


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

```
1*****************************************                    ****************************************
*                                         *                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)     *                    *   U.S. ARMY CORPS OF ENGINEERS       *
*              MAY  1991                  *                    *   HYDROLOGIC ENGINEERING CENTER      *
*            VERSION 4.0.1E               *                    *         609 SECOND STREET            *
*                                         *                    *      DAVIS, CALIFORNIA 95616         *
*  RUN DATE  10/24/96  TIME  09:02:19     *                    *          (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        FOUNTAIN HILLS ADMP
       2           ID        GVSCE Project No. 63                              file: alt54brt.ih1
       3           ID        0.5 PMF Analysis                                  date: 10/23/96 ccc
       4           ID
       5           ID        Alternative No. 5.4:
       6           ID          * Principal Spillway by Option P-1A.
       7           ID          * Construct a separate fuse plug spillway to augment the existing
       8           ID            emergency spillway capacity, and provide conveyance to handle the
       9           ID            0.5 PMF flows without dam crest overtopping.
      10           ID          * Maintain existing crest elevation.
      11           ID
      12           ID       PHASE II MODEL: This model routes the portion of the 0.5 PMF inflow
      13           ID                       hydrograph that assumes a completely collapsed fuse
      14           ID                       plug and corresponding rating curve.  The PHASE I
      15           ID                       MODEL indicated that during the 1 minute time step
      16           ID                       between time 0220 and time 0221, the stage elevation
      17           ID                       in GEPD overtops the fuse plug design collapse height
      18           ID                       of 1718.50 feet.  This model will start at time 0220
      19           ID                       with a starting elevation of 1717.90 feet, to overlap
      20           ID                       the two models and generate a continuous 0.5 PMF
      21           ID                       outflow hydrograph for Alternative 5.4
      22           ID
                   *DIAGRAM
      23           IT       5       0    0220     180
      24           IO       5
      25           IN       5
      26           JR    FLOW     0.5
                   *

      27           KK   C599I
      28           KM        PMF INFLOW TO GEPD (DAM 4)
      29           BA    7.13
      30           QI  37590.  53569.  58754.  55837.  50581.  43769.  36839.  31131.  26527.  22646.
      31           QI  19477.  16714.  14532.  12596.  11016.   9743.   8724.   7991.   7404.   6910.
      32           QI   6514.   6160.   5743.   5250.   4788.   4320.   3861.   3424.   3064.   2792.
      33           QI   2565.   2375.   2209.   2062.   1898.   1733.   1604.   1491.   1399.   1334.
      34           QI   1286.   1246.   1212.   1185.   1167.   1152.   1129.   1103.   1085.   1072.
      35           QI   1060.   1050.   1040.   1032.   1023.   1015.   1007.    999.    991.    984.
      36           QI    977.    969.    961.    952.    944.    935.    927.    919.    912.    906.
      37           QI    900.    894.    888.    880.    873.    865.    857.    848.    838.    827.
      38           QI    814.    801.    785.    766.    744.    709.    673.    642.    618.    597.
      39           QI    580.    565.    552.    544.    536.    529.    522.    515.    509.    502.
      40           QI    496.    490.    483.    477.    471.    464.    457.    450.    442.    434.
      41           QI    426.    418.    410.    402.    394.    382.    363.    337.    311.    288.
      42           QI    268.    253.    239.    228.    219.    211.    205.    200.    196.    192.
      43           QI    188.    183.    179.    174.    170.    166.    162.    159.    155.    152.
      44           QI    148.    145.    142.    139.    136.    133.    131.    128.    125.    123.
      45           QI    120.    118.    115.    113.    111.    108.    106.    103.     98.     90.
      46           QI     82.     77.     72.     67.     62.     56.     51.     47.     42.     39.
      47           QI     35.     32.
                   *

1                                          HEC-1 INPUT                                          PAGE  2

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

```
48          KK   C5990
49          KM      Reservoir route at C599 (GEPD)
50          KM      Principal Spillway: Option P-1A
51          KM      Existing Emergency Spillway Width: 280 feet, Elevation = 1714.86 feet
52          KM      Fuse Plug Emergency Spillway Width: 150 feet, Elevation = 1708.0 feet
53          KM      Dam Crest Elevation:  1721.47 feet
54          RS       1    ELEV  1717.9
55          SV    0.00    0.03    0.47   16.85   31.66   52.71   80.85     107  116.14  136.00
56          SV  156.22  179.00  190.00  200.89  214.00  226.00  239.00  252.10  267.00  281.00
57          SE  1694.7  1700.0 1702.00 1708.00 1710.00 1712.00 1714.00 1715.50 1716.00 1717.00
58          SE  1718.0  1719.0  1719.5  1720.0 1720.50 1721.00 1721.50 1722.00 1722.50 1723.00
59          SQ       0     214     329     947    2328    4932    8142   11063   12349   15526
60          SQ   19507   24173   26690   29327   32076   34933   37907   41271   45293   49805
61          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    27      C599I
                V
                V
    48      C5990

