FLOODPLAIN STUDY
FOR
NEW RIVER
AT
99TH AVENUE & BETHANY HOME SITE

21

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FLOODPLAIN STUDY
FOR
NEW RIVER
AT
99TH AVENUE & BETHANY HOME SITE

21

June, 1986

Prepared For:

Geddes and Company
2930 E. Camelback Road, Suite 110
Phoenix, AZ 85016

Prepared By:

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Registered Professional Engineer (Civil)
CERTIFICATE
10512
ASHOK C. PATEL
Date Signed 6/6/86
ARIZONA, U.S.A.

Job #1068-05
CVL #4/22/10

CVL

COE & VAN LOO

Planning
Civil Engineering
Landscape Architecture
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June 4, 1986

Mr. Ken Reedy, P.E.
City Engineer
City of Glendale
5850 W. Glendale Ave.
Glendale, AZ 85301

Re: Floodplain Redelineation - New River
99th Ave. & Bethany Home Site

Dear Mr. Reedy:

Submitted herewith for your review and approval is a Floodplain Study on New River for the referenced project.

Due to major changes in the hydrologic conditions within the New River Watershed, flood peak has been lowered significantly. Consequently, the floodplain has been reduced. Additionally, the channel improvements in conjunction with the Glendale Municipal Airport have positively impacted the floodplain.

The study addresses the hydraulic analysis of New River in accordance with the Federal Emergency Management (FEMA) Guidelines. It should be noted that, all current information available from the U.S. Army Corps of Engineers was received through the Maricopa County Flood control District.

The study provides sufficient technical information in conjunction with the letter of Map Revision (LOMR) submittal. It is respectfully requested that the City of Glendale submit this study to FEMA so that a LOMR be obtained from them.

Should you have any questions regarding the content of this study, please feel free to contact us.

Very truly yours,

COE & VAN LOO
Consulting Engineers, Inc.

Ashok C. Patel, P.E., L.S.
Vice President

ACP/ls
2/26/14

CC: John Baldwin, City of Phoenix
Dave Johnson, Maricopa County Flood Control District
F. Michael Geddes, Geddes & Co.

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Registered Professional Engineer
CERTIFICATE NO.
10512
ARIZONA, U.S.A.
Date Signed 6/6/86

Job #1068-05
CVL #4/22/10

FIGURES

FIGURE 1	LOCATION MAP
FIGURE 2	REGULATORY FLOOD HAZARD BOUNDARY MAP
FIGURE 3	REVISED PRELIMINARY FLOOD HAZARD BOUNDARY MAP
FIGURE 4	REVISED PRELIMINARY FLOOD HAZARD BOUNDARY MAP INCORPORATING GLENDALE AIRPORT CHANNELIZATION

TABLES

TABLE 1	FLOODWAY DATA

COMPUTER PRINTOUTS

PRINTOUT 1	COE ANALYSIS PRIOR TO GMA CHANNELIZATION
PRINTOUT 2	COE ANALYSIS WITH GMA CHANNELIZATION
PRINTOUT 3	CVL ANALYSIS WITH GMA CHANNELIZATION AS-BUILT SECTIONS

PROFILES

PROFILE 1	COE ANALYSIS PRIOR TO GMA CHANNELIZATION
PROFILE 2	COE ANALYSIS WITH GMA CHANNELIZATION
PROFILE 3	CVL ANALYSIS WITH GMA CHANNELIZATION AS-BUILT SECTIONS

EXHIBITS

EXHIBIT 1	COE WORK MAP PRIOR TO GMA CHANNELIZATION
EXHIBIT 2	COE WORK MAP WITH GMA CHANNELIZATION
EXHIBIT 3	CVL WORK MAP WITH GMA CHANNELIZATION AS-BUILT SECTIONS

Registered Professional Engineer
CERTIFICATE
10E02
ASHOK E. PATEL
Date Signed 6/6/86
ARIZONA, U.S.A.

