LAVEEN AREA MASTER DRAINAGE STUDY
PHASE I
HYDRAULIC REPORT

Prepared for:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
3335 West Durango
Phoenix, Arizona 85009

Prepared by:

CELLA BARR ASSOCIATES

5062 North 19th Avenue
Phoenix, Arizona 85015

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PHASE I

HYDRAULIC REPORT

Contract No. FCD 89-70
CBA File No. 240916-02-0303

Prepared for:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
2801 West Durango
Phoenix, Arizona 85009

Prepared By:
Cella Barr Associates
5062 North 19th Avenue
Phoenix, Arizona 85015

June 1992

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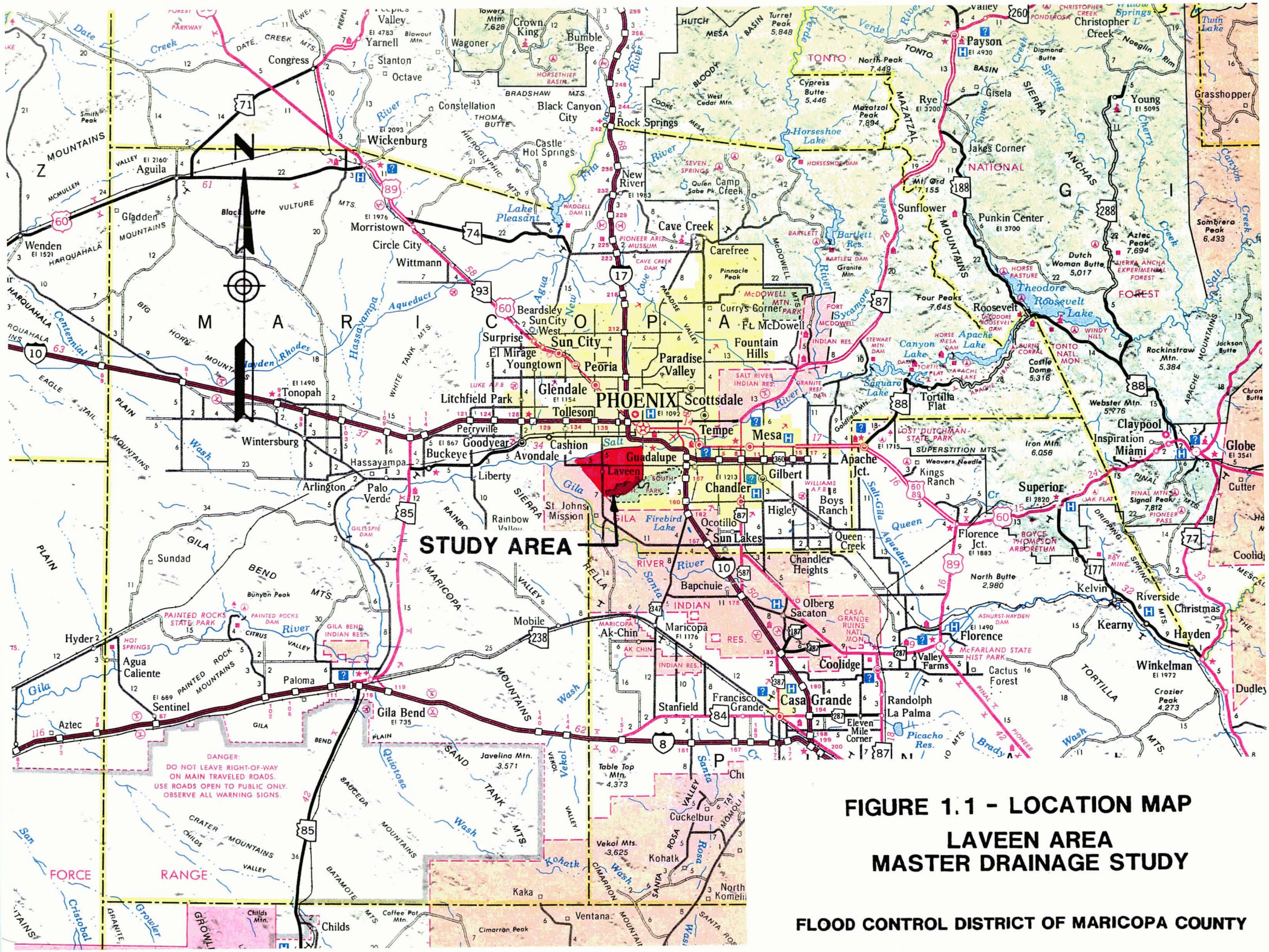
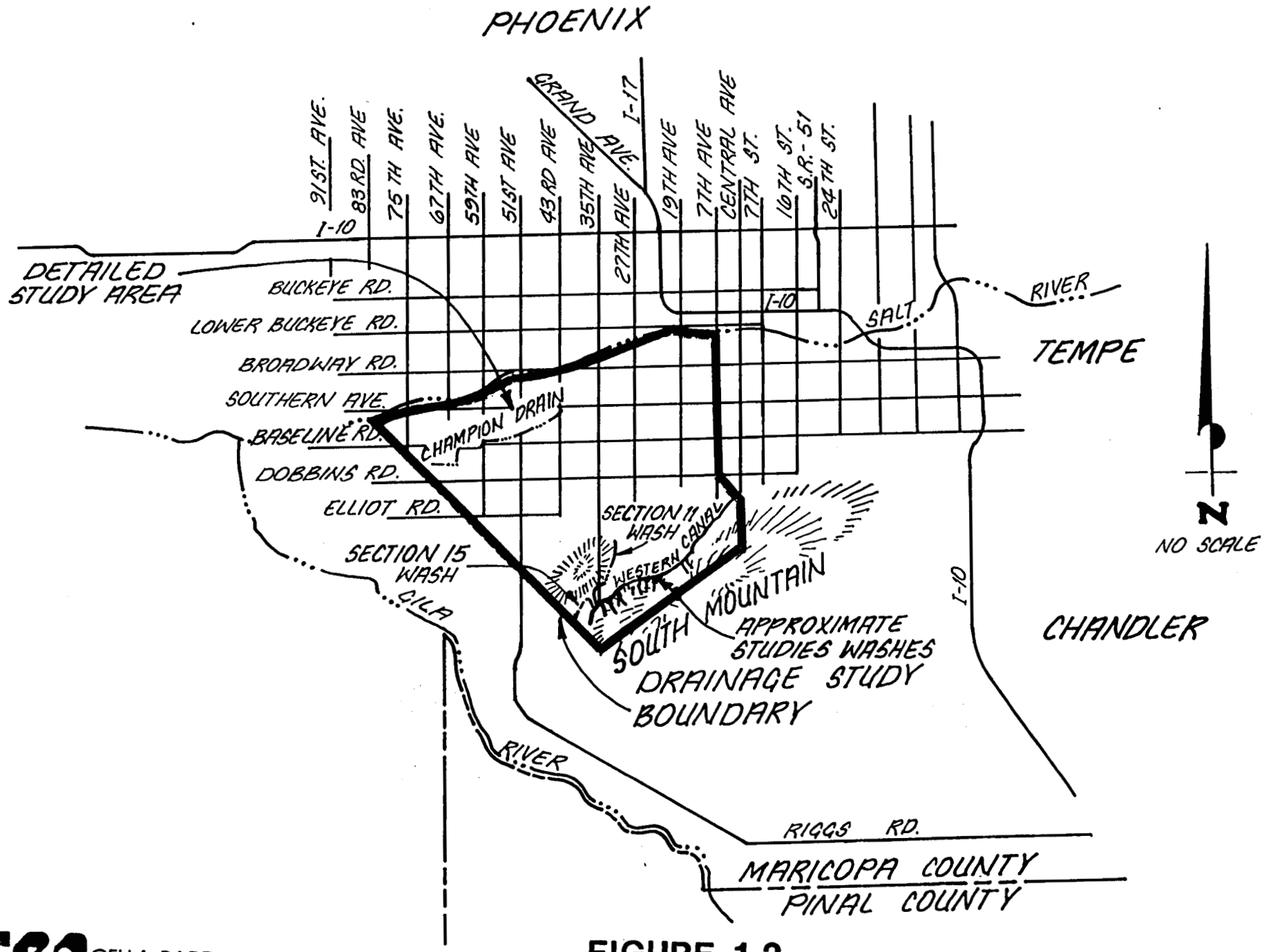
INTRODUCTION

Purpose of Study

Cella Barr Associates (CBA) has been contracted by the Flood Control District of Maricopa County (the District) to prepare an Area Drainage Master Study (ADMS) for stormwater management in the Laveen area of unincorporated Maricopa County. The study area covers a portion of the Flood Control District Watershed No. 26 and is roughly bounded on the north by the Salt River, on the east by Central Avenue, on the south by the South Mountains; and on the west by the Gila River Indian Reservation (Figures 1.1 and 1.2). The Laveen ADMS watershed area is approximately 39 square miles and located in unincorporated Maricopa County and the City of Phoenix, Arizona.

As a part of the Laveen ADMS, the District required delineation of 100-year floodplain boundaries, flood profiles and base flood elevations for the Champion Drain from 43rd Avenue to the Salt River by detailed methods using the guideline established in the Federal Emergency Management Agency's (FEMA), "Flood Insurance Study Guidelines and Specifications for Study Contractors", dated March 1991. Selected areas at the foothills of the South Mountains required 100-year floodplain delineation by approximate methods. No previous FEMA floodplain studies of the selected waterways within the Laveen ADMS boundaries have been performed.


STUDY AREA
PHOENIX
Scottsdale
Tempe
Mesa
Chandler
Gilbert
Glendale
Peoria
Sun City
Surprise
El Mirage
Youngtown
Litchfield Park
Tolleson
Goodyear
Avondale
Buckeye
Wickenburg
Morristown
Wittmann
Congress
Yarnell
Aguila
Wenden
Tonopah
Wintersburg
Arlington
Palo Verde
Hassayampa
Liberty
Laveen
Guadalupe
Ocotillo
Sun Lakes
Queen Creek
Higley
Apache Jct.
Superior
Florence Jct.
Florence
Coolidge
Casa Grande
Maricopa
Ak-Chin
Stanfield
Eleven Mile Corner
Randolph
La Palma
Gila Bend
Sentinel
Paloma
Aztec
Hyder
Agua Caliente
Mobile
Sundad
Cave Creek
Carefree
Fountain Hills
Paradise Valley
Rock Springs
New River
Black Canyon City
Castle Hot Springs
Constellation
Payson
Rye
Gisela
Jakes Corner
Punkin Center
Roosevelt
Sunflower
Tortilla Flat
Claypool
Miami
Globe
Inspiration
Kelvin
Riverside
Christmas
Kearny
Hayden
Winkelman
Dudley
Cutter
Coolidge
Cuckelbur
Kohatk
Kaka
Ventana
Childs
Cactus Forest
Valley Farms
Picacho Res.
Lake Pleasant
Horseshoe Lake
Bartlett Res.
Roosevelt Lake
Apache Lake
Canyon Lake
Saguaro Lake
Theodore Roosevelt Dam
Gillespie Dam
Painted Rocks Dam
Ashurst-Hayden Dam
Cave Creek Dam
Waddell Dam
Granite Reef Dam
Stewart Mtn. Dam
Horseshoe Dam
Bartlett Dam
Tortilla Flat Dam
Apache Mesa Dam
Pioneer Ariz. Museum
Fort McDowell Indian Res.
Salt River Indian Res.
Gila River Indian Res.
Maricopa Indian Res.
Ak Chin Indian Res.
Gila Bend Indian Res.
Painted Rocks State Park
Lost Dutchman State Park
Superstition Mts.
Weavers Needle
Boyce Thompson Arboretum
Casa Grande Ruins Nat. Mon.
McFarland State Hist. Park
Tonto Nat. Mon.
Tonto National Forest
Sierra Ancha Experimental Forest
Pinal Mtns.
Signal Peak 7,812
Pioneer Pass
Oak Flat
Dripping Spring
Ray Mine
Superior
Iron Mtn. 6,056
Webster Mtn. 5,776
Rockinstraw Mtn. 5,384
Castle Dome 5,316
Dutch Woman Butte 5,017
Aztec Peak 7,694
Four Peaks 7,645
Mt Ord 7,155
Mazatzal Peak 7,894
North Peak 7,449
Cypress Butte 5,446
West Cedar Mtn.
Turret Peak 5,848
Towers Mtn. 7,628
Crown King
Bumble Bee
Wagoner
Stanton
Octave
Christopher Creek
Grasshopper
Young
Sombrero Peak 6,433
Crozier Peak 4,273
Winkelman
Table Top Mtn. 4,373
Vekol Mts. 3,625
Javelina Mtn. 3,571
Coffee Pot Mtn.
Cimarron Peak
North Butte 2,980
Bunyan Peak
Signal Peak
Gila Bend
Quitobaquito
Sand Tank Mts.
Batamote Mts.
Growler Mts.
Cristobal Valley
Crater Mts.
Childs Mtn.
Vekol Valley
Santa Rosa Valley
Cimarron Mts.
Santa Rosa Mts.
Tortilla Mts.
Superstition Mts.
Pinal Mts.
Mazatzal Mts.
Sierra Ancha Mts.
Apache Mts.
Hassayampa Aqueduct
Salt-Gila Aqueduct
Queen Creek Aqueduct
Salt River
Gila River
Verde River
Agua Fria River
Cave Creek
Date Creek
Tonto Creek
Spring Cr.
Cherry Cr.
Canyon Creek
Salt Cr.
Queen Cr.
Santa Rosa Wash
Vekol Wash
Kohatk Wash
Cimarron Wash
Brady Wash
Pinal Cr.
Pioneer Wash
Gila Bend Wash
Sand Tank Wash
Quitobaquito Wash
Tortilla Wash
Gila Bend Plain
Gila Bend Mts.
Maricopa Mts.
Painted Rock Mts.
Gila Bend Valley
Vulture Mts.
Hieroglyphic Mts.
Bradshaw Mts.
Date Creek Mts.
Wickenburg Mts.
Harquahala Mts.
Big Horn Mts.
White Tank Mts.
Eagle Tail Mts.
Plain Mts.
Sierra Ranchas
Mazatzal Mts.
Tonto Basin
Tonto National Forest
Sierra Ancha Experimental Forest
Apache Mts.
Jackson Butte
Chron Butte
Twin Lake
Smith Peak
Gladden Mts.
Black Butte
Centennial Mts.
Rhodes Mts.
Hayden Mts.
Bradshaw Mts.
Hieroglyphic Mts.
Thoma Butte
Blowout Mtn.
Horseshoe Dam
Bartlett Dam
Granite Mtn.
Pinnacle Peak
Camp Creek
Seven Springs
Quien Sabe Pk.
Cave Creek Dam
Waddell Dam
Gillespie Dam
Painted Rocks Dam
Ashurst-Hayden Dam
Granite Reef Dam
Stewart Mtn. Dam
Tortilla Flat Dam
Apache Mesa Dam
Theodore Roosevelt Dam
Lake Pleasant
Horseshoe Lake
Bartlett Res.
Roosevelt Lake
Apache Lake
Canyon Lake
Saguaro Lake
Firebird Lake
Picacho Res.
Casa Grande Ruins Nat. Mon.
Boyce Thompson Arboretum
McFarland State Hist. Park
Lost Dutchman State Park
Superstition Mts.
Weavers Needle
Tonto Nat. Mon.



CELLA BARR ASSOCIATES

FIGURE 1.2
VICINITY MAP

AREA STUDIED

Scope of Study

Flooding associated with the Champion Drain area was studied from the Salt River (roughly 83rd Avenue) to 43rd Avenue, indicated on Vicinity Map, Figure 1.2, using detailed methods. The Champion Drain is located within a natural, topographically depressed area of the watershed and is a man-made channel that intercepts and conveys a combination of agricultural tailwater and minor amounts of stormwater runoff to the Salt River. The Champion Drain channel varies in width and depth from approximately ten- to fifteen-feet wide and five- to seven-feet deep with elevated maintenance roads, and has an average slope of 0.15 percent. As the channel usually conveys agricultural tailwaters, a base flow generally exists and there is relatively no capacity remaining for conveyance of stormwater runoff. In fact, the Champion Drain's primary purpose is for agricultural uses, not for flood protection.

The Champion Drain from 43rd Avenue to 74th Avenue flows from east to west and from 75th Avenue to the Salt River flows in a northwesterly direction. The 100-year floodplain associated with the Champion Drain area is very wide and shallow, reaching a maximum width of approximately 2,000 feet. The floodplain currently covers mainly agricultural land with pockets of residential development. Flood flows are generally sluggish with low flow velocities and some ponding. The Champion Drain irrigation channel ends at 43rd Avenue.

The following areas within the Laveen ADMS were delineated by approximate methods and are indicated on the Vicinity Map, Figure 1.2:

1. Selected unnamed washes No. 1 through No. 9 located at the foothills of the South Mountains along the Western Canal between 19th Avenue and 43rd Avenue.

2. The southwesterly flowing unnamed wash in Sections 15 and 16, Township 1 South, Range 2 East (Hereafter referred to as Section 15 Wash).

3. The northeasterly flowing unnamed wash heading in Section 15, Township 1 South, Range 2 East, flowing through the Southeast corner of Section 10 and for about 1,500 feet into Section 11 (Hereafter referred to as Section 11 Wash).

Un-named washes upstream of the Western Canal (No. 1 - No. 9) studied by approximate methods are located in the foothills of the South Mountains and their floodplains are confined within the channel banks until they reach the Western Canal where flow spreads and ponds along the south side of the Western Canal.

The study limits for both detailed and approximate study areas were defined by the District staff following discussions and a field reconnaissance with CBA staff.

Community Description

The study encompasses the area surrounding the unincorporated Maricopa County community of Laveen, Arizona. The Champion Drain floodplain extends predominately

through undeveloped, active agricultural lands. However, portions of a subdivision located north of Baseline Road from 67th Avenue to 65th Avenue and several small farms are also located within the Champion Drain floodplain. The floodplains of the approximate study washes are in the foothills of the South Mountains. Residences are scattered and few are currently affected by these approximate study floodplains.

Principal Flood Problems

Current flood problems include shallow and wide flooding associated with the Champion Drain and ponding behind the Western Canal. As development pressures from an ever growing Phoenix Metropolitan population expands into the Laveen area, it will be imperative to have in place a sound floodplain management plan. This floodplain delineation study is a first step in identifying the flood hazards to begin the planning process.

Flood Protection Measures

There are currently no effective flood control measures for the 100-year event on any of the study reaches.

ENGINEERING METHODS

Hydrologic Analysis

A hydrologic analysis to determine the 100-year peak discharges along the Champion Drain and for areas to be mapped by approximate methods was performed utilizing the U.S. Army Corps of Engineer's, HEC-1, "Flood Hydrograph Package," computer model. The 100-year peak discharges used in this hydraulic analysis for the Champion Drain area were compiled in a companion report which was reviewed and approved by the Flood Control District of Maricopa County and is entitled, "Laveen Area Master Drainage Study (Phase I), Hydrology Report, Existing Conditions," dated September 1991.

The 100-year peak discharges used in the hydraulic analysis along the Champion Drain and selected areas of the foothills of the South Mountains are listed in Table 1, Summary of Discharges.

Hydraulic Analysis

Detailed Study

A detailed hydraulic analysis of Champion Drain from the Salt River (roughly 83rd Avenue) to 43rd Avenue was performed to determine the 100-year base flood elevations and the floodplain boundaries for existing conditions using the HEC-2 step-backwater computer program developed by the U.S. Army Corps of Engineers. A total of 60 cross-sections (average distance between cross-section is 500 feet) were entered into the HEC-2 program to model the existing channel and overbank areas along the study reach. The cross-section data was manually entered from 1" = 400' scale, 2-foot contour interval topographic mapping dated July 1990.