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*************************************                                    *************************************
*                                   *                                    *                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*                                   *   U.S. ARMY CORPS OF ENGINEERS    *
*              MAY   1991           *                                    *   HYDROLOGIC ENGINEERING CENTER   *
*           VERSION 4.0.1E          *                                    *         609 SECOND STREET         *
*                                   *                                    *      DAVIS, CALIFORNIA 95616      *
*  RUN DATE  10/24/96  TIME  09:02:19*                                   *          (916) 551-1748           *
*                                   *                                    *                                   *
*************************************                                    *************************************
```

FOUNTAIN HILLS ADMP
GVSCE Project No. 63 — file: alt54brt.ih1
0.5 PMF Analysis — date: 10/23/96 ccc

Alternative No. 5.4:
* Principal Spillway by Option P-1A.
* Construct a separate fuse plug spillway to augment the existing emergency spillway capacity, and provide conveyance to handle the 0.5 PMF flows without dam crest overtopping.
* Maintain existing crest elevation.

PHASE II MODEL: This model routes the portion of the 0.5 PMF inflow hydrograph that assumes a completely collapsed fuse plug and corresponding rating curve. The PHASE I MODEL indicated that during the 1 minute time step between time 0220 and time 0221, the stage elevation in GEPD overtops the fuse plug design collapse height of 1718.50 feet. This model will start at time 0220 with a starting elevation of 1717.90 feet, to overlap the two models and generate a continuous 0.5 PMF outflow hydrograph for Alternative 5.4

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

    IT          HYDROGRAPH TIME DATA
                       NMIN           5  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0220  STARTING TIME
                         NQ         180  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      1    0  ENDING DATE
                     NDTIME        1715  ENDING TIME
                      ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL    0.08 HOURS
                       TOTAL TIME BASE   14.92 HOURS

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

    JP          MULTI-PLAN OPTION
                      NPLAN           1  NUMBER OF PLANS

    JR          MULTI-RATIO OPTION
                    RATIOS OF RUNOFF
                   0.50
1
              PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
```

FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIO 1	RATIOS APPLIED TO FLOWS
					0.50	
HYDROGRAPH AT						
+	C599I	7.13	1	FLOW	29377.	
				TIME	0.17	
ROUTED TO						
+	C599O	7.13	1	FLOW	28522.	
				TIME	0.25	

** PEAK STAGES IN FEET **

1	STAGE	1719.85
	TIME	0.25

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

Alternative No. 5-4, Phase-II Rating Curve

Storage and Discharge vs Stage Data for Golden Eagle Park Dam (4)

EMERGENCY	SPILLWAY:	Width	280	ft.	Elevation:	1714.5	ft.
PRINCIPAL	SPILLWAY:	New Pipe	12' X 5'	RCB	plus	Existing	
AUXILIARY	SPILLWAY:	Width	150	ft	Bot. Elev.	1708	ft
					Top Elev.	1718.5	ft

Stage (ft)	Discharges: Circular (cfs)	Arch (cfs)	Box Culvert (cfs)	Total (cfs)
1694.51	0	0	0	0
1699.84	139	66	0	205
1703.29	231	130	42	403
1705.35	271	156	206	633
1707.14	301	174	376	851
1709.07	330	192	545	1067
1711.42	363	212	711	1286
1714.30	400	234	874	1508
1715.32	412	241	916	1569
1721.92	482	283	1176	1941
1726.65	524	310	1326	2160
1728.00	534	318	1366	2218

Uneven Weir Output

Stage (ft)	Total Discharge (cfs)
1708.00	0
1708.50	136
1709.00	395
1709.50	744
1710.00	1174
1710.50	1680
1711.00	2260
1711.50	2913
1712.00	3602
1712.50	4305
1713.00	5049
1713.50	5834
1714.00	6657
1714.50	7517
1715.00	8418
1715.50	9484
1716.00	10741
1716.50	12198
1717.00	13862
1717.50	15732
1718.00	17787
1718.50	20022
1719.00	22397
1719.50	24886
1720.00	27494
1720.50	30215
1721.00	33044
1721.50	35990
1722.00	39327
1722.50	43326
1723.00	47814