Job #1068-05
CVL #4/22/10

CVL

1.0 INTRODUCTION

1.1 Purpose of Study

The purpose of this study is to demonstrate that as a result of major change in hydrologic conditions, the New River flood boundary can be redelineated to remove a portion of the subject property from the floodplain.

1.2 Coordination

For the purpose of this study, the most current data has been obtained from all agencies involved. The study approach has been coordinated with the Maricopa County Flood Control District (MCFCD) as well as with the City of Glendale.

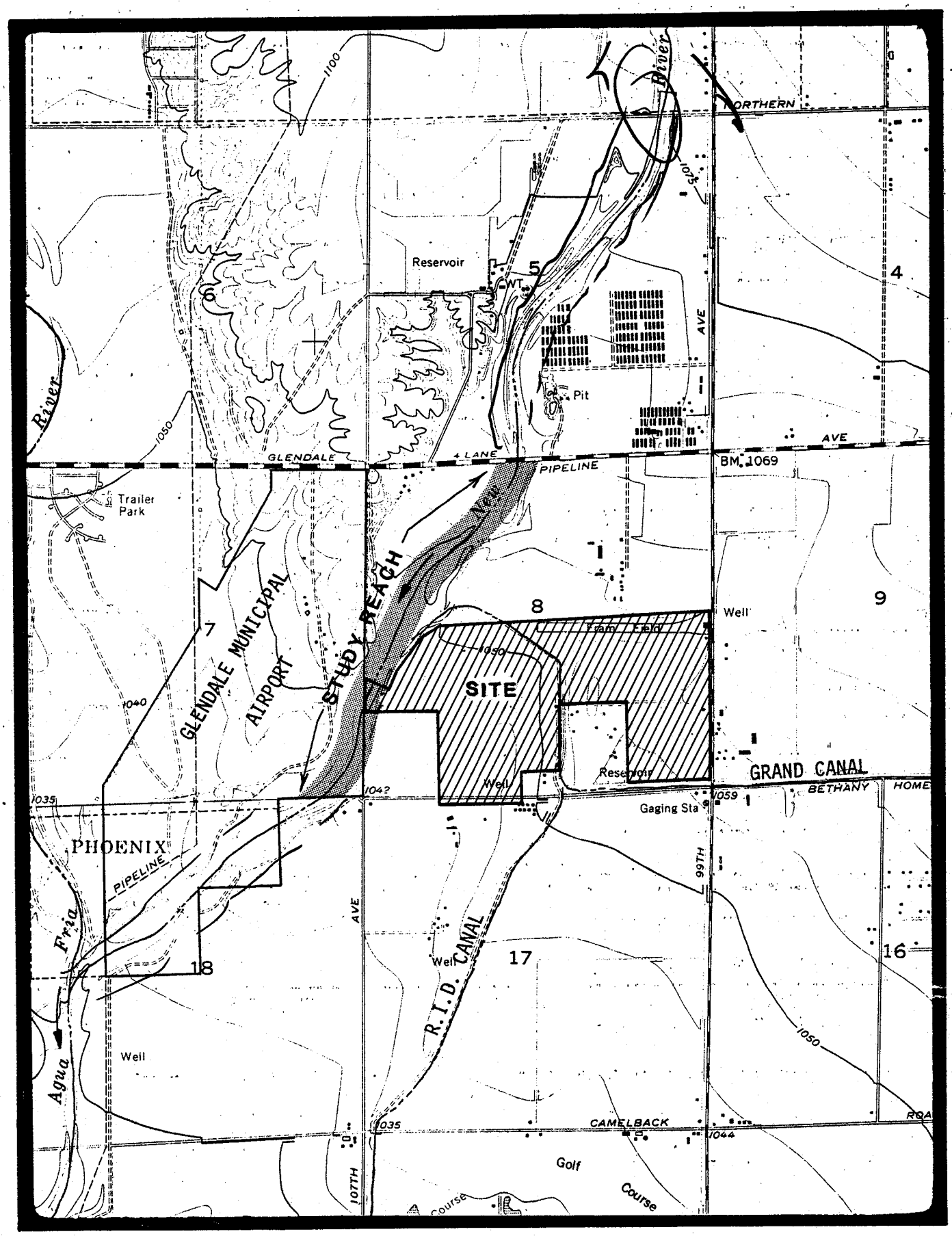
2.0 AREA STUDIED AND DOWNSTREAM CONDITIONS