The Champion Drain irrigation channel is narrow, with sharp 90-degree bends at several locations and provides virtually zero stormwater conveyance due to its agricultural tailwater base flow. A profile line of low lying ground elevations adjacent to the Champion Drain irrigation channel was determined from the work map topography to represent the flow path of stormwater runoff through the Champion Drain area. This profile line is represented on the affected Champion Drain floodplain work maps and flood profile sheets. The primary flow path and overbank areas consist mainly of irrigated farm land with farmer's dikes and irrigation canals. Much of the floodplain has been influenced by man through mechanical leveling of the farm fields and the construction of roads. CBA staff has found through past experience that the earthen farm dikes and farm road systems are not well maintained, typically fail during major flow events, and are transitory depending on such things as crop type, irrigation strategies, property ownership, etc. Therefore, these features were not assumed to have an impact on the floodplain and were generally not included in the HEC-2 cross-section data. The exception is Baseline Road which is a major paved arterial, is aligned parallel to the flow direction and is well maintained. The modeling of this area is discussed in greater detail in later paragraphs.

The starting water surface elevation (cross-section 0.593 at the confluence with the Salt River) used in the HEC-2 modeling is based on the Slope-Area Method. For mapping purposes, the existing Salt River water surface elevation has been placed on the work maps until the resultant Champion Drain floodplain water surface elevation exceeds the Salt River's elevation.

The channel and overbank roughness factors (Manning's 'n') used in the hydraulic computations were based on aerial photographs, field observations of the channel and floodplain areas and engineering judgement. The channel 'n' values for Champion Drain area range from 0.030 to 0.045 and the overbank 'n' values range from 0.040 to 0.100. The use of these 'n' values in the hydraulic analysis was coordinated with the staff of the District and an "n" value report was prepared, submitted and approved.

Areas of Special Interest

Between cross-sections 1.156 and 1.682, the channel profile line goes through a naturally depressed area where sluggish flow velocities and some ponding can be expected. The HEC-2 100-year water surface elevations reported for this area are higher than the adjacent channel bank (left bank of Champion Drain irrigation channel) and indicate that flood flows spill west to the Gila River Indian Reservation. The length of the bank over which the spill or weir flow occurs is approximately 3,500 feet. The HEC-2 computer model reports extended cross-section messages (ranges from 0.1 to 1.1 feet) along this reach. However, the "split- flow" option of the HEC-2 program was not applied to this reach. It was determined by CBA staff that the "split-flow" option is not appropriate at this location since the amount of spill computed by HEC-2 is much more than the 100-year peak discharge used for this reach which is physically impossible. To delineate the floodplain in this area, CBA staff used peak discharge estimates generated in the HEC-1 analysis which employed reservoir routing and a field surveyed cross-section to approximate the potential for split-flow which occurs at Baseline Road (Appendix B). CBA staff estimated the ponding area located south of Baseline Road and east of the Champion Drain irrigation channel to be approximately 124-acres and have maximum ponding depths between 3 and 4 feet. The elevated Champion Drain irrigation channel and appurtenant maintenance roads located along the west side of the ponding area will contain the flood flows and direct them in a northwesterly direction. The Baseline Road crossing of the Champion Drain irrigation channel represents a topographically low elevation where split-flow will occur. CBA staff approximated the split-flow using a field surveyed cross-section (along the center line of Baseline Road) and normal depth computations (Manning's Equation). A rating curve was developed for this cross-section and applied in the HEC-1 analysis. The centerline of the Champion Drain alignment was selected as the logical location for the division of flow. Flows which exit at this split-flow area leave the study area to the west and do not return. Subsequently, the peak discharge of the remaining flood flow reduces significantly north of Baseline Road. It should be noted that the resultant 100-year floodplain and base flood elevations delineated on the work maps for this area were derived from the HEC-2 model report which contain extended cross-section messages. This is due to the distinct modeling differences between HEC-1 and HEC-2.

Due to the existence of an elevated maintenance road adjacent to the Champion Drain irrigation channel between cross-sections 1.924 and 2.303, the base flood elevations and 100-year floodplain boundaries were determined for both "with levee" and "without levee" conditions. Both floodplain limits are shown on the work map. It is recommended that the "with levee" floodplain boundary be used for floodplain management purposes.

Upstream of cross-section number 2.832, Baseline Road is elevated with fill and is higher than the adjacent ground. Therefore, the majority of flow from watersheds contributing runoff to this reach of the Champion Drain floodplain is confined to the north-side of Baseline Road. Minor watersheds to the south of Baseline Road generate runoff which collects and flows along the south-side of road. The south-side flow ultimately joins the flow from the north-side at cross-section 2.832. The results of the HEC-2 analysis indicates that from cross-section 3.013 to cross-section 3.296, the 100-year peak discharge flowing along the north-side of Baseline Road crosses the roadway and spills to the south-side. The "split flow" option of the HEC-2 program was applied to determine the amount of spillover from the north-side to the south-side of Baseline Road between cross-section 3.013 and 3.296. However, the spillover amount was not directly added to the south-side discharge due to the fact that the time-to-peak (T_p) of the two watersheds do not coincide. The 100-year peak discharge along the south-side of Baseline Road generated by the minor watersheds alone is 868 cfs. The T_p of the flood hydrograph of south-side of Baseline Road is much less than the T_p for the flood hydrograph on the north-side. Therefore, the amount of spillover from the north-side of Baseline Road was added to the receding limb of the south-side hydrograph at a time when the north-side hydrograph is at its peak. When the resultant cumulative peak discharge was greater than 868 cfs (100-year peak discharge for the south-side alone), the higher peak discharge was utilized to determine 100-year base flood elevations and floodplain limits for the south-side. When the resultant cumulative peak discharge was less than 868 cfs, a minimum of 868 cfs was utilized to determine 100-year base flood elevations and floodplain limits for the south-side. The 100-year peak discharge along the north-side of Baseline Road was reduced by the amount spilling to the south-side and representative base flood elevations and the floodplain limits were determined. As a result, it was necessary to plot two separate flood profiles for the north- and south-sides of the Baseline Road from 65th Avenue to 57th Avenue. The base flood elevations and floodplain delineations for this reach are shown of the respective work maps and flood profile sheets.

Approximate Study

Nine Washes (No. 1 through No. 9) located on the north slope of the South Mountains along and upstream of the Western Canal between 19th Avenue and 43rd Avenue, and two washes north of the Western Canal (Section 11 Wash and Section 15 Wash), were designated by the District to be studied by approximate methods. Floodplain limits for all of these washes were determined by normal depth computations using Manning's Equation. Cross-section data taken from the topographic work maps were used along with the respective 100-year peak discharges and the resultant floodplains designated as Zone A. Due to the steep slopes and mountainous topography, the floodplain limits for these washes are narrow and confined to the natural channel banks except along the south-side of the

Western Canal where flows spread and cause some ponding of the adjacent areas. The approximate floodplain delineations for these washes are presented on the work maps.

OTHER STUDIES

There have been no other floodplain delineation studies previously prepared for the detailed and approximate study reaches contained herein. A detailed study for the Salt River has been previously prepared by the Federal Emergency Management Agency (FEMA) and is presented on FEMA Panel 2115 for Maricopa County and Incorporated Areas, Effective Date: April 15, 1988. The base flood elevations for the Salt River at it confluence with the Champion Drain are used by this study and illustrated on the work maps.

TABLE 1

SUMMARY OF DISCHARGES

Flooding Source and Location	Drainage Area (Sq. Mi.)	100-year Peak Discharge
Champion Drain		
At Salt River	28.5	1159 cfs
At Downstream side of Baseline Road	27.2	1125 cfs
At Upstream side of Baseline Road	27.2	2960 cfs
At 75th and South Mountain Avenues	27.2	3104 cfs
At 67th Avenue	25.7	3154 cfs
At 65th Avenue	25.1	3231 cfs
At 59th Avenue, northside of Baseline Road	22.3	2795 cfs
At 59th Avenue, southside of Baseline Road	2.0	868 cfs
At 51st Avenue	21.2	2976 cfs
At 47th Avenue	20.2	3089 cfs
At 43rd Avenue	15.7	2175 cfs
Washes behind the Western Canal		
Wash No. 1	0.3	549 cfs
Wash No. 2	0.4	863 cfs
Wash No. 3	0.4	869 cfs
Wash No. 4	0.4	742 cfs
Wash No. 5	0.3	699 cfs
Wash No. 6	0.3	697 cfs

Flooding Source and Location	Drainage Area (Sq. Mi.)	100-year Peak Discharge
Wash No. 7	0.4	1061 cfs
Wash No. 8	0.1	108 cfs
Wash No. 9	0.2	541 cfs
Section 11 Wash		
At Downstream Limit of Approximate Study	0.6	1241 cfs
Section 15 Wash		
At Upstream Limit of Approximate Study	0.03	54 cfs
At Downstream Limit of Approximate Study	1.1	2037 cfs

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TABLE 2

ELEVATION REFERENCE MARKS

Firm Reference Mark	Work Map Panel	Elevation (Ft. NGVD)	Description of Work
ERM 1	9	984.13	Aluminum cap in concrete at the NW fence corner of SRP well site located at the NW corner of Baseline Road and the Champion Drain.
ERM 2	9	993.27	Aluminum cap in concrete at south end of concrete irrigation canal located 0.5 mile south of Baseline Road and roughly 175' west of 67th Avenue extended.
ERM 3	10	1001.25	A.D.O.T. aluminum cap in concrete roughly 60' east and 60' south of the easterly intersection of 59th Avenue and Baseline Road by transmission pole #25. Cap is stamped "BM SWL No. 25 1986".
ERM 4	10 & 11	1010.26	Brass cap in handhole at intersection of Baseline Road and 51st Avenue.
ERM 5	6	1016.91	Aluminum cap in concrete at northwest corner of concrete irrigation box, roughly 0.25 mi. south of Southern Avenue and 0.5 mi. west of 43rd Avenue.
ERM 6	6	1019.96	Aluminum cap in concrete 33 feet west of 43rd Avenue centerline and 0.25 mi. south of Southern Avenue.
ERM 7	6 & 7	1036.90	Maricopa County brass cap in handhole at intersection of 35th Avenue and Southern Avenue.
ERM 8	7	1046.46	City of Phoenix brass cap in handhole at intersection of 27th Avenue and Broadway Road.

Firm Reference Mark	Work Map Panel	Elevation (Ft. NGVD)	Description of Work
ERM 9	16	1144.34	Aluminum cap in concrete at southeast corner of Western Canal and 37th Avenue.
ERM 10	17	1148.95	Chiseled "x" on north end of east concrete headwall at Western Canal and 31st Avenue.
ERM 11	17	1153.56	Aluminum cap in north end of concrete headwall at northwest intersection of Western Canal and 27th Avenue.
ERM 12	17	1152.30	City of Phoenix brass cap in intersection of 19th Avenue and Dobbins Road.

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APPENDIX A

CHAMPION DRAIN 100-YEAR HEC-2 PROFILE
(FLOPPY DISKETTE AND HARD COPY)

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*                                            *
* Version   4.5.1;  September 1990           *
*                                            *
* RUN DATE    28APR92    TIME   07:57:43     *
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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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**********************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.5.1;  September 1990
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T1  FLOOD CONTROL DISTRICT                    CELLA BARR ASSOCIATES
T2  OF MARICOPA COUNTY HEC2 FILE(CHAMP.FDW1)  5062 NORTH 19TH AVENUE
T3  CHAMPION DRAIN FLOODPLAIN RUN             PHOENIX,ARIZONA
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J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
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J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
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J3 VARIABLE CODES FOR SUMMARY PRINTOUT

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56	53	54	200						

NC	.035	.07	.04	0.1	0.3					
QT	1	1159								
X1	0.593	13	9945	10345	000	000	000			
GR	984.5	9870	981.0	9880	981.0	9920	982.0	9930	980.0	9945
GR	978.5	10130	980.0	10345	982.0	10570	982.0	11040	980.0	11080
GR	980.0	11320	982.0	11490	981.2	11840				
X1	0.588	9	9885	10190	500	500	500			
GR	984.5	9885	982.0	9925	982	9950	982.0	9980	980.4	10190

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X1    0.782        14      9910     10300       500       500       500
GR    984.0      9910     982.8      9920     982.8      9955     984.0      9960     984.0      9975
GR    982.0      9985     981.5     10130     982.0     10300     982.0     10410     981.3     10830
GR    982.0     11250     983.1     11830     984.0     12360     985.8     12530

GT        1      1125
X1    0.866        13      9910     10145       440       440       440
GR      984      9910       983      9925       983      9965       982      9985     981.7     10045
GR      982     10145     982.7     10445       983     10875     983.0     10965       982     11465
GR    983.0     11795     984.0     11895     986.0     12175
1
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```
GT        1      2960
NH        2        .1     10600       .07     11890
        EXTENDED SECTIONS 1.156 - 1.682 ARE LOCATED ALONG THE BOUNDARY
        OF THE GILA INDIAN RESERVATION (LIMITS OF STUDY AREA).
X1    1.156        13      9865     10100      1535      1535      1535
GR      987      9840       986      9865       984      9895       984      9905       986     10000
GR    986.0     10100     985.5     10250     986.0     10440     986.0     10600     986.1     10780
GR    986.1     10820     987.1     11840     987.4     11890

NC      .04       .07       .04
X1    1.281        10      9900     10400       660       660       660
GR    987.3      9900       986      9940     984.5      9950     984.5      9970       986      9990
GR    986.4     10400       988     11470       988     11615     988.2     11740     988.8     12340

GT        1      3104
X1    1.682         6      9840     11180      2220      1535      2115
GR    987.6      9840       986      9895     984.2      9900       986     11180       988     12180
GR    989.4     12610

NC      .07       .07       .04
        DIVIDED FLOW MESSAGES DUE TO CHAMPION DRAIN LEVEE THAT IS ASSUMED
        TO FAIL AT TIME OF THE 100-YEAR EVENT.
X1    1.830        15      9800     10970       785       520       780
GR      990      8945       988      9195       986      9395       [illegible]      [illegible]      988      9760
GR      988      9780       986      9800       985     10000       986     10970       988     11920
GR    988.9     12240     989.4     12485     989.1     12780     989.7     13420       990     13785

NH        5       .07      9720       .04     10900       .07     12205      .065     12495       .04
NH    13475
X1    1.924        16      9780     10900       500       500       500
GR     1000      8670       990      8925       988      9325       986      9720       991      9740
GR      990      9755     986.7      9780     986.7      9805     987.7      9845     987.7     10900
GR      988     11445     989.2     12205       990     12495     991.1     12805     991.4     13125
GR      992     13475

NH        5       .07      9705       .04     11045       .07     12490      .065     12875       .04
NH    13455
X1    2.019        22      9755     10115       500       500       500
GR     1000      8715       994      8815       994      8915       990      9265       988      9615
GR    987.3      9705       990      9725     991.9      9745       990      9755       988      9815
GR    987.6     10115       988     11045     989.4     11650     989.6     11995       990     12400
GR    990.5     12415       990     12435     989.9     12465       990     12490     990.4     12575
GR    991.5     13115       992     13455

NH        5       .07      9745       .04     10630       .07     12490      .065     12890       .04
NH    13380
X1    2.114        17      9755     10630       500       500       500
GR     1000      8875       996      8940       990      9240       990      9735       992      9745
GR    993.4      9755       992      9770       990      9775       988      9780       [illegible]      [illegible]
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NH      5      .07     9720      .04    10845      .07    12475     .065    12715      .04
NH  13455
X1  2.209       16     9765    10845      500      500      500
GR   1000     9065      992     9515      992     9720    993.3     9740      992     9755
GR    990     9765      998     9790    988.1    10185    988.9    10845      990    11065
GR    991    12405      992    12445      991    12475    991.1    12715      992    13060
GR    994    13455

NH      5      .07     9725      .04    10220      .07    12450     .065    12860      .04
NH  13260
X1  2.303       16     9770    10755      500      500      500
GR   1000     9230      994     9390      992     9600      992     9725    993.5     9740
GR    992     9755      990     9770      990     9870    989.1    10220      990    10755
GR    992    12400      992    12450    993.0    12480      992    12540    992.0    12860
GR    993    13260

NH      2      .07     9725      .07    11995
QT      1     3154
X1  2.398       13     9755    10800      500      500      500
GR   1000     9390      998     9400      996     9600      994     9725      990     9755
GR    990     9780      992     9790      992     9835    991.6    10015      992    10090
GR    992    10800      992    11515      994    11995

NH      2      .05     9680      .07    12000
X1  2.516       17     9700    10500      625      480      625
GR   1001     8950      998     8975      998     9220      996     9310      994     9550
GR    994     9680      994     9700      990     9735      990     9765      992     9780
GR  993.5     9800      992     9815      992    10500    993.1    11080    992.8    11650
GR    994    11970    994.6    12000

NH      3      .05     8630      .07    11570     .065    11600
QT      1     3231
X1  2.832       23     8665    10165      700      600     1665
GR   1006     7375     1002     7405     1000     7615      998     7855      994     8165
GR  992.5     8375      994     8630      994     8665    991.1     8695    991.1     8715
GR    992     8745    993.7     8750      992     8765      992     9285    993.2     9525
GR  993.5    10165      994    10380    994.0    10420      994    10610      994    10780
GR  994.8    11150      996    11570    996.5    11600

NH      2      .04     9840      .065    11370
QT      1     1528
```

WEIR FLOW OCCURS FROM SECTION 3.013 TO 3.390 AS FLOW FROM THE NORTH SIDE OF BASELINE ROAD WEIRS ACROSS THE ROADWAY TO THE SOUTH. THE AMOUNT OF DISCHARGE SPILLING SOUTH OVER THE ROADWAY WAS CALCULATED USING THE SPLIT FLOW ROUTINE (HEC2 FILE BASELINE.WEIR) AND THE CALCULATED Q WAS SUBTRACTED FROM THE NORTHSIDE DISCHARGE.