GVSCE

Stage NGVD 29 Datum	Surface Area (acres)	Storage Volume (acre-feet)	Discharge, in cfs: Principal Spillway	Emergency Spillway	Total
1694.69	0.00	0.00	0	---	0
1696.00	0.00	0.00	57	---	57
1698.00	0.00	0.00	134	---	134
1700.00	0.05	0.03	214	---	214
1702.00	0.45	0.47	329	---	329
1704.00	1.54	2.35	482	---	482
1706.00	3.61	7.35	712	---	712
1708.00	5.99	16.85	947	0	947
1710.00	8.91	31.66	1154	1174	2328
1712.00	12.23	52.71	1330	3602	4932
1714.00	15.99	80.85	1485	6657	8142
1714.50	---	90	1520	7517	9037
1715.00	---	98	1550	8418	9968
1715.50	---	107	1579	9484	11063
1716.00	19.36	116.14	1608	10741	12349
1716.50	---	126	1636	12198	13834
1717.00	---	136	1664	13862	15526
1717.50	---	146	1692	15732	17424
1718.00	20.73	156.22	1720	17787	19507
1718.50	---	167	1748	20022	21770
1719.00	---	179	1776	22397	24173
1719.50	---	190	1804	24886	26690
1720.00	23.97	200.89	1833	27494	29327
1720.50	---	214	1861	30215	32076
1721.00	---	226	1889	33044	34933
1721.50	---	239	1917	35990	37907
1722.00	27.28	252.10	1944	39327	41271
1722.50	---	267	1967	43326	45293
1723.00	---	281	1991	47814	49805
1723.50	---	296	2014	52765	54779
1724.00	31.13	310.47	2037	58134	60171

Alternative No. 5-4, Phase-I Rating Curve
Storage and Discharge vs Stage Data for Golden Eagle Park Dam (4)

EMERGENCY	SPILLWAY:	Width	280	ft.	Elevation:	1714.5	ft
PRINCIPAL	SPILLWAY:	New Pipe	12' x 5'	RCB	plus	Existing Sys.	
AUXILIARY	SPILLWAY:	Width	150	ft	Bot. Elev.	1708	ft
					Top Elev.	1718.5	ft

Stage (ft)	Discharges Circular (cfs)	Arch (cfs)	Box Culvert (cfs)	Total (cfs)
1694.51	0	0	0	0
1699.84	139	66	0	205
1703.29	231	130	42	403
1705.35	271	156	206	633
1707.14	301	174	376	851
1709.07	330	192	545	1067
1711.42	363	212	711	1286
1714.30	400	234	874	1508
1715.32	412	241	916	1569
1721.92	482	283	1176	1941
1726.65	524	310	1326	2160
1728.00	534	318	1366	2218

Uneven Weir Output

Stage (ft)	Total Discharge (cfs)
1714.50	0
1715.00	4
1715.50	140
1716.00	431
1716.50	890
1717.00	1524
1717.50	2332
1718.00	3294
1718.50	4407
1719.00	5765
1719.50	7330
1720.00	9076
1720.50	10987
1721.00	13055
1721.50	15286
1722.00	17954
1722.50	21292
1723.00	25106
1723.50	29372
1724.00	34067

GVSCE

Stage NGVD 29 Datum	Surface Area (acres)	Storage Volume (acre-feet)	Discharge, in cfs Principal Spillway	Emergency Spillway	Total
1694.69	0.00	0.00	0	---	0
1696.00	0.00	0.00	57	---	57
1698.00	0.00	0.00	134	---	134
1700.00	0.05	0.03	214	---	214
1702.00	0.45	0.47	329	---	329
1704.00	1.54	2.35	482	---	482
1706.00	3.61	7.35	712	---	712
1708.00	5.99	16.85	947	---	947
1710.00	8.91	31.66	1154	---	1154
1712.00	12.23	52.71	1330	---	1330
1714.00	15.99	80.85	1485	---	1485
1714.50	---	90	1520	0	1520
1715.00	---	98	1550	4	1554
1715.50	---	107	1579	140	1719
1716.00	19.36	116.14	1608	431	2039
1716.50	---	126	1636	890	2526
1717.00	---	136	1664	1524	3188
1717.50	---	146	1692	2332	4024
1718.00	20.73	156.22	1720	3294	5014
1718.50	---	167	1748	4407	6155
1719.00	---	179	1776	5765	7541
1719.50	---	190	1804	7330	9134
1720.00	23.97	200.89	1833	9076	10909
1720.50	---	214	1861	10987	12848
1721.00	---	226	1889	13055	14944
1721.50	---	239	1917	15286	17203
1722.00	27.28	252.10	1944	17954	19898
1722.50	---	267	1967	21292	23259
1723.00	---	281	1991	25106	27097
1723.50	---	296	2014	29372	31386
1724.00	31.13	310.47	2037	34067	36104