2.1 Site Description

The subject property addressed in this report (see Figure 1) is generally located in the South Half of Section 8, Township 2 North, Range 1 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona. The parcel is of an irregular shape generally located northwest of the intersection of 99th Avenue and Bethany Home Road. New River flows in a southwesterly direction across the northwest corner of the property at an approximate slope of 0.5%.

2.2 Scope of Study

This study covers a portion of New River from Bethany Home to the south, to Glendale Avenue to the north (HEC-2



MAP SOURCE:
USGS 7.5 MINUTE SERIES
EL MIRAGE QUADRANGLE

SCALE: 1" = 2000'

LOCATION MAP

FIGURE 1

Sections 55.73 to 118). The study reach depicted on Figure 1 is located in the City of Glendale.

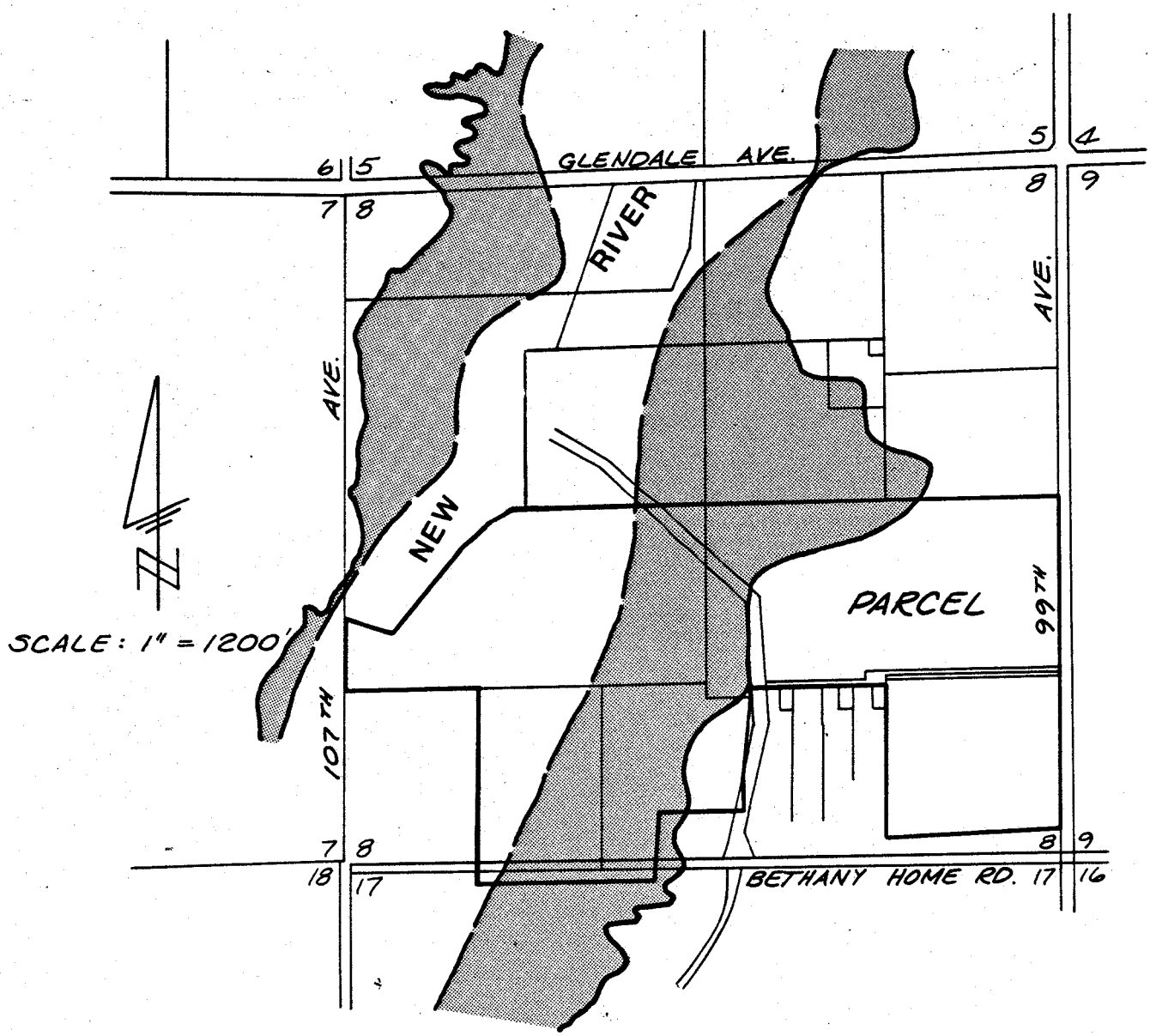
The study incorporates recently completed channelization of New River along the Glendale Municipal Airport (GMA).