```
X1  3.013        8     9775    10100      515      690      960
GR  995.6     9775      994     9840      994    10100    994.9    10763      996    10980
GR    996    11170      996    11350      998    11370
```



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NH      2      .04     9780      .065    11655
QT      1     1540
X1  3.106        7     9780    10200      500      500      500
GR  996.3     9770      996     9780    994.5    10000    995.1    10200      996    11030
GR    998    11635      999    11655
```

[illegible]	2	[illegible]	9945	.065	11825					
GT	1	1530								
X1	3.203	7	9945	10250	500	500	500			
GR	996.7	9815	996	9845	994.6	10000	996	10250	996	11060
GR	998	11400	999.4	11825						
XH	2	.04	9865	.065	11940					
GT	1	2515								
X1	3.296	10	9941	10090	490	490	490			
GR	997	9840	997	9941	996	9865	995	10000	996	10090
GR	996	10730	997.2	11130	998	11530	998	11670	1000	11940
NC	.04	.07	.04							
GT	1	2795								
X1	3.390	12	9870	10210	500	500	500			
GR	998.5	9830	998.5	9831	998.5	9832	998	9855	996	9870
GR	995.8	10000	996	10210	998	11150	998	11410	998.7	11650
GR	1000	12205	1000.3	12270						
X1	3.465	9	9871	10250	500	500	500			
GR	999.1	9850	999	9851	998	9875	997.1	10000	997	10250
GR	998	10170	999	11675	1000	12400	1001.5	12470		
X1	3.578	10	9945	10320	490	490	490			
GR	999.9	9910	999.8	9911	999.8	9912	998	9945	997.4	10100
GR	998	10320	999.7	11190	999.7	11450	999.9	11825	1002	12510
X1	3.671	9	9975	10290	490	490	490			
GR	1001.1	9950	1001	9951	1001	9952	1000	9975	999.1	10290
GR	1000	10950	1000.8	11260	1001	11860	1002	12545		
	59TH AVENUE									
X1	3.763	9	9955	10300	490	490	490			
GR	1001.8	9920	1001.5	9921	1001.5	9922	1000	9955	999.4	10165
GR	999.7	10300	1000.4	10860	1001.8	11900	1002	12450		
GT	1	2976								
X1	3.858	15	9945	10265	500	500	500			
GR	1002.3	9920	1002	9921	1002	9922	1002	9923	1002	9924
GR	1000	9945	999.5	10120	1000	10265	1001	10470	1001	10900
GR	1001.6	11220	1001.5	11650	1002.2	11900	1002.5	12270	1004	13140

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X1	3.953	16	9970	10320	500	500	500			
GR	1003.8	9930	1003.8	9931	1002	9950	1000	9970	1000	10040
GR	1000.2	10070	1000	10125	999.5	10150	1000	10320	1001.3	10700
GR	1001.3	10930	1002	11230	1001.7	11500	1002	11820	1002.6	12000
GR	1004	13055								
X1	4.046	13	9980	10350	490	490	490			
GR	1005	9955	1005	9956	1004	9965	1000	9980	999.8	10000
GR	1000	10020	1001.5	10350	1002	10880	1002.5	11180	1002.5	11270
GR	1002	11270	1002	11470	1004	12630				
X1	4.143	13	9952	10240	515	515	515			
GR	1005.4	9950	1005.4	9951	1005.4	9952	1004	9970	1002	9985
GR	1001.5	10000	1002	10240	1003.7	11240	1003.7	11260	1003	11550
GR	1003.5	11975	1003.9	12120	1004	12300				
X1	4.228	11	9985	10300	500	500	500			
GR	1006.1	9950	1006.1	9951	1006	9960	1002	9985	1002	10000
GR	1003.1	10700	1004	11130	1004.5	11230	1004	11260	1004	11650

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X1    4.331       13      9970     10450       490       490       490
GR     1007     9960      1007      9961      1007      9962      1007      9963      1007      9964
GR     1006     9970    1002.7     10000      1004     10005      1004     10030    1003.9     10100
GR     1004    10450    1005.6     12090      1006     12630

X1    4.425       12      9985     10450       500       500       500
GR     1008     9960      1008      9961      1008      9962      1008      9963      1008      9964
GR     1004     9985      1004     10000    1004.7     10450      1006     11240    1006.2     11500
GR   1006.9    12500      1008     13070

X1    4.520        8      9997     10500       500       500       500
GR     1010     9965      1010      9966      1010      9997      1004     10000      1006     10025
GR   1005.0    10500      1006     11240      1008     12850

X1    4.615       10      9945     10440       500       500       500
GR     1011     9890      1011      9891      1011      9892      1011      9893      1010      9910
GR     1006     9945    1006.5     10440    1007.8     11800      1008     12550    1009.8     13000

X1    4.714       12      9730     10220       475       450       525
X4        1   1007.5     10220
GR   1011.5     9700    1011.5      9701      1010      9710      1006      9730      1006      9740
GR     1008     9760      1008      9780    1007.8     10000    1007.8     10800      1008     10990
GR     1009    12310      1010     12500

        51ST AVENUE
X1    4.803       11      9410     10440       420       225       470
X4        1   1008.5     10440
GR     1024     8300      1020      8425      1012      9065      1011      9310    1011.7      9330
GR     1010     9365      1009      9380    1009.8      9410    1008.2     10000    1009.9     12140
GR     1012    12325
1
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GT        1     3089
NH        3      .07     10300      .065     10640       .07     12925
X1    4.898       18      9580     10300       410       400       500
GR     1020     8135      1014      8610      1012      8870      1012      8975    1012.8      9000
GR     1012     9020      1010      9025      1009      9035      1010      9045      1010      9085
GR     1009     9580      1010      9750    1008.5     10000    1008.2     10240    1008.2     10300
GR   1009.5    10640      1010     11610      1012     12925

NH        3      .07     10000      .065     10370       .07     12755
X1    4.993       10      9420     10370       550       330       500
GR     1018     8315      1014      8640      1014      8700      1012      8710      1010      9420
GR     1010     9565    1009.5     10000    1009.6     10370      1010     11100      1012     12755

NC     .055      .07       .07
X1    5.087       11      9375     10510       630       280       500
X4        1   1011.0     10510
GR     1018     8310      1014      8825      1012      9150    1011.8      9230    1011.8      9310
GR   1011.8     9345    1011.8      9375    1010.5      9999    1010.7     11210    1012.0     12010
GR   1012.1    12145

X1    5.182       11      9355     10550       490       460       500
X4        1   1011.0     10550
GR     1018     8325      1014      8900      1014      8950    1013.0      9175      1012      9355
GR   1011.5    10000      1012     10720      1011     11500    1012.7     11880    1013.0     12005
GR   1013.1    12230

NC      .07      .07       .07
X1    5.277       13      9515     10520       630       240       500
X4        1   1011.8     10520
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GR   1[illegible]   10000    1012    11095    1012.5   11135    1012    11200    1011.5   11560
GR   [illegible]    11840    1013.5  11930    1013.7   12320

X1   5.371          9        9705    10420    510      475      500
X4   1              1011.3   10420
GR   1018           8370     1016    8700     1014     9225     1013    9705     1012     9840
GR   101[illegible] [illegible]000   1012    11235    1014     11900    1015.1   12055

X1   5.46           10       9840    10370    500      470      500
GR   10[illegible]  8460     1012    8590     1016     8830     1014    9590     1014     9840
GR   1014           10370    101[illegible]  10800    1014     11270    1014.7   11890    1016     12140

QT   1              2175
X1   5.561          9        9905    10450    380      610      500
GR   1020           9875     1018    8940     1016     9280     1014    9905     1013.5   10450
GR   1014           11040    1014.5  11900    1016.0   12060    1016.2  12070

X1   5.656          13       9845    10330    380      660      500
X4   1              1014.2   10330
GR   1020           [illegible]555   1016.5  9250     1015.9   9500     1015.2   9845     1014     10710
GR   1014           10765    101[illegible]  10730    1016     10800    1016     10810    1016     10825
GR   1015.6         11050    101[illegible]  11600    1016.1   11130
1
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NH   2            .07      11975   .065     12000
X1   5.750        13       9850    10150    375      600      [illegible]
GR   1022         8365 -   1020    8610     1018.0   9100     1016    9850     1015.9   10000
GR   1016         10150    1016.2  10490    1017.0   10520    1017.0  10530    1017     10800
GR   1017.1       11965    1017.5  11975    1018.0   12000

NH   2            .07      11700   -.065    12000
X1 - 5.845        15       9900    10260    500      500      500
X4   1            1017.5   9900
GR   1024         8540     1022    8590     1022     8640     1020    8865     1018     9625
GR   1017.2       10000    1018    10280    1018     10325    1017.2  10450    1018     10750
GR   1018         11180    1018.2  11460    1018     11700    1018.7  11865    1019.2   12000

NH   2            .07      11580   .065     11800 -
X1   5.940        11       9880    10270    500      500      500
GR   1026         8470     1024    8615     1024     8670     1022    9075     1019.9   9670
GR   1018.6       9720     1018    9880     1018.2   10270    1018.5  10550    1019.8   11580
GR   1020         11800

NC   .04          .04      .1
X1   6.034        14       9280    10165    380      750      500
GR   1026         8215     1024    8690     1022     9070     1021    9280     1020     9470
GR   1020         9700     1019.7  9740     1020     9955     1021    10165    1021.1   11005
GR   1022         11250    1024    12100    1026     13490    1026.6  13640

NH   3            .05      9500    .07      11295    .065     12615
QT   1            3231
X1   -2.832       23       9635    10155    700      500      950
GR   1006         8245     1002    8275     1000     8485     998     8725     994      9035
GR   992.5        9245     994     9500     994      9535     990     9585     990      9585
GR   992          9615     993.7   9620     992      9635     992     10155    993.2    10395
GR   993.5        11035    994     11260    994.7    11295    994     11535    994      11645
GR   994.7        11925    995     12590    997.4    12615

NH   4            .055     8710    .07      9800     .055     10125   .07      10430
QT   1            1663
        THE PEAK DISCHARGE FOR SECTIONS 3.926 TO 3.209 IS ROUGHLY 2 -CUBE BE-
        HIND THE PEAK ON THE NORTHSIDE OF BASELINE ROAD.  THE DISCHARGE FOR
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FROM NORTH TO SOUTH. CONSEQUENTLY WEIR FLOW FROM THE NORTHSIDE IS
ADDED TO THE 396 CFS ON THE SOUTHSIDE. THE Q-100 FOR THE SOUTHSIDE
IS 868 CFS AND IS USED AS A MINIMUM DISCHARGE.

X1	2.926	12	9800	10125	500	500	500			
GR	1006	7765	1000	7845	994	8250	994	8325	993.4	8710
GR	993.4	9800	993.4	10125	994	10340	994	10360	994	10385
GR	994	10405	995.6	10430						
NH	5	.055	8645	.07	9815	.055	10135	.07	10345	.035
NH	104[illegible]									
GT	1	1651								

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X1	3.021	15	9815	10405	500	500	500			
GR	1008	7785	1006	7800	1004	7960	998	8175	994	8645
GR	994	8705	993.5	8985	994	9425	994.1	9640	994	9815
GR	994	10135	994.[illegible]	10345	994	10380	994	10405	996.3	10420
NH	5	.055	8550	.07	9800	.055	10135	.07	10380	.035
NH	10420									
GT	1	[illegible]59								
X1	3.121	14	9800	10380	530	530	530			
GR	1010	7800	1008	7850	1006	8100	1004	8450	1002	8480
GR	1000	8510	998	8520	996.0	8550	995.6	8560	994.8	9000
GR	994.2	9800	994.5	10135	995	10380	996.7	10420		
NC	.07	.07	.07							
GT	1	868								
X1	3.209	11	9800	10390	490	490	490			
X4	1	994.0	9800							
GR	1010	7805	1008	7810	1006	8200	1004	8460	996	8515
GR	994.8	8975	995.3	9430	994.6	10000	995.5	10370	995	10390
GR	997	10410								
X1	3.303	12	9750	10350	500	500	500			
X4	1	996.5	9750							
GR	1010	7755	1008	7895	1006	8405	998	8450	996.1	8605
GR	996.2	8930	996	10030	996.4	10205	996	10335	995	10350
GR	996	10360	998.5	10380						
X1	3.398	11	9800	10300	500	500	500			
X4	1	996.6	9800							
GR	1014	7735	1012	7745	1010	8080	1010	8350	1004	8390
GR	1002	8960	998	8990	996.6	9285	996	10300	996	10320
GR	999.1	10340								
X1	3.491	13	9800	10285	490	490	490			
X4	1	997.0	9800							
GR	1014	7690	1012	7905	1010	8315	1006	8350	1004	8825
GR	1004	8920	1000	8950	998.1	9050	998	9250	998	9355
GR	996	10270	996	10285	999.9	10300				
X1	3.584	18	9875	10210	490	490	490			
GR	1016	7585	1014	7735	1014	7935	1012	8260	1008	8300
GR	1006	8525	1004	8875	1000	8905	999.1	9100	998	9875
GR	997.8	9995	998	10135	998.2	10175	998	10210	996	10225
GR	996	10240	998	10250	1000.1	10260				
X1	3.678	8	9850	10190	500	500	500			
X4	1	998.3	9850							
GR	1017	7565	1014	7620	1012	8355	1004	8605	1002	8880
GR	1000	9205	1000	10190	1001.8	10200				

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X1    3.773        10       9950      10130        500        500        500
X4        1    1000.0       9950
GR     1019       7480     1016.2       7550       1016       8140       1014       8165       1012       8500
GR     1004       9550       1002       9910       1000       9580       1000      10130     1002.3      10135

X1    3.868        12       9910      10070        500        500        500
GR   1019.2       7440       1016       7460       1016       8085       1014       8105       1012       8445
GR     1006       8480       1004       8585       1002       8985     1000.4       9280     1000.3       9910
GR     1002      10070     1003.8      10075
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   SECNO     DEPTH     CWSEL     DRIWS     WSELK     EG        HV        HL        QLOSS     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

CCHV=     .100 CEHV=     .300
*SECNO  .593

3265 DIVIDED FLOW

     .593      1.94    980.44       .00    980.40    980.51       .08       .00       .00    980.00
   1159.0        .6    1080.1      78.4        .7     474.0     125.0        .0        .0    980.00
      .00       .84      2.28       .63      .035      .040      .070      .000    978.50   9941.74
  .003000        0.        0.        0.         0         0         5       .00    737.89  11356.98


FLOW DISTRIBUTION FOR SECNO=       .59          CWSEL=    980.44

STA=    9942.    9945.   10345.   10394.   11080.   11320.   11357.
  PER Q=       .1      93.2       .4       .1      6.0       .3
   AREA=       .7     474.0     10.6      1.9    104.4      8.0
    VEL=       .8       2.3       .4       .4       .7       .4
  DEPTH=       .2       1.2       .2       .0       .4       .2

*SECNO  .688
     .688      1.74    982.14       .00       .00    982.17       .03      1.65       .00    984.50
   1159.0        .0     364.4     794.6        .0     195.0     682.9       8.5      12.7    980.40
      .10       .00      1.87      1.16      .000      .040      .070      .000    980.40   9922.81
  .003660      500.      500.      500.         2         0         0       .00   1470.85  11393.67


FLOW DISTRIBUTION FOR SECNO=       .69          CWSEL=    982.14

STA=    9923.   10180.   10860.   11390.
  PER Q=      31.4      67.6       1.0
   AREA=     195.0     636.9      45.9
    VEL=       1.9       1.2        .3
  DEPTH=        .8        .9        .1

*SECNO  .782

3265 DIVIDED FLOW
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         GLOB      GCH       GROB      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 =  2.21

     .782      1.57    982.87       .00       .00    982.88       .01       .71       .00    984.00
   1159.0        .0     363.6     795.4        .0     357.0    1319.3      23.1      31.2    982.00
      .29       .00      1.02       .60      .000      .040      .070      .000    981.30   9919.42
  .000747      500.      500.      500.         4         0         0       .00   1763.66  11708.45


FLOW DISTRIBUTION FOR SECNO=       .78          CWSEL=    982.87

STA=    9919.   10300.   10410.   10830.   11250.   11708.
  PER Q=     31.4      4.4     29.3     29.3      5.7
   AREA=    337.0     95.6    512.2    512.2    199.3
    VEL=      1.0       .5       .7       .7       .3
  DEPTH=      1.0       .9      1.2      1.2       .4

*SECNO  .866
     .866      1.59    983.29       .00       .00    983.31       .02       .43       .00    984.00
   1125.0        .0     384.9     740.1        .0     259.2    1162.7      38.8      49.8    982.00
      .42       .00      1.48       .64      .000      .040      .070      .000    981.70   9920.60
  .001319      440.      440.      440.         3         0         0       .00   1903.73  11824.33


FLOW DISTRIBUTION FOR SECNO=       .87          CWSEL=    983.29

STA=    9921.   10145.   10445.   10875.   10965.   11465.   11795.   11824.
  PER Q=     34.2     18.7      7.6       .8     23.3     15.4       .1
   AREA=    259.2    293.0    190.6     26.4    396.6    261.8      4.3
    VEL=      1.5       .7       .4       .3       .7       .7       .2
  DEPTH=      1.2       .9       .4       .3       .8       .8       .1

1490 NH CARD USED
*SECNO 1.156
3220 CROSS SECTION      1.16 EXTENDED       .37 FEET


3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.56

        EXTENDED SECTIONS 1.156 - 1.682 ARE LOCATED ALONG THE BOUNDARY
        OF THE GILA INDIAN RESERVATION (LIMITS OF STUDY AREA).
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         GLOB      GCH       GROB      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


    1.156      3.37    987.37    986.44       .00    987.40       .03      4.09       .70    986.00
   2960.0      19.0     675.7    2266.3      21.8     467.8    1856.4     105.2     119.3    986.00
      .76       .83      1.44      1.22      .100      .100      .092      .000    984.00   9840.00
  .003774     1535.     1535.     1535.        15        11         0       .00   2045.61  11885.61
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FLOW DISTRIBUTION FOR SECNO=      1.16          CWSEL=    987.37

STA=    9840.    9865.   10100.   10250.   10440.   10600.   10780.   10820.   11840.   11896.
  PER Q=       .6      22.8      10.4      13.1       8.4      12.7       2.6      29.3       .1
   AREA=     21.8     467.8     243.5     308.5     219.8     238.3      50.9     789.2      6.2
    VEL=       .8       1.4       1.3       1.3       1.1       1.6       1.5       1.1       .3
  DEPTH=       .9       2.0       1.6       1.6       1.4       1.3       1.3        .8       .1

*SECNO 1.281
3280 CROSS SECTION      1.28 EXTENDED      1.07 FEET


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.14

     1.281      3.87    988.37       .00       .00    988.41       .04      1.01       .00    987.30
    2960.0        .0    2078.7     881.3        .0    1131.9    1361.1     141.8     150.1    986.40
       .88       .00      1.84       .65      .000      .040      .070      .000    984.50   9900.00
   .000825      660.      660.      660.         3         0         0       .00   2014.87  11914.87


FLOW DISTRIBUTION FOR SECNO=      1.28          CWSEL=    988.37

STA=    9900.   10400.   11470.   11615.   11740.   11915.
  PER Q=      70.2      28.8        .6        .3        .1
   AREA=    1131.9    1257.1      54.4      34.4      15.3
    VEL=       1.8        .7        .3        .3        .1
  DEPTH=       2.3       1.2        .4        .3        .1

*SECNO 1.682
3280 CROSS SECTION      1.68 EXTENDED      1.05 FEET


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  4.35

     1.682      4.45    988.65       .00       .00    988.66       .00       .24       .00    987.60
    3104.0        .0    2759.4     344.6        .0    4668.2    1719.1     336.9     242.6    986.00
      1.89       .00       .59       .20      .000      .040      .070      .000    984.20   9840.00
   .000048     2220.     2115.     1535.         4         0         0       .00   2540.72  12380.72


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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


FLOW DISTRIBUTION FOR SECNO=      1.68          CWSEL=    988.65

STA=    9840.   11180.   12180.   12381.
  PER Q=      88.9      11.0        .1
   AREA=    4668.2    1653.5      65.6
    VEL=        .6        .2        .1
  DEPTH=       3.5       1.7        .3

*SECNO 1.830
        DIVIDED FLOW MESSAGES DUE TO CHAMPION DRAIN LEVEE THAT IS ASSUMED
        TO FAIL AT TIME OF THE 100-YEAR EVENT.
     1.830      3.69    988.69       .00       .00    988.70       .00       .04       .00    986.00
    3104.0     394.2    2327.7     382.1    1379.4    3736.1    1694.0     445.0     285.6    986.00
      2.29       .29       .62       .23      .070      .040      .070      .000    985.00   9109.35
   .000060      785.      730.      520.         2         0         0       .00   [illegible]
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FLOW DISTRIBUTION FOR SECNO=      1.83          CWSEL=    988.69

STA=    9108.    9195.    9395.    9740.    9760.    9780.    9800.   10970.   11920.   12166.
  PER Q=       .1      2.5      9.5       .3       .1       .3     75.0     12.1       .2
   AREA=     30.0    338.6    929.2     33.9     13.9     33.9   3736.1   1608.6     85.4
    VEL=       .1       .2       .3       .2       .1       .2       .6       .2       .1
  DEPTH=       .3      1.7      2.7      1.7       .7      1.7      3.2      1.7       .3

1490 NH CARD USED
*SECNO 1.924

3265 DIVIDED FLOW


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .21

     1.924      2.76    988.76       .00       .00    988.79       .03       .08       .01    986.70
    3104.0     864.7    1799.4     440.0     784.7    1232.9     679.6     499.5     318.8    987.70
      2.40      1.10      1.46       .65      .068      .040      .070      .000    986.00   9172.86
   .001358      500.      500.      500.         2         0         0       .00   2720.55  11926.76


FLOW DISTRIBUTION FOR SECNO=      1.92          CWSEL=    988.76


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   SECNO    DEPTH     CWSEL     CRIWS     WSELK     ES        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


STA=    9173.    9325.    9720.    9731.    9780.   10900.   11445.   11927.
  PER Q=       .8     25.6       .8       .7     58.0     11.8      2.4
   AREA=     57.9    695.5     15.2     16.1   1232.9    496.3    183.2
    VEL=       .4      1.1      1.7      1.4      1.5       .7       .4
  DEPTH=       .4      1.8      1.4       .3      1.1       .9       .4

1490 NH CARD USED
*SECNO 2.019

3265 DIVIDED FLOW

     2.019      2.01    989.31       .00       .00    989.33       .02       .55       .00    990.00
    3104.0     220.0     665.5    2218.5     312.8     476.9    1767.2     529.7     346.8    987.60
      2.51       .70      1.40      1.26      .068      .040      .042      .000    987.30   9386.68
   .000895      500.      500.      500.         2         0         0       .00   2166.11  11608.80