APPENDIX R

Supporting hydraulic calculations and HEC-1 model output for Alternative No. 5.5

```
1*****************************************                    *****************************************
 *                                       *                    *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                    *   U.S. ARMY CORPS OF ENGINEERS        *
 *              MAY   1991               *                    *   HYDROLOGIC ENGINEERING CENTER       *
 *            VERSION 4.0.1E             *                    *         609 SECOND STREET             *
 *                                       *                    *      DAVIS, CALIFORNIA 95616          *
 *  RUN DATE  10/24/96  TIME  09:03:25   *                    *          (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        FOUNTAIN HILLS ADMP
            2           ID        GVSCE Project No. 63                                  file: alt55-rt.ih1
            3           ID        0.5 PMF Analysis                                      date: 10/23/96 ccc
            4           ID
            5           ID        Alternative No. 5.5:
            6           ID          * Principal Spillway by Option P-1A.
            7           ID          * Armor the entire dam crest, downstream slope and toe, and
            8           ID            existing emergency spillway with roller compacted concrete (RCC)
            9           ID          * Maintain existing crest elevation.
           10           ID
                        *DIAGRAM
           11           IT       5       0       0     200
           12           IO       5
           13           IN       5
           14           JR    FLOW     0.5
                        *

           15           KK   C599I
           16           KM        PMF INFLOW TO GEPD (DAM 4)
           17           BA    7.13
           18           QI   2557.   2391.   2090.   1839.   1635.   1501.   1401.   1319.   1252.   1196.
           19           QI   1155.   1127.   1109.   1101.   1113.   1134.   1144.   1151.   1158.   1172.
           20           QI   1192.   1214.   1239.   1267.   1298.   2898.   9000.  20735.  37590.  53569.
           21           QI  58754.  55837.  50581.  43769.  36839.  31131.  26527.  22646.  19477.  16714.
           22           QI  14532.  12596.  11016.   9743.   8724.   7991.   7404.   6910.   6514.   6160.
           23           QI   5743.   5250.   4788.   4320.   3861.   3424.   3064.   2792.   2565.   2375.
           24           QI   2209.   2062.   1898.   1733.   1604.   1491.   1399.   1334.   1286.   1246.
           25           QI   1212.   1185.   1167.   1152.   1129.   1103.   1085.   1072.   1060.   1050.
           26           QI   1040.   1032.   1023.   1015.   1007.    999.    991.    984.    977.    969.
           27           QI    961.    952.    944.    935.    927.    919.    912.    906.    900.    894.
           28           QI    888.    880.    873.    865.    857.    848.    838.    827.    814.    801.
           29           QI    785.    766.    744.    709.    673.    642.    618.    597.    580.    565.
           30           QI    552.    544.    536.    529.    522.    515.    509.    502.    496.    490.
           31           QI    483.    477.    471.    464.    457.    450.    442.    434.    426.    418.
           32           QI    410.    402.    394.    382.    363.    337.    311.    288.    268.    253.
           33           QI    239.    228.    219.    211.    205.    200.    196.    192.    188.    183.
           34           QI    179.    174.    170.    166.    162.    159.    155.    152.    148.    145.
           35           QI    142.    139.    136.    133.    131.    128.    125.    123.    120.    118.
           36           QI    115.    113.    111.    108.    106.    103.     98.     90.     82.     77.
           37           QI     72.     67.     62.     56.     51.     47.     42.     39.     35.     32.
                        *

           38           KK   C599O
           39           KM      Reservoir route at C599 (GEPD)
           40           KM      Principal Spillway: Option P-1A
           41           KM      Primary Emergency Spillway Width: 280 feet, Elevation = 1714.86 feet
           42           KM      Dam Crest Elevation:  1721.47 feet
           43           RS       1    ELEV 1714.86
           44           SV    0.00    0.03    0.47   16.85   80.85     107  116.14  136.00  156.22  179.00
           45           SV  190.00  200.89  214.00  226.00  239.00  252.10  267.00  281.00  296.00  310.47
           46           SE  1694.7  1700.0 1702.00 1708.00 1714.00 1715.50 1716.00 1717.00 1718.00 1719.00
           47           SE  1719.5  1720.0 1720.50 1721.00 1721.50 1722.00 1722.50 1723.00 1723.50 1724.00
           48           SQ       0     214     329     947    1485    1950    2516    4134    6353    9045
           49           SQ   10476   12000   13612   15312   17099   19612   22779   26467   30636   35264
           50           ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

```
   15       C599I
                V
                V
   38       C599O

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              MAY   1991              *
 *           VERSION 4.0.1E             *
 *                                      *
 *  RUN DATE  10/24/96  TIME  09:03:25  *
 *                                      *
 ****************************************

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

FOUNTAIN HILLS ADMP
GVSCE Project No. 63 — file: alt55-rt.ih1
0.5 PMF Analysis — date: 10/23/96 ccc

Alternative No. 5.5:
- Principal Spillway by Option P-1A.
- Armor the entire dam crest, downstream slope and toe, and existing emergency spillway with roller compacted concrete (RCC)
- Maintain existing crest elevation.