FLOW DISTRIBUTION FOR SECNO=      2.02          CWSEL=    989.31

STA=    9387.    9615.    9705.    9720.   10115.   11045.   11609.
  PER Q=      2.3      4.3       .5     21.4     65.8      5.7
   AREA=    148.9    148.9     14.9    476.9   1399.4    367.8
    VEL=       .5       .9      1.1      1.4      1.5       .5
  DEPTH=       .7      1.7      1.0      1.4      1.5       .7

1490 NH CARD USED
*SECNO 2.114
     2.114      1.77    989.77       .00       .00    989.81       .04       .48       .00    [illegible]
    3104.0        .0    2626.1     477.9        .0    1511.2     762.5     557.4     [illegible]    985.00
      2.60       .00      1.74       .63      .000      .040      [illegible]      [illegible]    [illegible]
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FLOW DISTRIBUTION FOR SECNO= 2.11 CWSEL= 989.77

STA=	9776.	10630.	11490.
PER Q=	84.6	15.4	
AREA=	1511.2	762.5	
VEL=	1.7	.6	
DEPTH=	1.8	.9	

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	ES	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 2.209

2.209	2.21	990.21	.00	.00	990.24	.03	.43	.00	990.00
3104.0	.0	3[illegible]1.9	82.1	.1	2007.7	134.7	583.1	388.0	988.90
2.69	.22	1.51	.42	.040	.040	.070	.000	988.00	9763.97
.000718	500.	500.	500.	2	.0	0	.00	1577.06	11341.03

FLOW DISTRIBUTION FOR SECNO= 2.21 CWSEL= 990.21

STA=	9764.	9765.	10845.	11065.	11341.
PER Q=	.0	97.4	2.5	.1	
AREA=	.1	2007.7	166.3	28.4	
VEL=	.2	1.5	.5	.1	
DEPTH=	.1	1.9	.8	.1	

1490 NH CARD USED
*SECNO 2.303

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .41

2.303	1.80	990.90	.00	.00	990.97	.07	.72	.01	990.00
3104.0	4.4	2824.5	275.2	3.1	1289.7	336.9	605.1	407.0	990.00
2.76	1.42	2.19	.82	.040	.053	.070	.000	989.10	9763.21
.004264	500.	500.	500.	2	0	0	.00	1736.12	11499.34

FLOW DISTRIBUTION FOR SECNO= 2.30 CWSEL= 990.90

STA=	9763.	9770.	10220.	10755.	11499.
PER Q=	.1	51.4	39.6	8.9	
AREA=	3.1	564.7	724.9	336.9	
VEL=	1.4	2.8	1.7	.8	
DEPTH=	.5	1.3	1.4	.5	

1490 NH CARD USED
*SECNO 2.398

2.398	3.06	993.06	.00	.00	993.10	.03	2.12	.00	990.00
3154.0	64.2	1873.0	1216.8	35.2	1223.0	396.3	626.3	428.7	992.00
2.35	1.92	1.53	1.36	.070	.070	.070	.000	990.00	9732.02
.004221	500.	500.	500.	4	0	0	.00	2038.38	11770.40

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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

FLOW DISTRIBUTION FOR SECNO= 2.40 CWSEL= 993.06

STA=	9732.	9755.	10800.	11515.	11770.
PER Q=	2.0	59.4	34.	3.9	
AREA=	35.2	1223.0	760.9	135.9	
VEL=	[illegible]	1.5	1.4	.9	
DEPTH=	1.5	1.2	1.1	.5	

1490 NH CARD USED
*SECNO 2.516

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.12

2.516	4.07	994.07	.00	.00	994.06	.01	.98	.00	994.00
3154.0	1.6	1837.4	1315.0	11.0	1705.7	1735.3	662.7	456.7	992.00
3.02	.15	1.08	.76	.052	.070	.070	.000	990.00	9541.46
.000939	625.	625.	480.	4	0	0	.00	2432.10	11973.56

FLOW DISTRIBUTION FOR SECNO= 2.52 CWSEL= 994.07

STA=	9541.	9700.	10500.	11020.	11650.	11970.	11974.
PER Q=	.1	58.3	24.1	14.2	3.4	.0	
AREA=	11.0	1705.7	882.3	639.1	214.8	.1	
VEL=	.1	1.1	.9	.7	.5	.1	
DEPTH=	.1	2.1	1.5	1.1	.7	.0	

1490 NH CARD USED
*SECNO 2.832

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.56

2.832	3.74	994.84	.00	.00	994.85	.01	.77	.00	994.00
3231.0	625.0	2329.9	276.1	798.2	3255.6	737.2	781.0	523.5	993.50
3.54	.78	.72	.37	.050	.070	.070	.000	991.10	8099.61
.000405	700.	1665.	600.	4	0	0	.00	3065.71	11165.32

FLOW DISTRIBUTION FOR SECNO= 2.83 CWSEL= 994.84

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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

STA=	8100.	8375.	8630.	8665.	10165.	10380.	10780.	11165.
PER Q=	9.7	10.3	.3	72.1	3.3	4.0	1.3	
AREA=	362.3	406.4	29.5	3255.6	235.2	337.5	164.5	
VEL=	.8	.8	.4	.7	.5	.4	.2	
DEPTH=	1.3	1.6	.8	2.2	1.1	.8	.4	

1490 NH CARD USED
*SECNO 3.013

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .15

WEIR FLOW OCCURS FROM SECTION 3.013 TO 3.390 AS FLOW FROM THE NORTH SIDE OF BASELINE ROAD WEIRS ACROSS THE ROADWAY TO THE SOUTH. THE AMOUNT OF DISCHARGE SPILLING SOUTH OVER THE ROADWAY WAS CALCULATED USING THE SPLIT FLOW ROUTINE (HEC2 FILE BASELINE.WEIR) AND THE CALCULATED Q WAS SUBTRACTED FROM THE NORTHSIDE DISCHARGE.

3.013	1.37	995.37	.00	.00	995.41	.04	.55	.01	995.60
1528.0	.0	394.4	833.6	.0	394.3	631.6	836.8	560.8	994.00
3.69	.0	1.76	1.32	.000	.061	.065	.000	994.00	9784.35
.003384	515.	960.	690.	2	0	0	.00	1071.33	10855.68

FLOW DISTRIBUTION FOR SECNO= 3.01 CWSEL= 995.37

STA=	9784.	9840.	10100.	10763. 10856.
PER Q=	4.5	41.0	53.8	.8
AREA=	38.1	356.2	609.9	21.8
VEL=	1.8	1.8	1.3	.5
DEPTH=	.7	1.4	.9	.2

1490 NH CARD USED
*SECNO 3.108
3250 CROSS SECTION 3.11 EXTENDED .25 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.59

3.108	2.06	996.56	.00	.00	996.57	.02	1.17	.00	996.00
1540.0	3.2	762.0	774.8	4.1	638.7	882.1	851.4	575.1	995.10
3.82	.79	1.19	.88	.040	.065	.065	.000	994.50	9770.00
.001557	500.	500.	500.	3	0	0	.00	1428.31	11198.31

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	DLOSS	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

FLOW DISTRIBUTION FOR SECNO= 3.11 CWSEL= 996.56

STA=	9770.	9780.	10200.	11030.	11198.
PER Q=	.2	49.5	49.1	1.2	
AREA=	4.1	638.7	835.3	46.8	
VEL=	.8	1.2	.9	.4	
DEPTH=	.4	1.5	1.0	.3	

1490 NH CARD USED
*SECNO 3.203
3250 CROSS SECTION 3.20 EXTENDED .50 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.41

3.203	2.60	997.20	.00	.00	997.22	.02	.64	.03	996.00
1333.0	23.1	899.9	905.0	25.6	770.9	1097.9	871.1	591.6	996.00
3.96	1.10	1.17	.82	.040	.065	.065	.000	994.50	9815.00
.001105	500.	500.	500.	3	0	0	.00	1449.59	11264.59

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STA=    9815.    9845.   10250.   11060.   11265.
  PER Q=      1.5     49.1     45.7      3.6
   AREA=     25.6    770.9    974.8    123.1
    VEL=      1.1      1.2       .9       .5
  DEPTH=       .9      1.9      1.2       .6

1490 NH CARD USED
*SECNO 3.296
3280 CROSS SECTION      3.30 EXTENDED       .82 FEET

     3.296      2.82    997.82       .00       .00    997.84       .02       .62       .00    997.00
    2515.0        .7     840.9    1673.4        .3     554.7    1593.5     893.8     608.8    996.00
      4.08       .82      1.52      1.05      .040      .063      .065      .000    995.00   9840.00
   .001410      490.      490.      490.         1         0         0       .00   1613.04  11453.04


FLOW DISTRIBUTION FOR SECNO=      3.30          CWSEL=    997.82

1
   2849992      07:57:43                                                                          PAGE   19


    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


STA=    9840.    9841.    9865.   10090.   10380.   11180.   11453.
  PER Q=       .0      2.1     31.3     27.0     38.2      1.3
   AREA=       .8     31.8    522.9    529.0    979.3     85.2
    VEL=       .8      1.7      1.5      1.3      1.0       .4
  DEPTH=       .8      1.3      2.3      1.8      1.2       .3

*SECNO 3.390
     3.390      2.56    998.36       .00       .00    998.40       .04       .56       .01    996.00
    2795.0      29.1    1717.7    1048.2      23.3     835.9    1410.4     919.2     628.4    996.00
      4.17      1.25      2.05       .74      .040      .040      .070      .000    995.80   9838.51
   .000922      500.      500.      500.         2         0         0       .00   1796.76  11635.28


FLOW DISTRIBUTION FOR SECNO=      3.39          CWSEL=    998.36

STA=    9839.    9855.    9870.   10210.   11150.   11410.   11635.
  PER Q=       .0      1.0     61.5     36.1      1.1       .3
   AREA=      3.0     20.4    835.9   1276.9     93.2     40.4
    VEL=       .4      1.4      2.1       .8       .3       .2
  DEPTH=       .2      1.4      2.5      1.4       .4       .2

*SECNO 3.485

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .68

     3.485      2.00    999.00       .00       .00    999.06       .06       .65       .00    998.00
    2795.0      12.4    1617.5    1165.1      12.0     668.0    1189.5     942.9     649.2    997.00
      4.24      1.04      2.42       .98      .040      .040      .070      .000    997.00   9851.05
   .001968      500.      500.      500.         2         0         0       .00   1821.99  11673.04


FLOW DISTRIBUTION FOR SECNO=      3.48          CWSEL=    999.00

STA=    9851.    9875.   10250.   10730.   11673.
  PER Q=       .4     57.9     31.7     10.0
   AREA=     12.0    668.0    719.0    470.5
    VEL=      [illegible]
```

DEPTH= .3 1.3 1.5 .5

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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	XLOSL	XLOSR	XL PR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

XSECNO 3.578

3.578	2.46	999.86	.00	.00	999.93	.07	.87	.00	998.00
2795.0	45.0	1998.1	751.8	31.4	806.1	929.5	963.4	669.7	998.00
4.31	1.43	2.48	.81	.040	.040	.070	.000	997.40	9910.50
.001605	490.	490.	490.	1	0	0	.00	1819.97	11730.48

FLOW DISTRIBUTION FOR SECNO= 3.58 CWSEL= 999.86

STA=	9911.	9945.	10320.	11190.	11450.	11730.
PER Q=	1.6	71.5	26.5	.3	.1	
AREA=	31.3	806.1	869.7	38.9	21.0	
VEL=	1.4	2.5	.9	.2	.2	
DEPTH=	.9	2.1	1.0	.1	.1	

XSECNO 3.671

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .70

3.671	1.86	1000.96	.00	.00	1001.02	.07	1.09	.00	1000.00
2795.0	13.9	1195.9	1585.2	10.6	444.4	1143.7	982.3	690.0	999.10
4.38	1.31	2.69	1.39	.040	.040	.070	.000	999.10	9952.90
.003346	490.	490.	490.	2	0	0	.00	1789.37	11742.27

FLOW DISTRIBUTION FOR SECNO= 3.67 CWSEL= 1000.96

STA=	9953.	9975.	10290.	10950.	11260.	11742.
PER Q=	.5	42.8	51.2	5.2	.3	
AREA=	10.6	444.4	931.1	173.8	38.8	
VEL=	1.3	2.7	1.5	.8	.2	
DEPTH=	.5	1.4	1.4	.6	.1	

XSECNO 3.763

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.84

59TH AVENUE

3.763	2.40	1001.30	.00	.00	1001.83	.03	.81	.00	1000.00
2795.0	41.3	1438.8	1314.9	34.8	741.8	1694.5	1005.2	711.1	999.70
4.48	1.19	1.94	.78	.040	.040	.070	.000	999.40	9920.03
.000982	490.	490.	490.	2	0	0	.00	1973.71	11893.74

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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	XLOSL	XLOSR	XLOSR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

```
STA=    9920.    9955.   10300.   10860.   11894.
  PER Q=      1.5     51.5     33.6     13.4
   AREA=     34.8    741.8    975.3    719.2
    VEL=      1.2      1.9      1.0       .5
  DEPTH=      1.0      2.2      1.7       .7

*SECNO 3.858
     3.858      2.78   1002.28       .00       .00   1002.33       .05       .49       .00   1000.00
    2976.0      37.1    1740.6    1198.4      27.9     809.8    1655.2    1033.7     734.4   1000.00
      4.57      1.33      2.15       .72      .040      .040      .070      .000    999.50   9920.06
   .000971      500.      500.      500.         3         0         0       .00   2079.23  11999.29


FLOW DISTRIBUTION FOR SECNO=      3.86          CWSEL=   1002.28

STA=    9920.    9923.    9945.   10265.   10470.   10900.   11220.   11650.   11900.   11999.
  PER Q=       .0      1.2     58.5     11.9     14.4      6.9      5.7      1.4       .0
   AREA=       .7     27.2    809.8    365.0    550.6    313.8    314.1    107.6      4.0
    VEL=       .5      1.4      2.1      1.0       .8       .7       .5       .4       .1
  DEPTH=       .2      1.2      2.5      1.9      1.3      1.0       .7       .4       .0

*SECNO 3.953
     3.953      3.17   1002.67       .00       .00   1002.70       .03       .37       .00   1000.00
    2976.0      42.7    1721.9    1211.4      35.6     972.9    1931.9    1064.9     758.4   1000.00
      4.67      1.20      1.77       .63      .040      .040      .070      .000    999.50   9942.98
   .000581      500.      500.      500.         2         0         0       .00   2105.86  12048.84


FLOW DISTRIBUTION FOR SECNO=      3.95          CWSEL=   1002.67

STA=    9943.    9950.    9970.   10320.   10700.   10930.   11230.   11500.   11820.   12000.   12049.
  PRR Q=       .0      1.4     57.9     21.0      6.6      5.3      3.3      3.9       .6       .0
   AREA=      2.3     33.3    972.9    765.6    313.9    304.4    220.0    260.7     65.7      1.6
    VEL=       .4      1.3      1.8       .8       .6       .5       .4       .4       .3       .1
  DEPTH=       .3      1.7      2.8      2.0      1.4      1.0       .8       .8       .4       .0

*SECNO 4.046
     4.046      3.23   1003.03       .00       .00   1003.08       .05       .38       .01   1000.00
    2976.0      27.4    1921.6    1027.0      17.3     880.3    1496.3    1094.9     782.1   1001.50
      4.76      1.58      2.18       .69      .040      .040      .070      .000    999.80   9968.61
   .001067      490.      490.      490.         1         0         0       .00   2103.02  12071.63
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	QLOSS	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

```
FLOW DISTRIBUTION FOR SECNO=      4.05          CWSEL=   1003.03

STA=    9969.    9980.   10350.   10860.   11180.   11230.   11270.   11470.   12072.
  PER Q=       .9     64.6     19.0      4.7       .4       .6      5.0      4.7
   AREA=     17.3    880.3    692.3    236.2     26.9     31.5    207.5    312.0
    VEL=      1.6      2.2       .8       .6       .5       .6       .7       .5
  DEPTH=      1.5      2.4      1.3       .8       .5       .8      1.0       .5

*SECNO 4.143
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    4.143      2.33   1003.83       .00       .00   1003.91       .08       .82       .01   1005.40
   2976.0        .0    1638.3    1337.7        .0     544.2    1398.9    1120.5     807.1   1002.00
     4.82       .00      3.01       .96      .000      .040      .070      .000   1001.50   9971.24
  .002564      515.      515.      515.         2         0         0       .00   2125.11  12096.35


FLOW DISTRIBUTION FOR SECNO=      4.14          CWSEL=   1003.83

STA=    9971.   10240.   11240.   11260.   11530.   11975.   12096.
  PER Q=      55.1      35.2        .0       2.9       6.6        .2
   AREA=     544.2     984.8       2.7     130.9     260.2      20.3
    VEL=       3.0       1.1        .3        .7        .8        .3
  DEPTH=       2.0       1.0        .1        .5        .6        .2

*SECNO 4.238
    4.238      2.78   1004.78       .00       .00   1004.84       .05       .92       .00   1002.00
   2976.0      41.4    1694.1    1240.5      24.2     712.2    1561.9    1144.8     831.3   1003.10
     4.91      1.71      2.38       .79      .040      .040      .070      .000   1002.00   9967.60
  .001382      500.      500.      500.         1         0         0       .00   2094.36  12061.95


FLOW DISTRIBUTION FOR SECNO=      4.24          CWSEL=   1004.78

STA=    9968.    9985.   10300.   11130.   11230.   11260.   11650.   12062.
  PER Q=       1.4      56.9      31.3        .9        .3       6.9       2.3
   AREA=      24.2     712.2    1024.8      53.5      16.0     306.0     161.6
    VEL=       1.7       2.4        .9        .5        .5        .7        .4
  DEPTH=       1.4       2.3       1.2        .5        .5        .8        .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


*SECNO 4.331
    4.331      2.90   1005.60       .00       .00   1005.66       .06       .83       .00   1006.00
   2976.0        .0    1865.0    1111.0        .0     784.2    1318.0    1169.6     855.0   1004.00
     4.98       .00      2.38       .84      .000      .040      .070      .000   1002.70   9973.60
  .002110      490.      490.      490.         2         0         0       .00   2121.34  12094.94


FLOW DISTRIBUTION FOR SECNO=      4.33          CWSEL=   1005.60

STA=    9974.   10450.   12090.
  PER Q=      62.7      37.3
   AREA=     784.2    1318.0
    VEL=       2.4        .8
  DEPTH=       1.6        .8

*SECNO 4.425
    4.425      2.43   1006.43       .00       .00   1006.49       .06       .83       .00   1004.00
   2976.0      23.9    2170.8     781.4      15.6     976.3    1077.5    1193.5     879.0   1004.70
     5.06      1.53      2.22       .73      .040      .040      .070      .000   1004.00   9972.20
  .001332      500.      500.      500.         1         0         0       .00   2066.02  12038.22


FLOW DISTRIBUTION FOR SECNO=      4.43          CWSEL=   1006.43

STA=    9972.    9985.   10450.   11240.   11810.   12038.
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   VEL=      1.5      2.2       .8       .4       .2
  DEPTH=     1.2      2.1      1.1       .3       .1

*SECNO 4.520
    4.520     3.11   1007.11      .00     -.00   1007.14      .03      .65      .00   1010.00
   2976.0       .0    1493.8    1482.2       .0     818.9    1683.9    1219.8    903.1   1005.00
     5.16      .00     1.82      .88     .000      .040     .070     .000   1004.00   9998.45
  .001261     500.     500.     500.        2         0        0      .00   2133.42  12131.87


FLOW DISTRIBUTION FOR SECNO=      4.52          CWSEL=   1007.11

STA=    9998.   10500.   11240.   12132.
  PER Q=     50.2     41.4      8.4
   AREA=    818.9   1189.9    494.1
    VEL=      1.8      1.0       .5
  DEPTH=      1.6      1.6       .6

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    SECNO     DEPTH     CWSE.     CRIWS     WSELK     EG        HV        HL        CLOSS     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


*SECNO 4.615
    4.615     1.91   1007.91      .00      .00   1007.99      .07      .83      .01   1006.00
   2976.0     27.6    2060.2    888.2     16.0     824.0    1064.6    1245.1    928.6   1006.50
     5.23     1.72     2.50      .83     .040      .040     .070     .000   1006.00   9928.25
  .002296     500.     500.     500.        2         0        0      .00   2301.80  12230.04


FLOW DISTRIBUTION FOR SECNO=      4.61          CWSEL=   1007.91

STA=    9928.    9945.   10440.   11800.   12230.
  PER Q=       .9     69.2     29.7       .1
   AREA=     16.0    824.0   1040.0     24.7
    VEL=      1.7      2.5       .9       .2
  DEPTH=      1.0      1.7       .8       .1

*SECNO 4.714
    4.714     3.03   1009.03      .00      .00   1009.07      .04     1.08      .00   1006.00
   2976.0     50.5    1303.6   1621.9     22.9     642.3    1708.8    1268.4    954.8   1007.50
     5.32     2.21     2.03      .95     .040      .040     .070     .000   1006.00   9714.86
  .002081     475.     525.     450.        3         0        0      .00   2600.30  12315.16


FLOW DISTRIBUTION FOR SECNO=      4.71          CWSEL=   1009.03

STA=    9715.    9730.   10220.   10800.   10990.   12310.
  PER Q=      1.7     43.8     32.2      7.5     14.8
   AREA=     22.9    642.3    798.9    214.2    695.9
    VEL=      2.2      2.0      1.2      1.0       .6
  DEPTH=      1.5      1.3      1.4      1.1       .5

*SECNO 4.803
        51ST AVENUE
    4.803     1.63   1009.83      .00      .00   1009.87      .04      .80      .00   1009.80
   2976.0     17.6    2141.6    816.8     17.8    1133.4    1062.3    1285.4    972.8   1008.50
     5.39      .99     1.59      .77     .040      .040     .070     .000   1008.20   9367.66
  .002277     420.     470.     225.        1         0        0      .00   2678.51  12046.17
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FLOW DISTRIBUTION FOR SECNO=      4.80          CWSEL=   1009.83

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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        QLOSS     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       ICCNT     CORAR     TOPWID    ENDST


STA=    9368.    9380.    9410.   10440.   12046.
  PER Q=       .2       .4     72.0     27.4
   AREA=      5.1     12.7   1133.4   1062.3
    VEL=      1.0      1.0      1.9       .8
  DEPTH=       .4       .4      1.1       .7

1490 NH CARD USED
*SECNO 4.898

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE.  KRATIO =  1.40

     4.898      2.41   1010.61       .00       .00   1010.62       .01       .75       .00   1009.00
    3089.0     475.1    1296.2    1317.7     598.6    1218.4    1561.3    1313.8    1000.9   1008.20
      5.53       .79      1.06       .84      .070      .070      .067      .000   1008.20   9023.47
   .001246      410.      500.      400.         1         0         0       .00   2990.05  12013.51


FLOW DISTRIBUTION FOR SECNO=      4.90          CWSEL=   1010.61

STA=    9023.    9035.    9045.    9085.    9580.   10300.   10640.   11610.   12014.
  PER Q=       .3       .3       .4     14.4     42.0     22.9     18.4      1.4
   AREA=     11.6     11.1     24.5    551.3   1218.4    599.7    837.8    123.8
    VEL=       .8       .8       .5       .8      1.1      1.2       .7       .3
  DEPTH=      1.0      1.1       .6      1.1      1.7      1.8       .9       .3

1490 NH CARD USED
*SECNO 4.993
     4.993      1.70   1011.20       .00       .00   1011.21       .02       .59       .00   1010.00
    3089.0     146.4    1561.5    1381.1     251.6    1406.4    1601.8    1346.2    1029.7   1009.60
      5.65       .58      1.11       .86      .070      .067      .070      .000   1009.50   8997.31
   .001500      550.      500.      330.         2         0         0       .00   3087.97  12085.28


FLOW DISTRIBUTION FOR SECNO=      4.99          CWSEL=   1011.20

STA=    8997.    9420.   10000.   10370.   11100.   12085.
  PER Q=      4.7     26.3     24.2     33.7     11.0
   AREA=    251.6    799.3    607.1   1015.2    586.6
    VEL=       .6      1.0      1.2      1.0       .6
  DEPTH=       .6      1.4      1.6      1.4       .6

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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        QLOSS     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       ICCNT     CORAR     TOPWID    ENDST


*SECNO 5.087
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3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .69

5.087	1.52	1012.02	.00	.00	1012.05	.02	.83	.00	1011.80
3099.0	22.3	1479.4	1537.3	42.9	1198.7	1364.4	1372.3	1056.3	1011.00
5.74	.52	1.23	1.16	.055	.070	.070	.000	1010.50	9145.77
.003143	630.	500.	280.	2	0	0	.00	2899.34	12045.11

FLOW DISTRIBUTION FOR SECNO= 5.09 CWSEL= 1012.02

STA=	9146.	9230.	9310.	9345.	9375.	10510.	11210.	12010.	12045.
PER Q=	.1	.3	.	.1	47.9	35.3	16.0	.0	
AREA=	10.1	18.1	7.9	6.3	1198.7	823.2	540.8	.5	
VEL=	.4	.6	.6	.6	1.2	1.3	.9	.1	
DEPTH=	.1	.2	.2	.2	1.1	1.2	.7	.0	

*SECNO 5.182

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.83

5.182	1.91	1012.91	.00	.00	1012.92	.01	.87	.00	1012.00
3089.0	41.0	1510.9	1537.1	74.6	1661.7	1752.1	1406.4	1096.0	1011.00
5.39	.55	.91	.88	.055	.070	.070	.000	1011.00	9191.13
.001182	490.	500.	440.	2	0	0	.00	2776.54	11967.67

FLOW DISTRIBUTION FOR SECNO= 5.18 CWSEL= 1012.91

STA=	9191.	9355.	10550.	10720.	11500.	11880.	11968.
PER Q=	1.3	48.9	7.1	32.7	9.9	.0	
AREA=	74.6	1661.7	239.8	1100.1	402.9	9.2	
VEL=	.5	.9	.9	.9	.8	.2	
DEPTH=	.5	1.4	1.4	1.4	1.1	.1	

*SECNO 5.277

5.277	1.81	1013.31	.00	.00	1013.32	.01	.40	.00	1012.00
3089.0	60.6	1341.5	1686.9	119.6	1516.6	1968.2	1436.3	1110.9	1011.80
6.01	.51	.88	.86	.070	.070	.070	.000	1011.50	9331.98
.001003	630.	500.	240.	3	0	0	.00	2586.46	11918.44

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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

FLOW DISTRIBUTION FOR SECNO= 5.28 CWSEL= 1013.31

STA=	9332.	9515.	10520.	11095.	11135.	11200.	11560.	11840.	11918.
PER Q=	2.0	43.4	22.1	1.0	1.6	16.4	12.6	.8	
AREA=	119.6	1516.6	809.2	42.3	68.7	560.6	436.0	51.3	
VEL=	.5	.9	.8	.7	.7	.9	.9	.5	
DEPTH=	.7	1.5	1.4	1.1	1.1	1.6	1.5	.7	

*SECNO 5.371

5.371	1.98	1013.78	.00	.00	1013.79	.01	.47	.00	1013.00
3089.0	49.9	1214.6	1624.5	144.4	1273.2	2053.0	1475.7	1139.3	1011.50
6.16	.35	.95	.89	.070	.070	.070	.000	1011.50	9332.64
.000936	510.	500.	470.	2	0	0	.00	2492.90	11925.44

FLOW DISTRIBUTION FOR SECNO= 5.37 CWSEL= 1013.75

STA=	9333.	9705.	10420.	11235.	11625.
PER Q=	1.6	39.3	49.9	10.2	
AREA=	144.4	1273.2	1528.7	524.2	
VEL=	.3	1.0	1.0	.6	
DEPTH=	.4	1.8	1.9	.9	

*SECNO 5.466

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .35

5.466	1.35	1014.75	.00	.00	1014.79	.04	.99	.01	1014.00
3089.0	387.8	615.8	2085.3	287.0	397.1	1192.2	1505.3	1167.4	1014.00
6.24	1.35	1.55	1.75	.070	.070	.070	.000	1013.40	9323.99
.007640	500.	500.	470.	3	0	0	.00	2575.50	11899.48

FLOW DISTRIBUTION FOR SECNO= 5.47 CWSEL= 1014.75

STA=	932-	9590.	9840.	10370.	10800.	11270.	11890.	11899.
PER Q=	[illegible]	9.4	19.9	28.4	31.0	8.2	.0	
AREA=	99.7	187.3	397.1	451.2	493.2	247.6	.2	
VEL=	1.0	1.6	1.6	1.9	1.9	1.0	.2	
DEPTH=	.4	.7	.7	1.0	1.0	.4	.0	

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	DLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	XTW	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 5.561

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 3.00

5.561	2.09	1015.59	.00	.00	1015.59	.01	.80	.00	1014.00
2175.0	150.1	665.7	1359.2	396.1	1004.0	2304.3	1540.8	1199.6	1013.50
6.50	.38	.66	.59	.070	.070	.070	.000	1013.50	9407.43
.000432	380.	500.	610.	4	0	0	.00	2609.07	12016.50

FLOW DISTRIBUTION FOR SECNO= 5.56 CWSEL= 1015.59

STA=	9407.	9905.	10450.	11040.	11900.	12017.
PER Q=	6.9	30.6	33.1	28.5	.9	
AREA=	396.1	1004.0	1086.9	1154.3	63.6	
VEL=	.4	.7	.7	.5	.3	
DEPTH=	.8	1.8	1.8	1.3	.5	

*SECNO 5.656

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .49

5.656	2.04	1016.04	.00	.00	1016.06	.02	.46	.00	1015.20
2175.0	97.0	715.9	1362.1	175.2	662.4	1220.9	1579.5	1234.4	1014.20
6.65	.55	1.10	1.12	.070	.070	.070	.000	1014.00	9439.50
.001799	380.	500.	660.	3	0	0	.00	2617.96	12057.45

FLOW DISTRIBUTION FOR SECNO= 5.66 CWSEL= 1016.14

```
STA=   9400.   9500.   9845.  10330.  10710.  10765.  10780.  10825.  11050.  11600.  12057.
  PER Q=      .0      4.4     32.9     47.7      7.5       .7       .0       .9      4.3      1.0
   AREA=     4.4    170.8    652.4    739.2    112.5     15.7      2.0     55.2    217.4     79.0
    VEL=      .2       .6      1.1      1.4      1.5       .9       .1       .4       .5       .3
  DEPTH=      .1       .5      1.3      1.9      2.0      1.0       .0       .2       .4       .2

1490 NH CARD USED
*SECNO 5.750

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .69

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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

     5.750      1.50   1017.40       .00       .00   1017.43       .03      1.36       .00   1016.00
    2175.0     380.1     729.3    1065.6     369.3     436.0     993.2    1603.4    1267.4   1016.00
      6.77      1.03      1.67      1.07      .070      .070      .070      .000   1015.90   9323.71
   .003770      375.      500.      600.         3         0         0       .00   2648.88  11972.59

FLOW DISTRIBUTION FOR SECNO=      5.75          CWSEL=   1017.40

STA=    9324.    9850.   10150.   10490.   10520.   10530.   10800.   11965.   11973.
  PER Q=     17.5     33.5     31.7      1.2       .1      3.6     12.3       .0
   AREA=    369.3    436.0    443.2     24.1      4.0    108.9    411.8      1.2
    VEL=      1.0      1.7      1.6      1.1       .7       .7       .7       .4
  DEPTH=       .7      1.5      1.3       .8       .4       .4       .4       .2

1490 NH CARD USED
*SECNO 5.845
     5.845      1.61   1018.81       .00       .00   1018.83       .02      1.40       .00   1017.50
    2175.0     366.7     562.9    1245.4     416.7     485.2    1347.3    1626.6    1297.4   1018.00
      6.91       .88      1.16       .92      .070      .070      .070      .000   1017.20   9316.83
   .002156      500.      500.      500.         2         0         0       .00   2578.13  11894.96

FLOW DISTRIBUTION FOR SECNO=      5.84          CWSEL=   1018.81

STA=    9317.    9625.    9900.   10280.   10325.   10450.   10750.   11180.   11460.   11700.   11865.   11895.
  PER Q=      3.1     13.8     25.9      1.4      7.8     18.7     13.7      7.2      6.2      2.2       .0
   AREA=    125.0    291.8    485.2     36.5    151.4    363.3    348.7    199.1    170.6     76.1      1.7
    VEL=       .5      1.0      1.2       .9      1.1      1.1       .9       .8       .8       .6       .2
  DEPTH=       .4      1.1      1.3       .8      1.2      1.2       .8       .7       .7       .5       .1

1490 NH CARD USED
*SECNO 5.940
     5.940      1.81   1019.81       .00       .00   1019.83       .02      1.01       .00   1018.00
    2175.0     314.7     886.3     974.0     271.3     669.8    1098.4    1651.2    1323.2   1018.20
      7.04      1.16      1.32       .89      .070      .070      .070      .000   1018.00   9673.18
   .001889      500.      500.      500.         2         0         0       .00   1925.96  11599.13

FLOW DISTRIBUTION FOR SECNO=      5.94          CWSEL=   1019.81

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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


STA=    9673.    9720.    9880.   10270.   10550.   11580.   11599.
  PER Q=       .9     13.6     40.8     22.5     22.3       .0
   AREA=     28.5    242.8    669.8    410.9    687.4       .2
    VEL=       .7      1.2      1.3      1.2       .7       .0
  DEPTH=       .6      1.5      1.7      1.5       .7       .0

*SECNO 6.034

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .61

     6.034      1.81   1021.51       .00       .00   1021.54       .03      1.71       .00   1021.00
    2175.0      29.3    1510.2     635.4      27.4    1175.4     410.2    1676.1    1351.6   1021.00
      7.16      1.07      1.28      1.55      .040      .100      .040      .000   1019.70   9172.71
   .005121      380.      500.      750.         2         0         0       .00   1944.16  11116.87


FLOW DISTRIBUTION FOR SECNO=      6.03          CWSEL=   1021.51

STA=    9173.    9280.   10165.   11005.   11117.
  PER Q=      1.3     69.4     28.2      1.0
   AREA=     27.4   1175.4    387.2     23.0
    VEL=      1.1      1.3      1.6       .9
  DEPTH=       .3      1.3       .5       .2

1490 NH CARD USED
*SECNO -2.832
START TRIB COMP
     -2.832     2.832   994.840
    -2.832      4.84    994.84       .00       .00    994.85       .01       .00       .00    992.00
    3231.0     916.8    1207.3    1106.8    1133.4    1477.0    2135.6    1725.9    1387.8    992.00
      7.44       .81       .82       .52      .057      .070      .069      .000    990.00   8969.87
   .000369      700.      850.      500.         0         0         0       .00   3080.50  12050.36


FLOW DISTRIBUTION FOR SECNO=     -2.83          CWSEL=    994.84

STA=    8970.    9245.    9500.    9585.    9615.    9635.   10155.   10395.   11035.   11260.   11985.   12050.
  PER Q=      8.3      9.8      6.0      3.6       .8     37.4     11.6     15.7      3.3      3.7       .0
   AREA=    361.4    405.6    211.4    115.2     39.8   1477.0    537.7    953.9    245.4    394.1      4.6
    VEL=       .7       .8       .9      1.0       .6       .8       .7       .5       .4       .3       .1
  DEPTH=      1.3      1.6      2.5      3.8      2.0      2.8      2.2      1.5      1.1       .5       .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


1490 NH CARD USED
*SECNO 2.926

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .59
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... IN THE SOUTHSIDE. THE Q-100 FOR THE SOUTHSIDE
IS 868 CFS AND IS USED AS A MINIMUM DISCHARGE.

2.926	1.61	995.01	.00	.00	995.02	.00	.17	.00	993.40
1660.0	1187.4	328.5	147.0	2382.5	525.9	357.7	1771.9	1418.4	993.40
7.71	.50	.62	.41	.066	.055	.070	.000	993.40	8181.28
.000281	500.	500.	500.	1	0	0	.00	2239.63	10420.91

FLOW DISTRIBUTION FOR SECNO= 2.93 CWSEL= 995.01

STA=	8181.	8250.	8325.	8710.	9800.	10125.	10340.	10360.	10385.	10405.	10421.
PER Q=	.6	2.1	16.6	52.1	19.8	7.3	.4	.6	.4	.1	
AREA=	35.0	76.4	507.5	1763.7	525.9	283.4	20.4	25.5	20.4	8.1	
VEL=	.3	.5	.5	.5	.6	.4	.4	.4	.4	.2	
DEPTH=	.5	1.0	1.3	1.6	1.6	1.3	1.0	1.0	1.0	.5	

1490 NH CARD USED
*SECNO 3.021

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .65

3.021	1.72	995.22	.00	.00	995.22	.01	.21	.00	994.00
1651.0	1105.1	542.1	3.7	1669.3	704.8	4.8	1304.3	1442.2	994.00
7.91	.66	.77	.78	.069	.056	.035	.000	993.50	8502.19
.000660	500.	500.	500.	2	0	0	.00	1910.74	10412.93

FLOW DISTRIBUTION FOR SECNO= 3.02 CWSEL= 995.22

STA=	8502.	8645.	8705.	8985.	9425.	9640.	9815.	10135.	10345.	10405.	10413.
PER Q=	2.6	2.7	17.5	27.5	9.2	7.5	18.6	9.0	5.3	.2	
AREA=	86.8	72.9	410.3	644.8	220.6	203.9	388.9	244.7	71.2	4.8	
VEL=	.5	.6	.7	.7	.6	.6	.8	.6	1.2	.8	
DEPTH=	.6	1.2	1.5	1.5	1.2	1.2	1.2	1.2	1.2	.6	

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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

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .65

3.121	1.44	995.64	.00	.00	995.65	.01	.43	.00	994.20
1359.0	765.7	590.2	3.1	1105.8	650.3	4.8	1829.5	1465.0	995.00
8.09	.69	.91	.65	.070	.058	.035	.000	994.20	8559.00
.001061	530.	530.	530.	2	0	0	.00	1836.07	10395.06

FLOW DISTRIBUTION FOR SECNO= 3.12 CWSEL= 995.64

STA=	8559.	9000.	9800.	10135.	10380.	10395.
PER Q=	5.7	50.6	33.2	10.3	.2	
AREA=	193.7	912.1	432.2	218.1	4.8	
VEL=	.4	.9	1.0	.6	.6	
DEPTH=	.4	1.1	1.3	.9	.3	

*SECNO 3.209

3.209	1.98	995.99	.00	.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

3.39	.44	.49	.27	.070	.070	.070	.000	994.00	8518.32
.000419	490.	490.	490.	2	0	0	.00	1881.59	10399.91

FLOW DISTRIBUTION FOR SECNO= 3.21 CWSEL= 995.99

STA=	8518.	8975.	9430.	9800.	10390.	10400.
PER Q=	9.6	20.6	30.2	39.4	.2	
AREA=	[illegible]	428.3	496.3	701.4	4.9	
VEL=	.3	.4	.5	.5	.3	
DEPTH=	[illegible]	.9	1.3	1.2	.5	

*SECNO 3.303

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .15

3.303	1.60	996.60	.00	.00	996.63	.03	.63	.01	996.50
968.0	477.8	355.5	34.7	358.3	234.9	12.4	1864.5	1507.0	995.00
8.48	1.33	1.51	2.80	.070	.070	.070	.000	995.00	8564.42
.017747	500.	500.	500.	7	0	0	.00	1800.35	10364.78

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QRCB	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

FLOW DISTRIBUTION FOR SECNO= 3.30 CWSEL= 996.60

STA=	8564.	8605.	8930.	9750.	10350.	10360.	10365.
PER Q=	1.3	27.7	26.0	41.0	3.8	.2	
AREA=	10.1	145.4	202.8	234.9	11.0	1.4	
VEL=	1.1	1.7	1.1	1.5	3.0	1.3	
DEPTH=	.2	.4	.2	.4	1.1	.3	

*SECNO 3.398

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 4.91

3.398	1.65	997.65	.00	.00	997.65	.01	1.02	.00	996.60
868.0	363.7	473.4	30.9	655.1	673.8	41.7	1875.8	1524.6	996.00
8.70	.56	.70	.74	.070	.070	.070	.000	996.00	9064.26
.000736	500.	500.	500.	6	0	0	.00	1266.37	10330.63