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

     IT          HYDROGRAPH TIME DATA
                        NMIN          5  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1    0  STARTING DATE
                       ITIME       0000  STARTING TIME
                          NQ        200  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      1    0  ENDING DATE
                      NDTIME       1635  ENDING TIME
                      ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL    0.08 HOURS
                       TOTAL TIME BASE   16.58 HOURS

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

     JP          MULTI-PLAN OPTION
                      NPLAN          1  NUMBER OF PLANS

     JR          MULTI-RATIO OPTION
                     RATIOS OF RUNOFF
                    0.50
1

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


                                                          RATIOS APPLIED TO FLOWS
 OPERATION       STATION     AREA    PLAN            RATIO 1
                                                        0.50

 HYDROGRAPH AT
+                 C599I      7.13     1   FLOW       29377.
                                           TIME        2.50

 ROUTED TO
+                 C599O      7.13     1   FLOW       28579.
                                           TIME        2.58

                                      ** PEAK STAGES IN FEET **
                                      1   STAGE     1723.25
                                           TIME        2.58


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

Alternative No. 5-5

Storage and Discharge vs Stage Data for Golden Eagle Park Dam (4)

EMERGENCY	SPILLWAY:	Width	280	ft.	Elevation:	1714.5	ft.
PRINCIPAL	SPILLWAY:	New Pipe	12' X 5'	RCB	plus	Existing	

HY8 Output

Stage (ft)	Discharges Circular (cfs)	Arch (cfs)	Box Culvert (cfs)	Total (cfs)
1694.51	0	0	0	0
1699.84	139	66	0	205
1703.29	231	130	42	403
1705.35	271	156	206	633
1707.14	301	174	376	851
1709.07	330	192	545	1067
1711.42	363	212	711	1286
1714.30	400	234	874	1508
1715.32	412	241	916	1569
1721.92	482	283	1176	1941
1726.65	524	310	1326	2160
1728.00	534	318	1366	2218

Uneven Weir Output

Stage (ft)	Discharge (cfs)
1714.50	0
1715.00	273
1715.50	796
1716.00	1506
1716.50	2385
1717.00	3426
1717.50	4626
1718.00	5984
1718.50	7426
1719.00	8910
1719.50	10494
1720.00	12176
1720.50	13953
1721.00	15824
1721.50	18043
1722.00	21040
1722.50	24593
1723.00	28628
1723.50	33114
1724.00	38036

GVSCE

Stage NGVD 29 Datum	Surface Area (acres)	Storage Volume (acre-feet)	Discharge, in cfs Principal Spillway	Emergency Spillway	Total
1694.69	0.00	0.00	0	---	0
1696.00	0.00	0.00	57	---	57
1698.00	0.00	0.00	134	---	134
1700.00	0.05	0.03	214	---	214
1702.00	0.45	0.47	329	---	329
1704.00	1.54	2.35	482	---	482
1706.00	3.61	7.35	712	---	712
1708.00	5.99	16.85	947	---	947
1710.00	8.91	31.66	1154	---	1154
1712.00	12.23	52.71	1330	---	1330
1714.00	15.99	80.85	1485	---	1485
1714.50	---	90	1520	0	1520
1715.00	---	98	1550	273	1823
1715.50	---	107	1579	796	2375
1716.00	19.36	116.14	1608	1506	3114
1716.50	---	126	1636	2385	4021
1717.00	---	136	1664	3426	5090
1717.50	---	146	1692	4626	6318
1718.00	20.73	156.22	1720	5984	7704
1718.50	---	167	1748	7426	9174
1719.00	---	179	1776	8910	10686
1719.50	---	190	1804	10494	12298
1720.00	23.97	200.89	1833	12176	14009
1720.50	---	214	1861	13953	15814
1721.00	---	226	1889	15824	17713
1721.50	---	239	1917	18043	19960
1722.00	27.28	252.10	1944	21040	22984
1722.50	---	267	1967	24593	26560
1723.00	---	281	1991	28628	30619
1723.50	---	296	2014	33114	35128
1724.00	31.13	310.47	2037	38036	40073

APPENDIX S

Itemized reconnaissance level cost estimates for proposed alternatives

ALTERNATIVE NO. 2

Estimated costs for removal of GEPD

ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
COMPONENTS				
(a) Demolition				
- Embankment	CY	32,500	$2.00	$65,000
- Low-Level Outlet Work	LS	1	$10,000.00	$10,000
- Emergency Spillway	LS	1	$5,000.00	$5,000
(b) Hauling/Disposal				
- Earthfill Materials	CY	32,500	$2.00	$65,000
- Concrete	LS	1	$2,500.00	$2,500
(c) Sanitary Sewer Relocation	LS	1	$60,000.00	$60,000
(d) Finish Grading and Landscaping	LS	1	$10,000.00	$10,000
SUBTOTAL COST				$217,500
25% Contignency				$56,550
TOTAL COST				$274,050

Appendix S

ALTERNATIVE NO. 3

Estimated costs for modification of Aspen, North Heights, and SunRidge Canyon Dams