FLOW DISTRIBUTION FOR SECNO= 3.40 CWSEL= 997.65

STA=	9064.	9235.	9800.	10300.	10320.	10331.
PER Q=	5.0	36.9	54.5	3.0	.5	
AREA=	115.6	539.5	673.8	33.0	8.8	
VEL=	.4	.6	.7	.8	.5	
DEPTH=	.5	1.0	1.3	1.6	.8	

*SECNO 3.491

3.491	2.08	998.08	.00	.00	998.09	.01	.43	.00	997.00
868.0	125.7	736.5	5.8	270.2	772.0	8.3	1889.4	1538.5	996.00
8.86	.47	.95	.70	.070	.070	.070	.000	996.00	9097.50
.001087	490.	490.	490.	4	0	0	.00	1195.49	10292.99

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STA=    9097.    9250.    9355.    9800.   10255.   10297.
  PER Q=      .1       .1     14.3     84.8       .7
   AREA=     5.8      8.0    256.4    772.0      8.3
    VEL=      .1       .1       .5      1.0       .7
  DEPTH=      .0       .1       .6      1.6      1.0
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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

*SECNO 3.584

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .55

     3.584      2.94    998.94       .00       .00    998.98       .03       .99       .01    998.00
     868.0     237.9     419.9     210.4     311.4     333.5      94.7    1989.5    1551.0    998.00
      8.96       .76      1.26      2.22      .070      .070      .070      .000    996.00   9212.58
   .003539      490.      490.      490.         1         0         0       .00   1041.90  10254.48

FLOW DISTRIBUTION FOR SECNO=      3.58          CWSEL=    998.94

STA=    9213.    9875.   10210.   10225.   10240.   10250.   10254.
  PER Q=     27.4     48.4      6.5     13.2      4.3      .2
   AREA=    311.4    333.5     29.1     44.1     19.4     2.1
    VEL=       .8      1.3      2.0      2.6      1.9      .8
  DEPTH=       .5      1.0      1.9      2.9      1.9      .5

*SECNO 3.678

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.45

     3.678      1.35  1000.15       .00       .00  1000.16       .01      1.18       .00    998.30
     868.0     568.5     299.5        .0     650.3     341.8        .1    1909.5    1562.8   1000.00
      9.11       .87       .88       .01      .070      .070      .070      .000    998.30   9179.79
   .001693      500.      500.      500.         2         0         0       .00   1011.07  10190.86

FLOW DISTRIBUTION FOR SECNO=      3.68          CWSEL=   1000.15

STA=    9180.    9205.    9850.   10190.
  PER Q=      .0     65.5     34.5
   AREA=     2.0    648.3    341.8
    VEL=      .2       .9       .9
  DEPTH=      .1      1.0      1.0

*SECNO 3.773
     3.773      1.14  1001.14       .00       .00  1001.15       .02       .99       .00   1000.00
     868.0     505.2     361.9      1.0     525.4     320.9      1.4    1920.0    1574.0   1000.00
      9.25       .95      1.13       .67      .070      .070      .070      .000   1000.00   9196.09
   .002352      500.      500.      500.         2         0         0       .00    926.40  10132.49
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   SECNO     DEPTH     CWSEL     [illegible]
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TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	[illegible]	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 3.77 CWSEL= 1001.14

[illegible]	9196.	9560.	9850.	10130.	10132.
PER Q=	18.0	40.2	41.7	.1
AREA=	220.[illegible]	309.4	320.9	1.4
VEL=	.7	1.1	1.1	.7
DEPTH=	.5	1.1	1.1	.6

*SECNO 3.868

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.66

3.868	1.51	1001.81	.00	.00	1001.82	.01	.66	.00	1000.30
868.0	813.8	54.2	.0	1094.9	106.0	.0	1931.8	1585.3	1002.00
9.44	.74	.51	.00	.070	.070	.000	.000	1000.30	9021.72
.000851	500.	500.	500.	2	0	0	[illegible]	1029.54	10051.26

FLOW DISTRIBUTION FOR SECNO= 3.87 CWSEL= 1001.81

STA=	9022.	9280.	9910.	10070.
PER Q=	10.2	83.6	6.2
AREA=	180.9	914.0	106.0
VEL=	.5	.8	.5
DEPTH=	.7	1.5	.8

THIS RUN EXECUTED 28APR92 07:57:49

****
HEC-2 WATER SURFACE PROFILES

Version 4.5.1; September 1990
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

PION DRAIN FLOODPLAIN RU

SUMMARY PRINTOUT

	SECNO	CWSEL	VCH	ELMIN	TOPWID	DEPTH	QLOB	QCH	QROB	VLOB	VROB	SSTA	ENDST
	.593	980.44	2.28	978.50	737.89	1.94	.59	1080.05	78.35	.84	.63	9941.74	11356.98
	.688	982.14	1.87	980.40	1470.85	1.74	.00	364.38	794.62	.00	1.16	9922.81	11393.67
*	.782	982.87	[illegible]	[illegible]	[illegible]	1.57	.00	363.67	795.37	.00	.60	9919.42	11708.45
	.866	983.29	1.48	981.70	1903.73	1.59	.00	384.86	740.14	.00	.64	9920.60	11824.77
*	1.156	987.37	1.44	984.00	2045.61	3.37	18.03	675.66	2266.31	.83	1.22	9840.00	11885.61
*	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				

x	1.832	988.65	.57	984.20	2540.72	4.45	.00	2759.36	344.84	.00	.20	9840.00	12383.72
	1.830	988.69	.62	985.00	3058.13	3.69	394.23	2327.68	382.09	.29	.20	9195.35	12166.48
x	1.924	988.76	1.46	986.00	2720.55	2.76	864.65	1799.37	439.98	1.10	.65	9172.86	11926.73
	1.919	989.31	1.40	987.30	2166.11	2.81	219.99	665.51	2218.50	.70	1.26	9586.65	11608.80
	2.114	989.77	1.74	988.00	1714.46	1.77	.00	2626.06	477.94	.00	.63	9775.57	11490.03
	2.209	990.21	1.51	988.00	1577.06	2.21	.02	3021.91	82.07	.22	.42	9763.97	11341.03
x	2.303	990.90	2.19	989.10	1736.12	1.80	4.37	2824.47	275.17	1.42	.82	9763.21	11499.34
	2.398	993.06	1.53	990.00	2038.38	3.06	64.16	1873.03	1216.81	1.82	1.36	9732.02	11770.40
x	2.516	994.07	1.08	990.00	2432.10	4.07	1.64	1837.41	1314.96	.15	.76	9541.46	11973.56
x	2.532	994.84	.72	991.10	3045.71	3.74	625.02	2329.91	276.09	.78	.37	9099.61	11165.32
x	3.013	995.77	1.76	994.00	1071.33	1.77	.00	694.43	871.87	.00	1.32	9784.35	10855.68

1

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	SECNO	DWSEL	VCH	ELMIN	TOPWID	DEPTH	WLOB	QCH	QFOB	VLOB	VROB	SBTA	ENDST
x	3.109	996.56	1.19	994.50	1433.31	2.06	3.21	761.97	774.22	.79	.88	9770.00	11198.31
x	3.203	997.20	1.17	994.60	1449.59	2.60	28.13	839.91	904.95	1.10	.32	9815.00	11264.57
	3.296	997.92	1.52	995.00	1613.04	2.82	.68	840.95	1673.37	.82	1.05	9840.00	11453.04
	3.390	998.36	2.05	995.80	1796.76	2.56	29.09	1717.69	1048.22	1.25	.74	9838.51	11635.28
x	3.485	999.00	3.42	997.00	1821.09	2.00	13.33	1617.51	1165.11	1.04	.98	9851.05	11673.04
	3.578	999.36	2.48	997.40	1819.97	2.46	45.01	1998.15	751.84	1.43	.81	9910.50	11730.48
x	3.671	1000.96	2.69	999.10	1789.37	1.86	13.92	1195.91	1585.17	1.31	1.39	9952.90	11742.27
x	3.763	1001.80	1.94	999.40	1973.71	2.40	41.23	1438.83	1314.89	1.19	.78	9920.03	11893.74
	3.858	1002.28	2.15	999.50	2079.23	2.78	37.05	1740.57	1198.38	1.33	.72	9920.06	11999.29
	3.953	1002.67	1.77	999.50	2105.86	3.17	42.73	1721.91	1211.36	1.20	.63	9942.98	12048.54
	4.046	1003.03	2.18	999.80	2103.02	3.23	27.36	1921.63	1027.02	1.58	.69	9968.61	12071.63
x	4.143	1003.83	3.01	1001.50	2125.11	2.33	.00	1638.30	1337.70	.00	.96	9971.24	12096.35
	4.238	1004.73	2.38	1002.00	2394.36	2.73	41.37	1694.08	1240.55	1.71	.79	9967.60	12061.95
	4.331	1005.60	2.38	1002.70	2121.34	2.90	.00	1385.00	1111.00	.00	.84	9977.60	12094.34
	4.425	1006.43	2.22	1004.00	2066.02	2.43	22.57	2170.76	731.33	1.53	.72	9972.20	12038.22
	4.520	1007.11	1.82	1004.00	2122.42	3.11	.00	1498.30	1482.20	.00	.68	9998.45	12131.57
	4.615	1007.91	2.50	1006.00	2301.60	1.91	27.61	2360.15	583.24	1.72	.93	9928.25	12230.04
	4.714	[illegible]	2.03	1006.00	2600.30	2.03	30.52	[illegible]	[illegible]	[illegible]	.95	9714.86	12318.16
	4.808	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

x	[illegible]	1010.61	1.06	1008.20	2990.05	2.41	475.[illegible]	1296.20	[illegible]	.79	.84	9023.47	12013.51
	4.993	1011.20	1.11	1009.50	3087.97	1.70	146.40	1561.48	1381.11	.58	.85	8997.31	12085.28
x	5.087	1012.02	1.23	1010.50	2899.34	1.52	22.26	1479.44	1587.31	.52	1.16	9145.77	12045.11
	5.182	1012.91	.91	1011.00	2776.54	1.91	41.00	1510.85	1537.15	.55	.58	9191.13	11967.67
	5.27[illegible]	1013.31	.83	1011.50	2586.46	1.81	60.58	1341.48	1636.94	.51	.86	9331.96	11918.44
	5.[illegible]	1013.78	.95	1011.80	2492.60	1.98	49.88	1214.65	1824.47	.35	.89	9332.64	11825.44
x	5.466	1014.75	1.55	1013.40	2575.50	1.35	387.84	615.83	2085.34	1.35	1.75	9323.99	11899.48

1

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	SECNO	CWSEL	VCH	ELMIN	TOPWID	DEPTH	OLOB	GCH	OROB	VLOB	VROB	SSTA	ENDST
x	5.561	1015.59	.66	1013.[illegible]	2609.07	2.09	150.13	665.72	1359.[illegible]	.38	.59	9407.43	12016.50
x	5.656	1016.04	1.10	1014.00	2617.96	2.04	96.98	715.94	1362.08	.55	1.12	9439.50	12057.45
x	5.750	1017.40	1.67	1015.90	2648.88	1.50	380.14	729.28	1065.58	1.03	1.07	9323.71	11972.59
	5.845	1018.81	1.16	1017.20	2578.13	1.61	366.69	562.89	1245.42	.88	.92	9316.83	11894.96
	5.940	1019.81	1.32	1018.00	1925.96	1.81	314.71	886.32	973.97	1.16	.89	9673.18	11599.13
x	6.034	1021.51	1.28	1019.70	1944.16	1.81	29.33	1510.22	635.45	1.07	1.55	9172.71	11116.87
	-2.832	994.84	.82	990.00	3080.50	4.84	916.84	1207.32	1106.83	.81	.52	8969.87	12050.36
x	2.926	995.01	.62	993.40	2239.63	1.61	1187.43	328.54	147.02	.50	.41	8181.28	10420.91
x	3.021	995.22	.77	993.50	1910.74	1.72	1105.13	542.13	3.74	.66	.78	8502.19	10412.93
x	3.121	995.64	.91	994.20	1836.07	1.44	765.68	590.20	3.12	.69	.65	8559.00	10395.06
	3.209	995.99	.49	994.00	1881.59	1.99	524.68	341.98	1.33	.44	.27	8518.32	10399.91
x	3.303	996.60	1.51	995.00	1800.35	1.60	477.79	355.51	34.70	1.33	2.80	8564.42	10364.78
x	3.398	997.65	.70	996.00	1266.37	1.65	363.74	473.40	30.87	.56	.74	9064.26	10330.63
	3.491	998.08	.95	996.00	1195.49	2.09	125.72	736.46	5.82	.47	.70	9097.50	10292.99
x	3.584	998.94	1.26	996.00	1041.90	2.94	237.77	419.86	210.37	.76	2.22	9212.58	10254.48
x	3.675	1000.15	.88	998.30	1011.07	1.85	568.49	299.51	.00	.87	.01	9179.79	10190.86
	3.773	1001.14	1.13	1000.00	936.40	1.14	505.20	361.85	.95	.95	.67	9196.09	10132.49
x	3.868	1001.81	.51	1000.30	1029.54	1.51	813.79	54.21	.00	.74	.00	9021.72	10051.26

1

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SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= [illegible] PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 1.156 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 1.231 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 1.692 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 1.924 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 2.303 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 2.516 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 2.832 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 3.013 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 3.106 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 3.203 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 3.485 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 3.671 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 3.763 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 4.143 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 4.893 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 5.067 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 5.182 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 5.466 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 5.561 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

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WARNING SECNO= 5.750 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 6.034 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 2.926 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 3.021 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 3.121 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

1

WARNING SECNO= 3.303 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 3.398 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 3.584 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 3.678 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 3.868 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

PLATES 1 - 9

CHAMPION DRAIN FLOOD PROFILES

APPENDIX B

RESERVOIR ROUTING AND SPLIT FLOW APPROXIMATION AT BASELINE ROAD AND CHAMPION DRAIN FROM HEC-1 ANALYSIS

```
1745    KM   SUB-BASIN IRSMC-LAND USE - AGRICULTURE:MINOR DEVELOPMENT
1746    KM   6-HOUR RAINFALL. PATTERN NO. 3.35 WAS USED TO FIND TC & R FOR THIS BASIN
1747    KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF .89
1748    BA    .250
1749    LG    .290    .177   3.890    .488    .000
1750    UC    .717    .522
1751    UA       0       3       9      18      28      42      59      73      87      92
1752    UA     100

1753    KK  CIRSMC
1754    KM
1755    HC       2
```



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

1756    KK  RCD2C2
1757    KM    ROUTE FLOW FROM COMPUTATION POINT CIRSMC TO COMPUTATION POINT CCD2C
1758    RS       4    ELEV   987.6
1759    RC    0.07    0.07    0.07    1000  0.0040
1760    RX       0     100     300     400     560     620     750     870
1761    RY     989   987.6   987.6   987.6   987.6   987.6   987.6     989

1762    KK   CCD2C
1763    KM   COMBINE ROUTED FLOW FROM COMPUTATION POINT CIRSMC TO PREVIOUSLY COMPUTED
1764    KM   FLOW AT COMPUTATION POINT CCD2C
1765    HC       2
```

Ponding Area and Split Flow Input

```
1766    KK   RPOND
1767    KM   ROUTE INFLOW HYDROGRAPH AT COMPUTATION POINT CCD2C THROUGH DEPRESSED AREA
1768    KM   OF SUB-BASIN CD2C
1769    RS       1    ELEV     983
1770    SA       0    20.4     124
1771    SE     983     984   986.9
1772    SS   985.8    1000     2.7     1.5

1773    KK   RBASE
1774    KM    ROUTE FLOW FROM OUTFALL OF PONDING AREA 700 FEET DOWN STREAM TO POINT OF
1775    KM    SPLIT FLOW AT BASELINE ROAD AND CHAMPION DRAIN
1776    RS       1    ELEV     984
1777    RC   0.065   0.065   0.065     700   0.004
1778    RX       0      60     230     350     480     580     720    1000
1779    RY   986.2     984     984     984     984     984     985   986.2

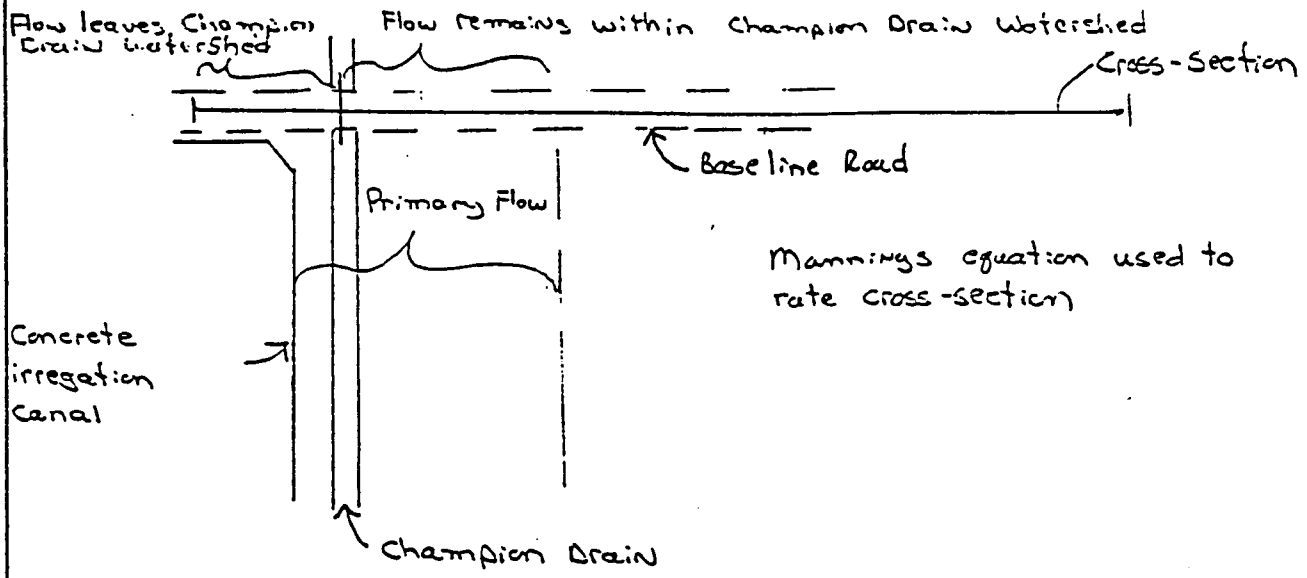
1780    KK  DIBASE
1781    KM    AT BASELINE ROAD SPLIT FLOW OCCURS. FLOW THAT EXCEEDS FLOW PATH CAPACITY FOR
1782    KM    ROUTING REACH TO COMPUTATION POINT CCD3C LEAVES THE STUDY AREA
1783    DT  REDIVE
1784    DI       0      38      59     154     337     584     890    1113    1594    1862
1785    DO       0       0       0      54     171     335     542     785    1064    1215