DAM NAME (No)	ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
ASPEN (No. 6)	**COMPONENTS**				
	(a) Earthwork (Controlled)	CY	105,600	$18.50	$1,953,600
	(b) Emergency Spillway				
	- Removal/disposal of old spillway	SF	45,000	$2.20	$99,000
	- New Spillway (100-ft wide)	SF	18,000	$1.70	$30,600
	(c) Low-Level Outlet Work				
	- 15" Diam. Orifice Plate	EACH	1	$2,000.00	$2,000
	- 48" Diam. RCP Extension	FT	90	$100.00	$9,000
	- Removal/disposal of old apron	CY	25	$300.00	$7,500
	- New apron/stilling basin	CY	25	$440.00	$11,000
	SUBTOTAL COST				$528,175
					$2,640,875
	25% Contingency				$660,219
	TOTAL COST				$3,301,094
NORTH HEIGHT (No. 11)	**COMPONENTS**				
	(a) Earthwork (Controlled)	CY	297,350	$18.50	$5,500,975
	(b) Emergency Spillway				
	- Removal/disposal of old spillway	SF	45,000	$2.20	$99,000
	- New Spillway (100-ft wide)	SF	22,000	$1.70	$37,400
	(c) Low-Level Outlet Work				
	- 15" Diam. Orifice Plate	EACH	1	$2,000.00	$2,000
	- 48" Diam. RCP Extension	FT	140	$100.00	$14,000
	- Removal/disposal of old apron	CY	25	$300.00	$7,500
	- New apron/stilling basin	CY	25	$440.00	$11,000
	SUBTOTAL COST				$5,671,875
	25% Contingency				$1,417,969
	TOTAL COST				$7,089,844
SUNRIDGE CANYON (No. 7)	**COMPONENTS**				
	(a) Earthwork (Controlled)				
	- Dam Improvement	CY	51,350	$18.50	$949,975
	- Dikes	CY	3,020	$18.50	$55,870
	(b) Emergency Spillway				
	- Removal/disposal of old spillway	SF	40,500	$2.20	$89,100
	- New Spillway (220-ft wide)	SF	42,750	$1.70	$72,675
	(c) Low-Level Outlet Work				
	- 32" Diam. Orifice Plate	EACH	1	$3,000.00	$3,000
	- 48" Diam. RCP Extension	FT	40	$100.00	$4,000
	- Removal/disposal of old apron	CY	25	$300.00	$7,500
	- New apron/stilling basin	CY	25	$440.00	$11,000
	SUBTOTAL COST				$1,193,120
	25% Contingency				$298,280
	TOTAL COST				$1,491,400
OVERALL TOTAL COST					$11,882,338

Appendix S

ALTERNATIVE NO. 4

Estimated costs for construction of new dam along Golden Eagle Boulevard

ITEM/DESCRIPTION	TOTAL COST (US $)
COMPONENTS	
(a) Dam Site Exploration (1)	20,000
(b) Foundation Excavation and Treatment (2)	40,000
(c) Low-Level Outlet Work, Trashrack, Energy Dissipator (3)	110,000
(d) Emergency Spillway (4)	60,000
(e) Earthfill Embankment (5)	7,500,000
SUBTOTAL COST	7,730,000
25% Contignecy	1,932,500
TOTAL COST	9,662,500

NOTE: (1) Site exploration includes drilling (i.e., test pit excavation), soil sampling, laboratory testing, analysis, and report preparation.

(2) Excavation and treatment of foundation include works to meet design requirements for embankment stability and seepage purposes.

(3) The work includes installation of one 72-inch RCP, provision of headwall, trashrack, apron, and energy dissipator.

(4) Work includes placement of the 30-ft emergency spillway with associated bank and bed protection.

(5) Material cost including hauling, spreading, and compaction of select structural fill. Unit cost is $ 18.50. Total estimated embankment volume is 390,000 CY.

Appendix S

OPTION P-1A (Box Culvert)

ESTIMATED CONSTRUCTION COSTS FOR ALTERNATIVE COMPARISONS
MODIFICATION OF PRINCIPAL SPILLWAY, GOLDEN EAGLE PARK DAM

ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
COMPONENTS				
(a) Low-Level Outlet Work (1-12' x 5' x 95' RCB)				
- Trenching	CY	700	$4.00	$2,800
- RCB Construction and Materials	FT	95	$750.00	$71,250
- Seepage Collars	EACH	2	$500.00	$1,000
- Backfill and Compaction	CY	550	$3.00	$1,650
- Inlet Structure	EACH	1	$5,000.00	$5,000
- Outlet Structure (Headwall & Energy Dissipator)	EACH	1	$45,000.00	$45,000
SUB TOTAL				$126,700
(b) 25% Contingency				$31,675
B. TOTAL COST				$158,375

OPTION P-1B (Pipe Culvert)

ESTIMATED CONSTRUCTION COSTS FOR ALTERNATIVE COMPARISONS
MODIFICATION OF PRINCIPAL SPILLWAY, GOLDEN EAGLE PARK DAM

ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
COMPONENTS				
(a) Low-Level Outlet Work (1-108" x 95' RCP)				
- Trenching	CY	700	$4.00	$2,800
- 108" RCP Culvert	FT	95	$380.00	$36,100
- Seepage Collars	EACH	2	$500.00	$1,000
- Backfill and Compaction	CY	550	$3.00	$1,650
- Inlet Structure	EACH	1	$5,000.00	$5,000
- Outlet Structure (Headwall & Energy Dissipator)	EACH	1	$35,000.00	$35,000
SUB TOTAL				$81,550
(b) 25% Contingency				$20,388
TOTAL COST				$101,938

Apperdix S

OPTION P-2A (Box Culvert)

ESTIMATED CONSTRUCTION COSTS FOR ALTERNATIVE COMPARISONS
MODIFICATION OF PRINCIPAL SPILLWAY, GOLDEN EAGLE PARK DAM

ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
COMPONENTS				
(a) Low-Level Outlet Work (1-7' x 6' x 105.5' RCB)				
- Trenching	CY	2,200	$4.00	$8,800
- RCB Construction and Materials	FT	105.5	$600.00	$63,300
- Seepage Collars	EACH	2.0	$500.00	$1,000
- Backfill and Compaction	CY	2,000	$3.00	$6,000
- Inlet Structure (Headwall + Trashrack)	EACH	1	$5,000.00	$5,000
- Outlet Structure (Headwall & Apron)	EACH	1	$25,000.00	$25,000
SUB TOTAL				$109,100
(b) 25% Contingency				$27,275
TOTAL COST				$136,375

OPTION P-2B (Pipe Culvert)

ESTIMATED CONSTRUCTION COSTS FOR ALTERNATIVE COMPARISONS
MODIFICATION OF PRINCIPAL SPILLWAY, GOLDEN EAGLE PARK DAM

ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
COMPONENTS				
(a) Low-Level Outlet Work (1-90" x 105.5' RCP)				
- Trenching	CY	2,200	$4.00	$8,800
- 90" RCP Culvert	FT	105.5	$325.00	$34,288
- Seepage Collars	EACH	2.0	$500.00	$1,000
- Backfill and Compaction	CY	2,000	$3.00	$6,000
- Inlet Structure (Headwall + Trashrack)	EACH	1	$5,000.00	$5,000
- Outlet Structure (Headwall & Apron)	EACH	1	$25,000.00	$25,000
SUB TOTAL				$80,088
(b) 25% Contingency				$20,022
TOTAL COST				$100,109

Appendix S

OPTION P-3A (Box Culvert)

ESTIMATED CONSTRUCTION COSTS FOR ALTERNATIVE COMPARISONS
MODIFICATION OF PRINCIPAL SPILLWAY, GOLDEN EAGLE PARK DAM

ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
COMPONENTS				
(a) Removal of Existing Structures				
- Removal (Sewer Line and Manholes)	LS	1	$8,000.00	$8,000
- Removal of Headwalls (Inlet & Outlet)	LS	1	$5,000.00	$5,000
- Pipe Culverts (two-60-inch RCP)	FT	211	$20.00	$4,220
(b) Low-Level Outlet Work (1-10' x 8' x 105.5' RCB)				
- Trenching	CY	2,200	$4.00	$8,800
- RCB Construction and Materials	FT	105.5	$800.00	$84,400
- Backfill and Compaction	CY	2,000	$3.00	$6,000
- Inlet Structure (Head Wall)	LS	1	$5,000.00	$5,000
- Outlet Structure (Headwall and Apron)	LS	1	$20,000.00	$20,000
(c) Relocation/reallignment of Sewer Line				
- Trenching (Additional to Low Level Outlet Work)	CY	180	$4.00	$720
- Sewer Line (24-inch DIP)	FT	205	$200.00	$41,000
- Sanitary Sewer Manhole	EACH	2	$3,000.00	$6,000
- Concrete Pipe Collar, 24-inch	FT	4	$500.00	$2,000
SUB TOTAL				$191,140
(b) 25% Contingency				$47,785
TOTAL COST				$238,925

Apperdix S

OPTION P-3B (Pipe Culvert)

ESTIMATED CONSTRUCTION COSTS FOR ALTERNATIVE COMPARISONS
MODIFICATION OF PRINCIPAL SPILLWAY, GOLDEN EAGLE PARK DAM

ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
COMPONENTS				
(a) Removal of Existing Structures				
- Removal (Sewer Line and Manholes)	LS	1	$8,000.00	$8,000
- Removal of Headwalls (Inlet & Outlet)	LS	1	$5,000.00	$5,000
- Pipe Culverts (two-60-inch RCP)	FT	211	$20.00	$4,220
(b) Low-Level Outlet Work (1-120" x 105.5' RCP)				
- Trenching	CY	2,200	$4.00	$8,800
- 120" RCP Culvert	FT	105.5	$450.00	$47,475
- Backfill and Compaction	CY	2,000	$3.00	$6,000
- Inlet Structure (Head Wall)	LS	1	$5,000.00	$5,000
- Outlet Structure (Headwall and Apron)	LS	1	$20,000.00	$20,000
(c) Relocation/reallignment of Sewer Line				
- Trenching (Additional to Low Level Outlet Work)	CY	180	$4.00	$720
- Sewer Line (24-inch DIP)	FT	205	$200.00	$41,000
- Sanitary Sewer Manhole	EACH	2	$3,000.00	$6,000
- Concrete Pipe Collar, 24-inch	FT	4	$500.00	$2,000
SUB TOTAL				$154,215
(b) 25% Contingency				$38,554
TOTAL COST				$192,769