1786    KK  RCD3C1
1787    KM   ROUTE FLOW FROM DIVERSION POINT AT BASELINE ROAD TO COMPUTATION
1788    KM   POINT CPCD3C
1789    RS       6    ELEV   981.6
1790    RC    0.07    0.07    0.07    3000  0.0025
1791    RX       0      90     100     170     250     400     660     840
```

DESIGN NOTES AND COMPUTATIONS

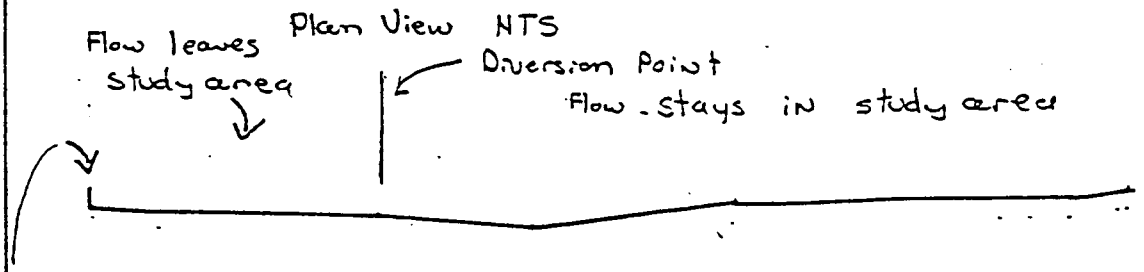
SUBJECT: LAVEEN ADMS Diversion Point DBASE

Estimate split Flow at Champion Drain and Baseline Rd. JOB NO.: 40916-02-30



Mannings equation used to rate cross-section

Plan View NTS



End of cross section set artificially high to contain flow

Cross-Section data Points

S = 0.007 Ft/Ft

x = 0	0.1	290	440	650	990	1040	"n" From 0 to 290 = 0.030
y = 986	984.9	984.8	984.1	985.6	985.7	996	"n" From 290 to 1040 = 0.07

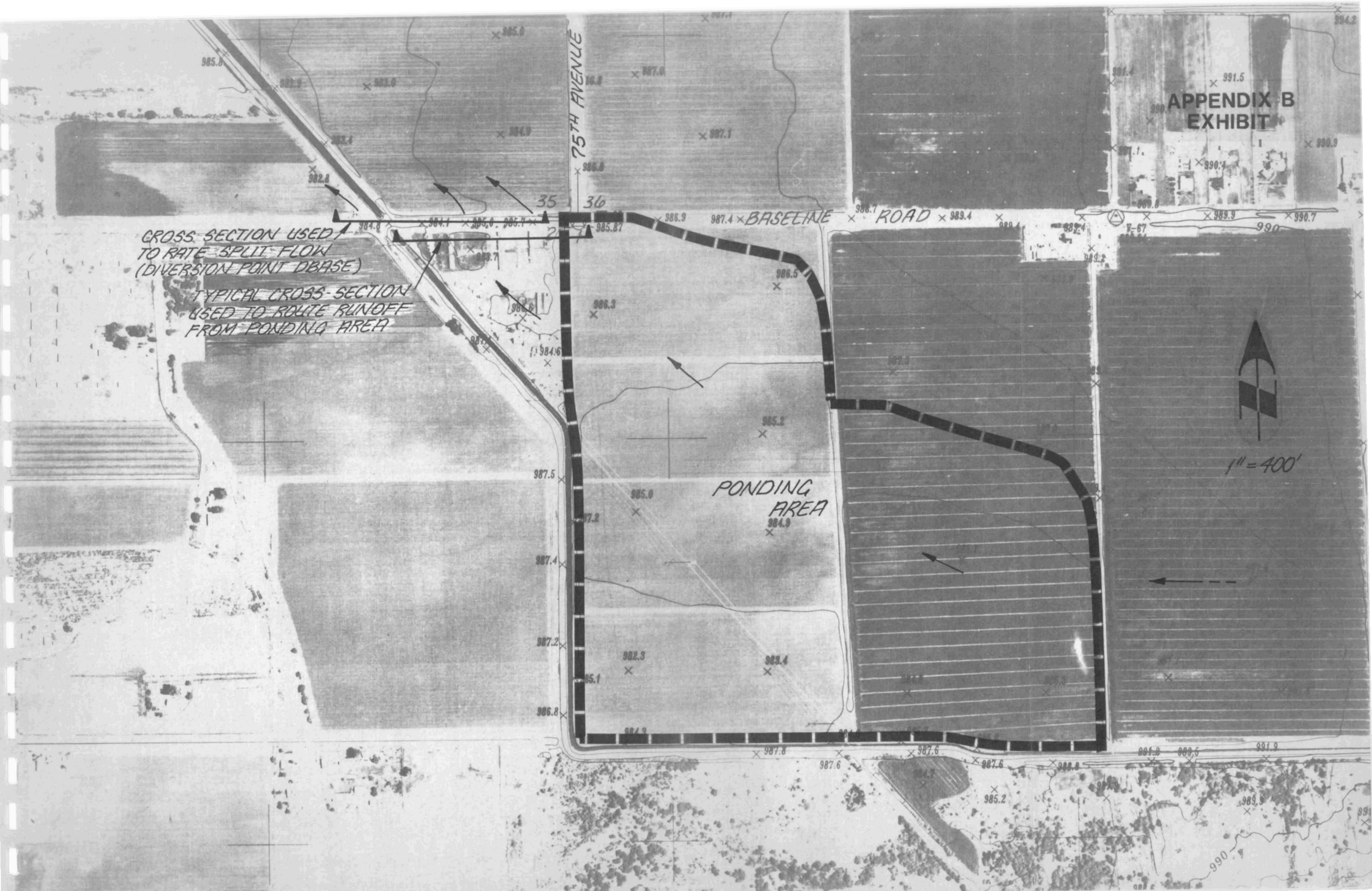
Depth of Flow Ft	Q in Flow CFS	Q from 0-290 CFS #1	Q from 290-1040 CFS #2
0.2	6	0	6
0.4	38	0	38
0.6	59	0	59
0.8	154	54	100
1.0	337	171	166
1.2	584	335	249
1.4	890	542	348
1.6	1113	785	328
1.8	1594	1064	530
2.0	1862	1215	647

#1 HEC1 OQ input values

#2 HEC1 DI input values

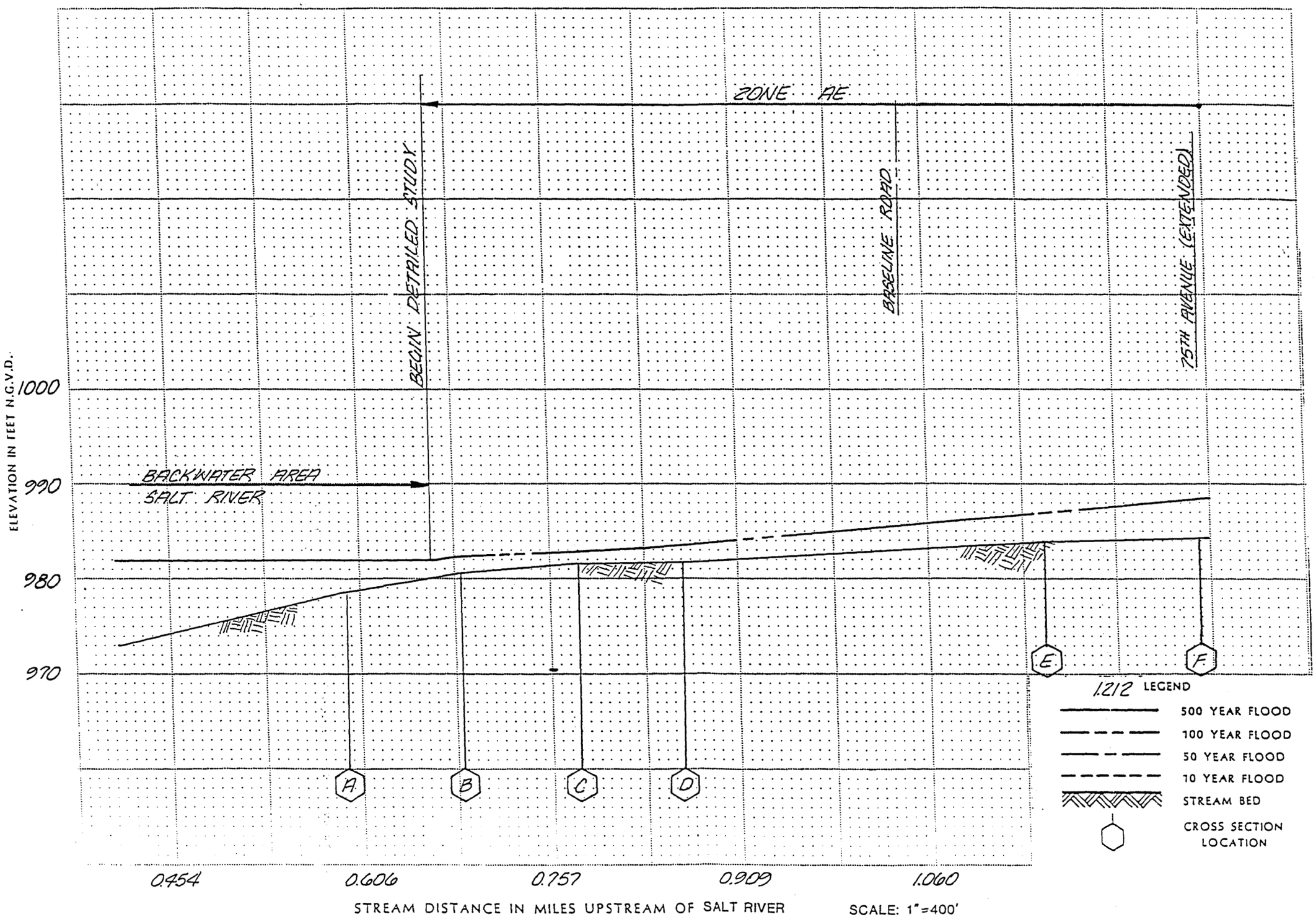
PREPARED BY:	DATE:	CHECKED BY:	SHEET NO.:	OF
PJE	4/91	4/91	1	1

CELLA BARR ASSOCIATES
5062 North 19th Avenue
Phoenix, Arizona 85015
(602) 242-2999


APPENDIX B
EXHIBIT
75TH AVENUE
BASELINE ROAD
CROSS SECTION USED TO RATE SPLIT FLOW (DIVERSION POINT DBASE)
TYPICAL CROSS-SECTION USED TO ROUTE RUNOFF FROM PONDING AREA
PONDING AREA
1" = 400'
35
36
2
1

PLATES 1 - 9

CHAMPION DRAIN FLOOD PROFILES



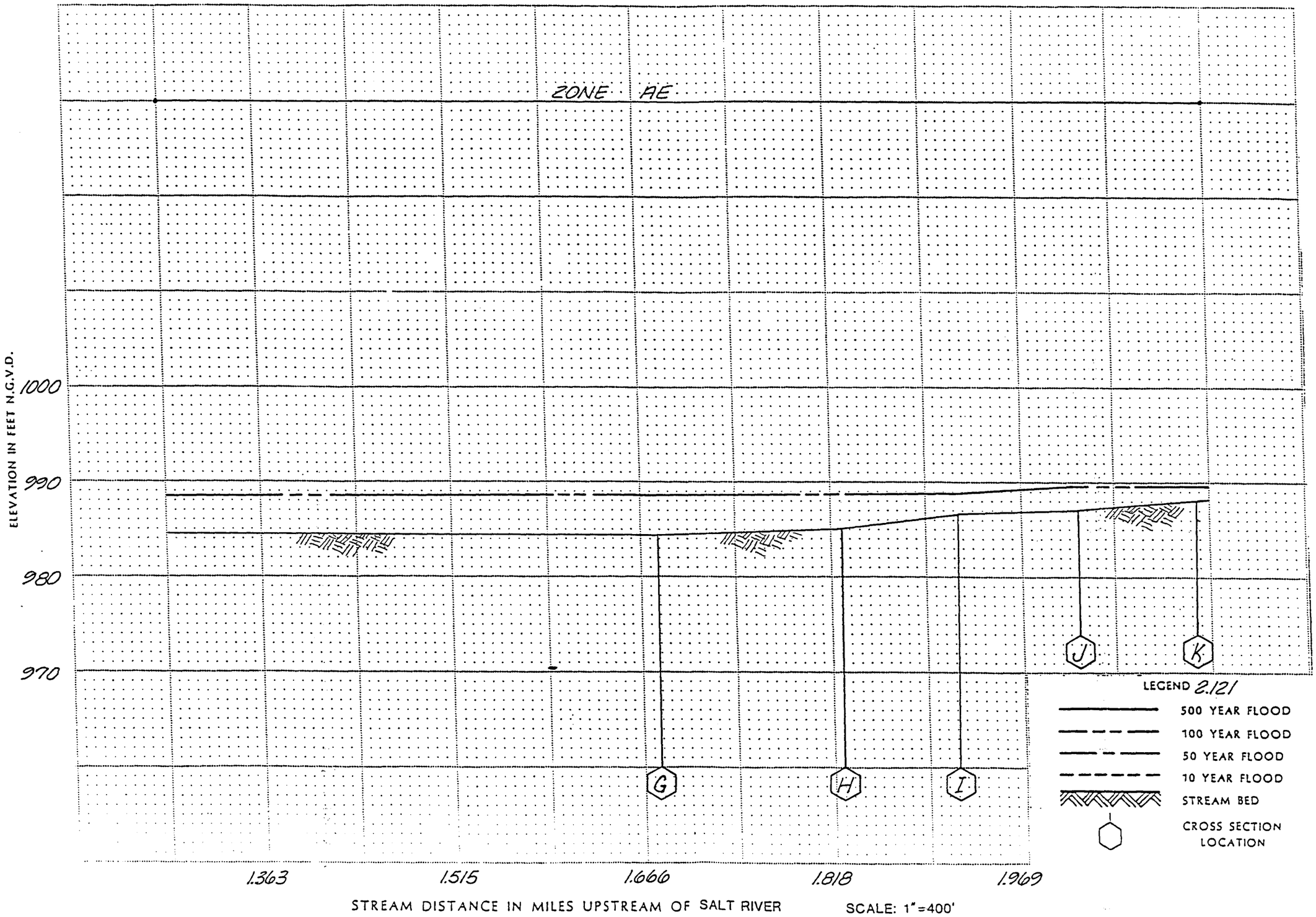
FLOOD PROFILES

CHAMPION DRAIN

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY

PLATE 1



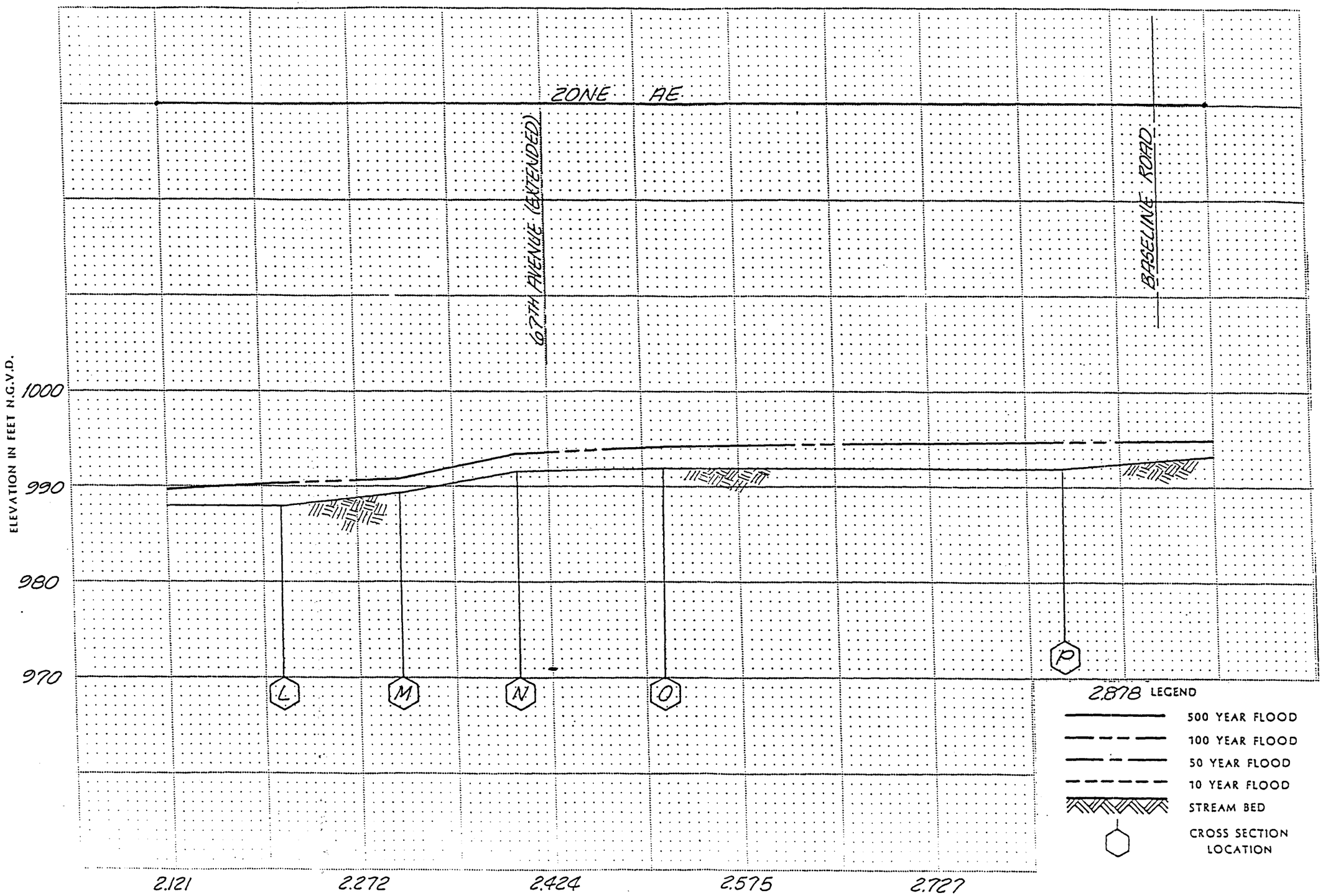
FLOOD PROFILES

CHAMPION DRAIN

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY

PLATE 2



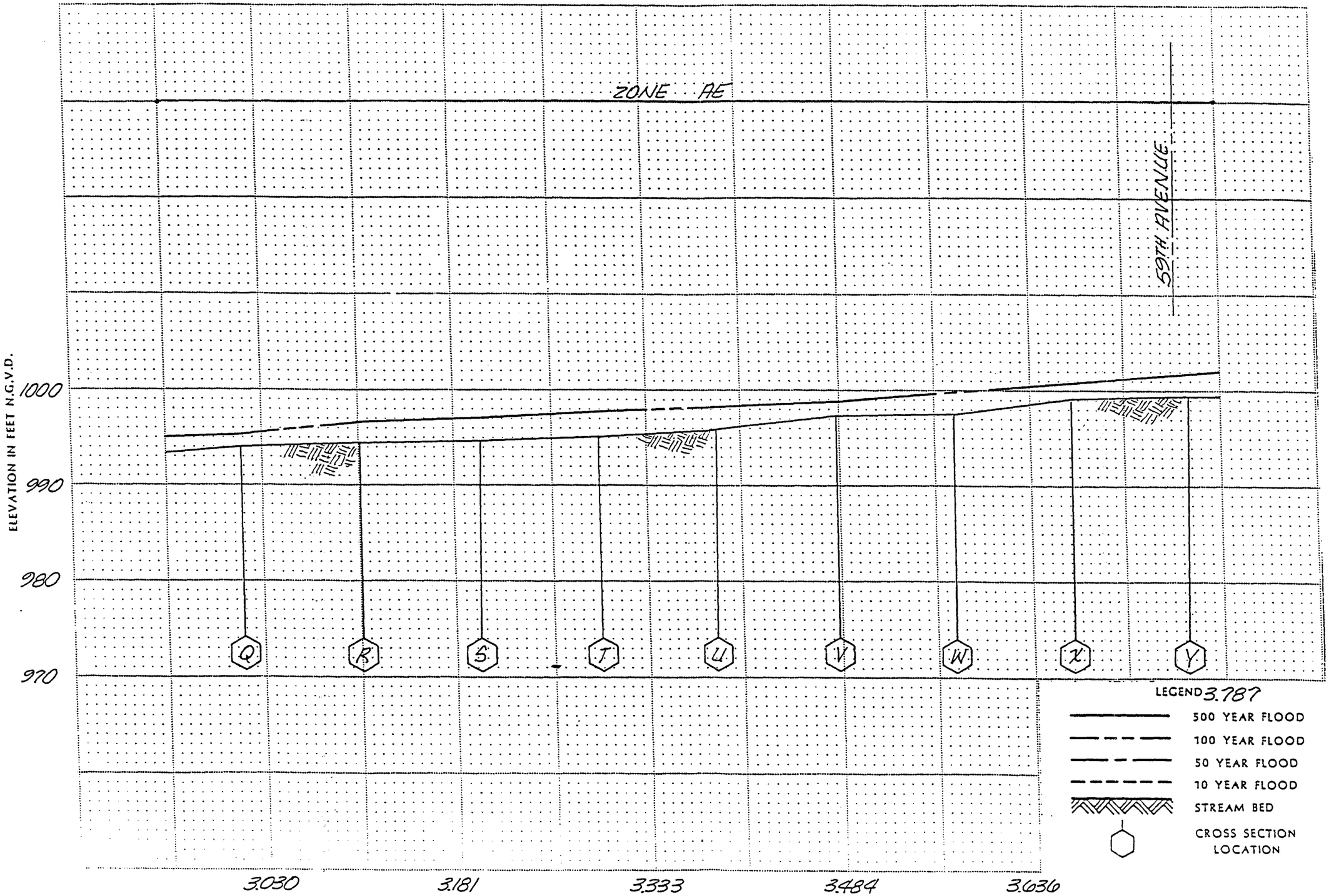
FLOOD PROFILES

CHAMPION DRAIN

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY

PLATE 3



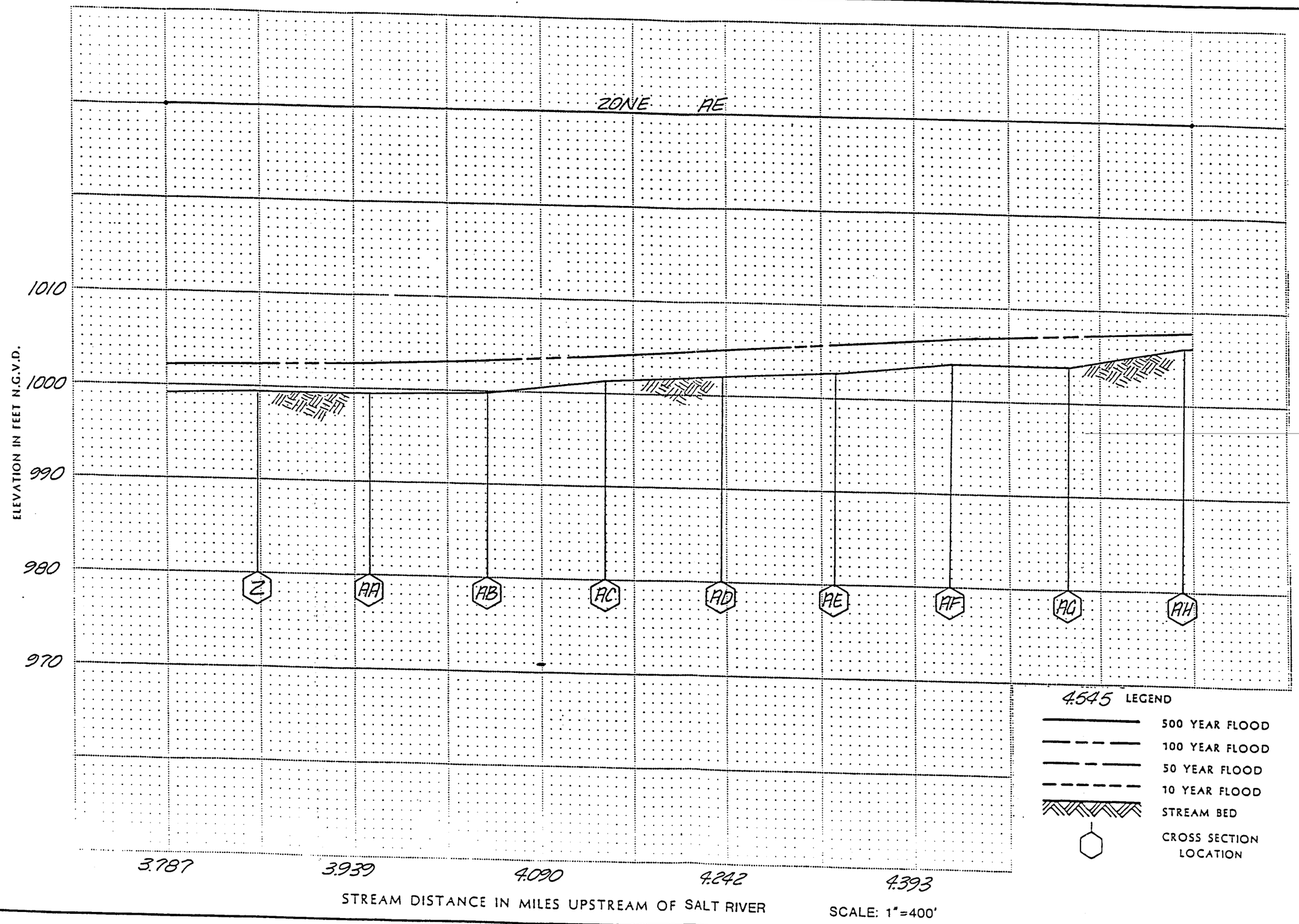
FLOOD PROFILES

CHAMPION DRAIN

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY

PLATE 4



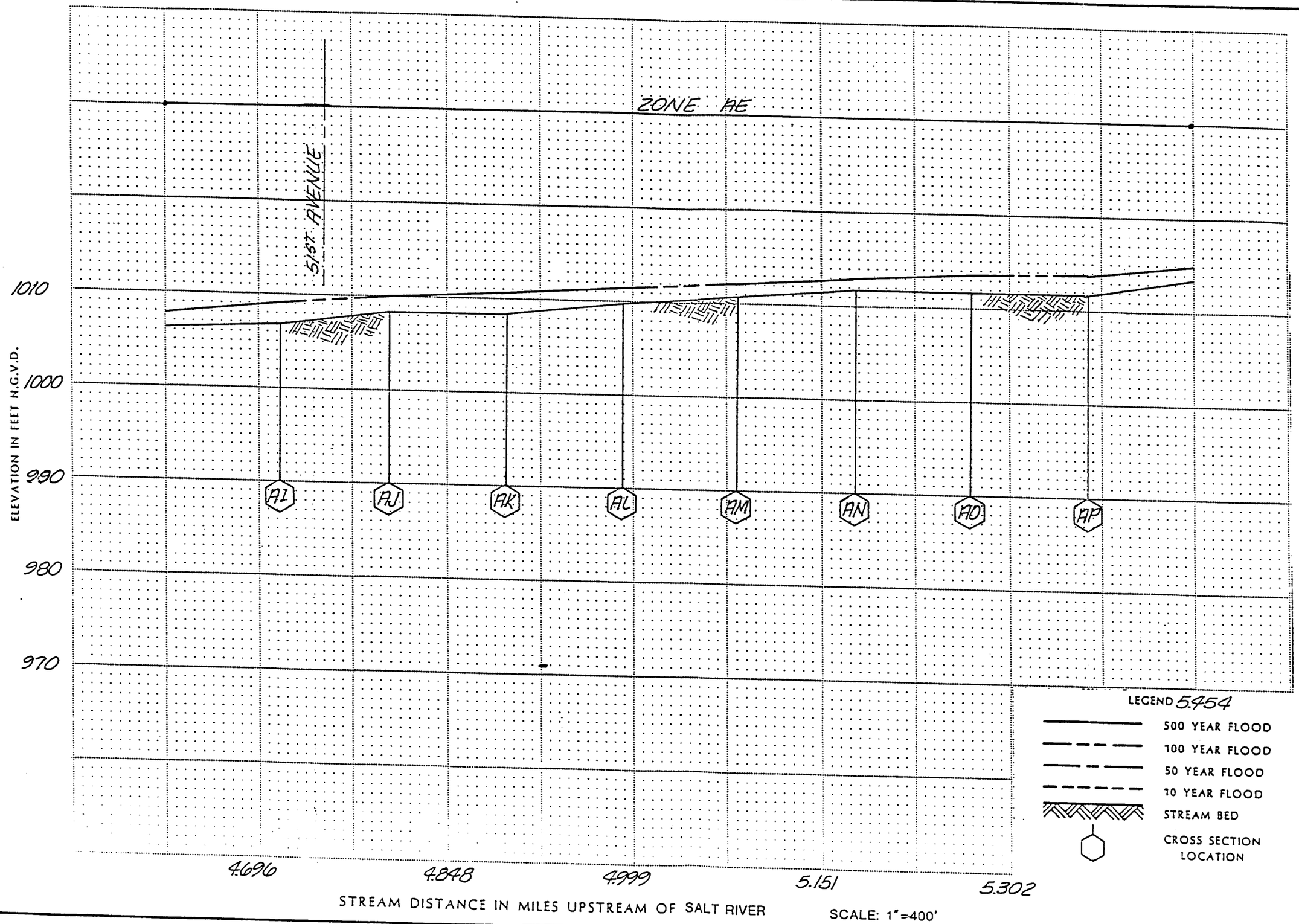
FLOOD PROFILES

CHAMPION DRAIN

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY

PLATE 5



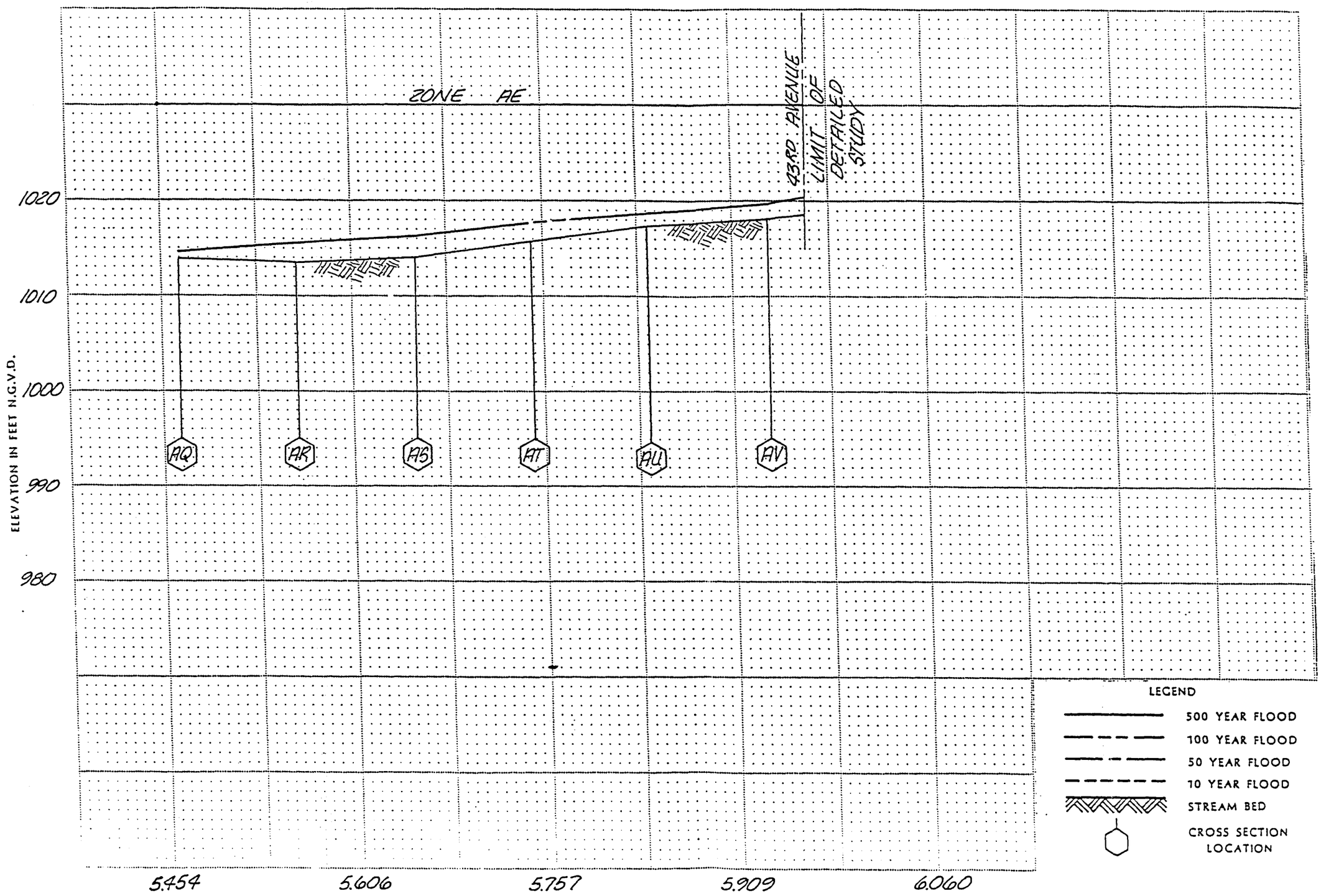
FLOOD PROFILES

CHAMPION DRAIN

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY

PLATE 6



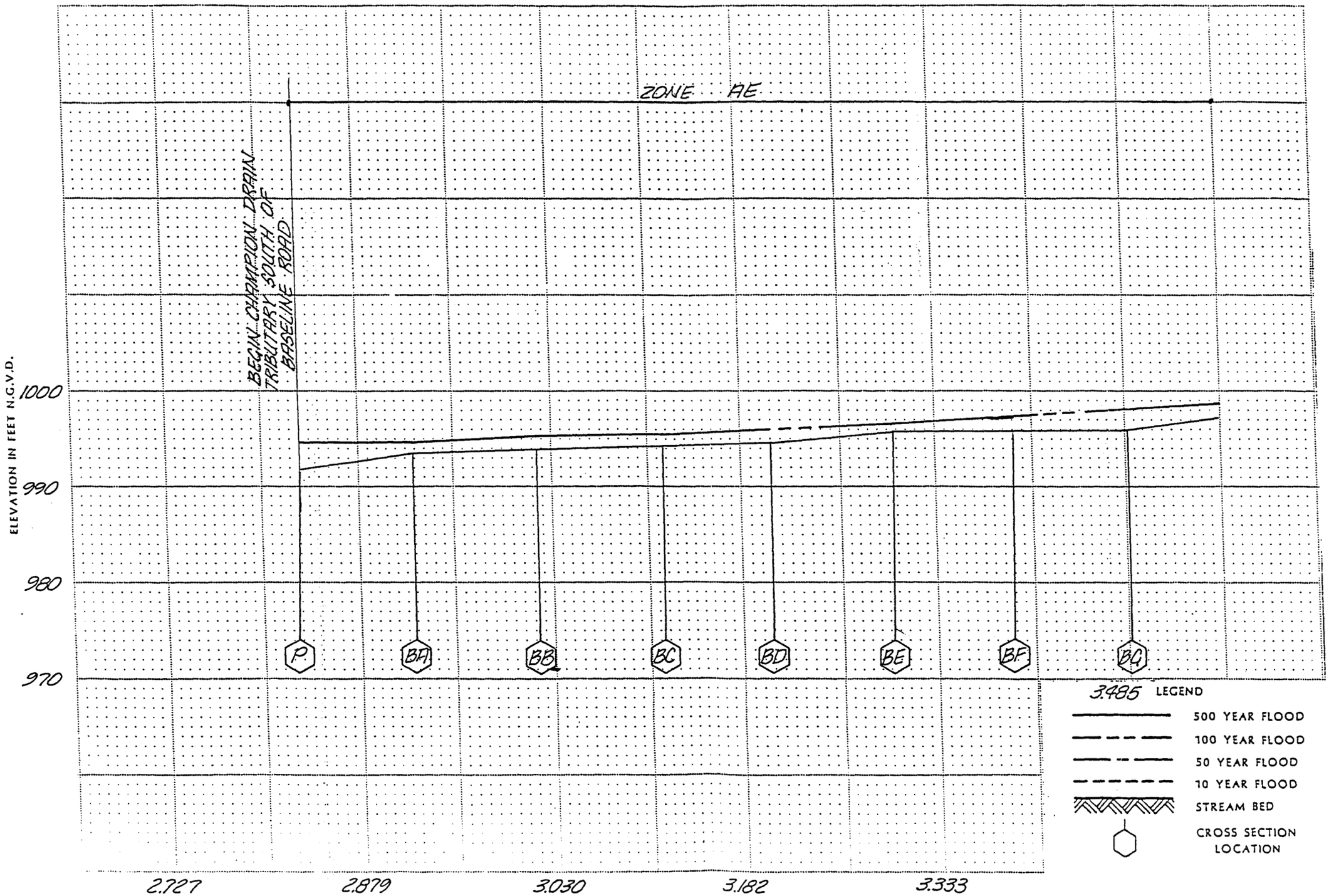
FLOOD PROFILES

CHAMPION DRAIN

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY

PLATE 7



FLOOD PROFILES

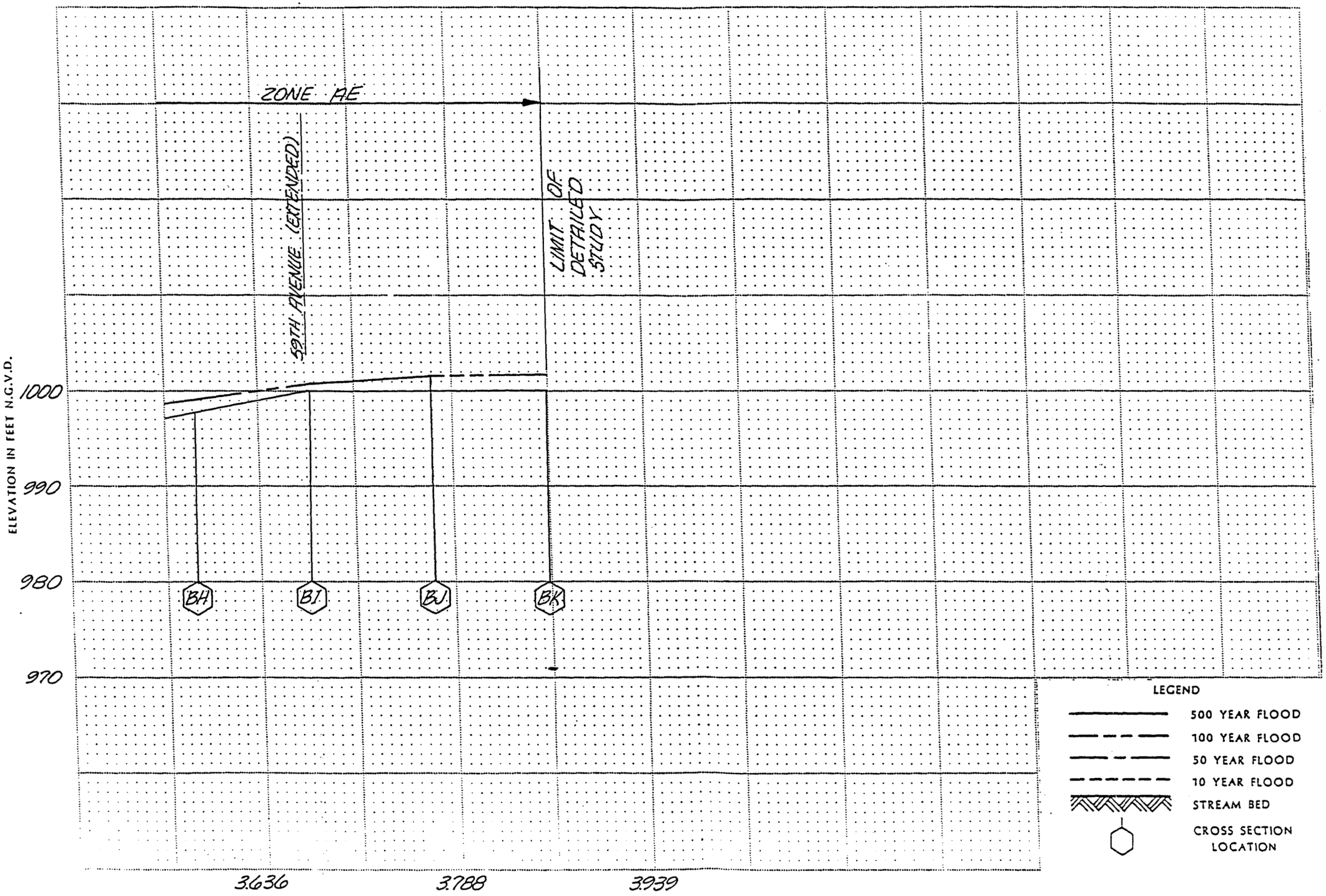
CHAMPION DRAIN

SOUTH SIDE OF BASELINE ROAD

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY

PLATE 8



FLOOD PROFILES

CHAMPION DRAIN

SOUTH SIDE OF BASELINE ROAD

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY

PLATE 9