Appendix S

ALTERNATIVE 5.1

Cost estimate for principal and emergency spillway modification of GEPD

ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
COMPONENTS				
(a) Earthwork (Controlled)	CY	20,110	$18.50	$372,035
(b) Emergency Spillway Protection	SF	10,000	$2.00	$20,000
(c) Low-Level Outlet Work (1-12' x 5' x 95' RCB)				
- Trenching	CY	700	$4.00	$2,800
- RCB Construction and Materials	FT	95	$750.00	$71,250
- Seepage Collars	EACH	2	$500.00	$1,000
- Backfill and Compaction	CY	550	$3.00	$1,650
- Inlet Structure	EACH	1	$5,000.00	$5,000
- Outlet Structure (Headwall & Energy Dissipator)	EACH	1	$45,000.00	$45,000
- Exist. Culvert (Size: 60-inch RCP) Extension	FT	50	$150.00	$7,500
- Trashrack (12-inch logs)	EACH	1	$5,000.00	$5,000
SUBTOTAL COST				$531,235
(d) Contingency (25%)				$132,809
TOTAL COST				$664,044

Appendix 5

ALTERNATIVE 5.2

Cost estimate for principal and emergency spillway modification of GEPD

ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
COMPONENTS				
(a) Earthwork (Cut)	CY	1,700	$7.00	$11,900
(b) Emergency Spillway Protection	SF	42,000	$1.70	$71,400
(c) Low-Level Outlet Work (1-12' x 5' x 95' RCB)				
- Trenching	CY	700	$4.00	$2,800
- RCB Construction and Materials	FT	95	$750.00	$71,250
- Seepage Collars	EACH	2	$500.00	$1,000
- Backfill and Compaction	CY	550	$3.00	$1,650
- Inlet Structure	EACH	1	$5,000.00	$5,000
- Outlet Structure (Headwall & Energy Dissipator)	EACH	1	$45,000.00	$45,000
SUBTOTAL COST				$210,000
(d) Contingency (25%)				$52,500
TOTAL COST				$262,500

Appendix S

ALTERNATIVE 5.3

Cost estimate for principal and emergency spillway modification of GEPD

ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
COMPONENTS				
(a) Earthwork (Cut)	CY	1,750	$7.00	$12,250
(b) Emergency Spillway Protection	SF	70,750	$1.70	$120,275
(c) Low-Level Outlet Work (1-12' x 5' x 95' RCB)				
- Trenching	CY	700	$4.00	$2,800
- RCB Construction and Materials	FT	95	$750.00	$71,250
- Seepage Collars	EACH	2	$500.00	$1,000
- Backfill and Compaction	CY	550	$3.00	$1,650
- Inlet Structure	EACH	1	$5,000.00	$5,000
- Outlet Structure (Headwall & Energy Dissipator)	EACH	1	$45,000.00	$45,000
SUBTOTAL COST				$259,225
(d) Contingency (25%)				$64,806
TOTAL COST				$324,031

Appendix S

ALTERNATIVE 5.4

Cost estimate for principal and emergency spillway modification of GEPD

ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
COMPONENTS				
(a) Fuse-Plug Emergency Spillway				
- Concrete Sill and Wall	LS	1	$35,000.00	$35,000
- Earthwork (Cut and Fill) with Compaction	CY	5,040	$18.00	$90,720
(c) Low-Level Outlet Work (1-12' x 5' x 95' RCB)				
- Trenching	CY	700	$4.00	$2,800
- RCB Construction and Materials	FT	95	$750.00	$71,250
- Seepage Collars	EACH	2	$500.00	$1,000
- Backfill and Compaction	CY	550	$3.00	$1,650
- Inlet Structure	EACH	1	$5,000.00	$5,000
- Outlet Structure (Headwall & Energy Dissipator	EACH	1	$45,000.00	$45,000
SUBTOTAL COST				$252,420
(d) Contingency (25%)				$63,105
TOTAL COST				$315,525

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ALTERNATIVE 5.5

Cost estimate for principal and emergency spillway modification of GEPD

ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
COMPONENTS				
(a) Roller-Compacted Concrete (RCC)	CY	11,050	$50.00	$552,500
(c) Low-Level Outlet Work (1-12' x 5' x 95' RCB)				
- Trenching	CY	700	$4.00	$2,800
- RCB Construction and Materials	FT	95	$750.00	$71,250
- Seepage Collars	EACH	2	$500.00	$1,000
- Backfill and Compaction	CY	550	$3.00	$1,650
- Inlet Structure	EACH	1	$5,000.00	$5,000
- Outlet Structure (Headwall & Energy Dissipator	EACH	1	$45,000.00	$45,000
SUBTOTAL COST				$679,200
(d) Contingency (25%)				$169,800
TOTAL COST				$849,000

Appendix 5