2.3 Background Data

The Flood Insurance Study (FIS) in effect at this time for the study area was published by Federal Emergency Management Agency (FEMA) in 1979 (See Figure 2). Since that study, several major flood control improvements have been made to the watershed which significantly influence the New River floodway and floodplain. However, there have been no changes to the Flood Hazard Boundary Maps (FHBM) for this area since the maps were originally published in 1979.

Within the past several years, the hydrologic conditions of the watershed upstream of the study reach have changed significantly. In accordance with the Flood Control PLAN 5 as proposed by the U.S. Army Corps of Engineers (COE) in 1975, Adobe Dam was built in 1982 on Skunk Creek, a tributary to New River, and New River Dam was completed on New River in 1984. Consequently, the 100-year flood peak has been reduced from 54,000 cfs to 39,000 cfs. The COE's floodway and floodplain delineation accounting for this change are depicted on Figure 3 and Exhibit 1.

At the request of the MCFCD, the COE has subsequently updated their floodplain delineation accounting for the recent GMA channelization by the City of Glendale. As a



NEW RIVER FLOODPLAIN

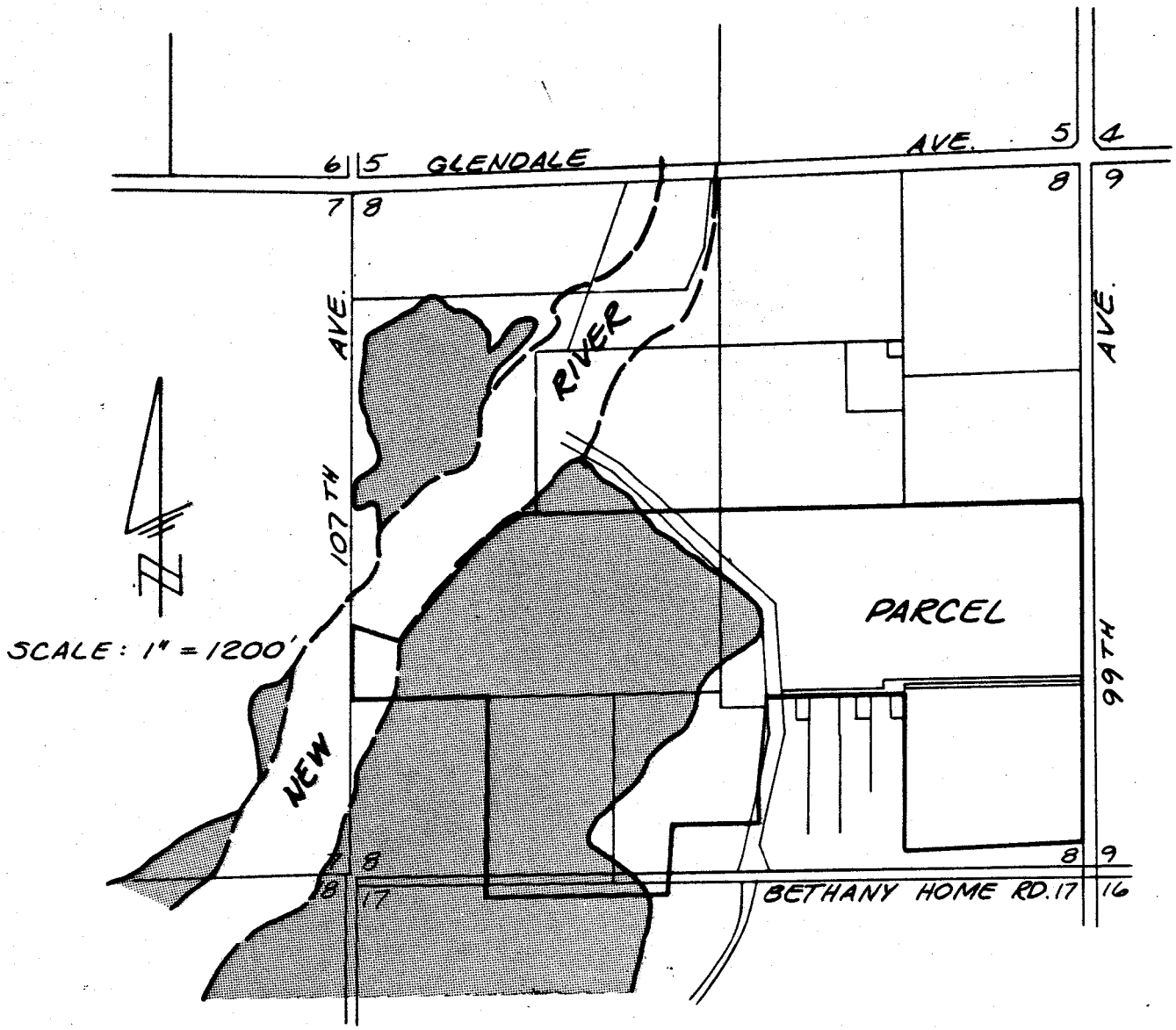
LEGEND

- 100 YEAR FLOOD BOUNDARY
- 100 YEAR FLOODWAY BOUNDARY
- 100 YEAR FLOODWAY BOUNDARY
- 100 YEAR FLOOD BOUNDARY

REGULATORY FLOOD HAZARD BOUNDARY MAP

SOURCE: FIRM/FHBM
PANEL 040037 1210 B
JULY 2, 1979

FIGURE 2



NEW RIVER FLOODPLAIN

LEGEND

- 100 YEAR FLOOD BOUNDARY
- 100 YEAR FLOODWAY BOUNDARY
- 100 YEAR FLOODWAY BOUNDARY
- 100 YEAR FLOOD BOUNDARY

SOURCE: MARICOPA COUNTY
FLOOD CONTROL DISTRICT
PERFORMED BY: U.S. ARMY
CORPS OF ENGINEERS, 1985

REVISED PRELIMINARY FLOOD
HAZARD BOUNDARY MAP

FIGURE 3

result, it has essentially removed the entire property from the 100-year floodplain as depicted on Figure 4 and Exhibits 2 & 3.

3.0 ENGINEERING METHODS

3.1 Hydrologic Analysis

The hydrologic data obtained from the COE and the local floodplain management agency, MCFCD, is based on the updated hydrologic conditions. With PLAN 5 in place, the COE has established a 100-year flood peak (base flood) on New River to be 39,000 cfs at its mouth.

3.2 Hydraulic Analysis

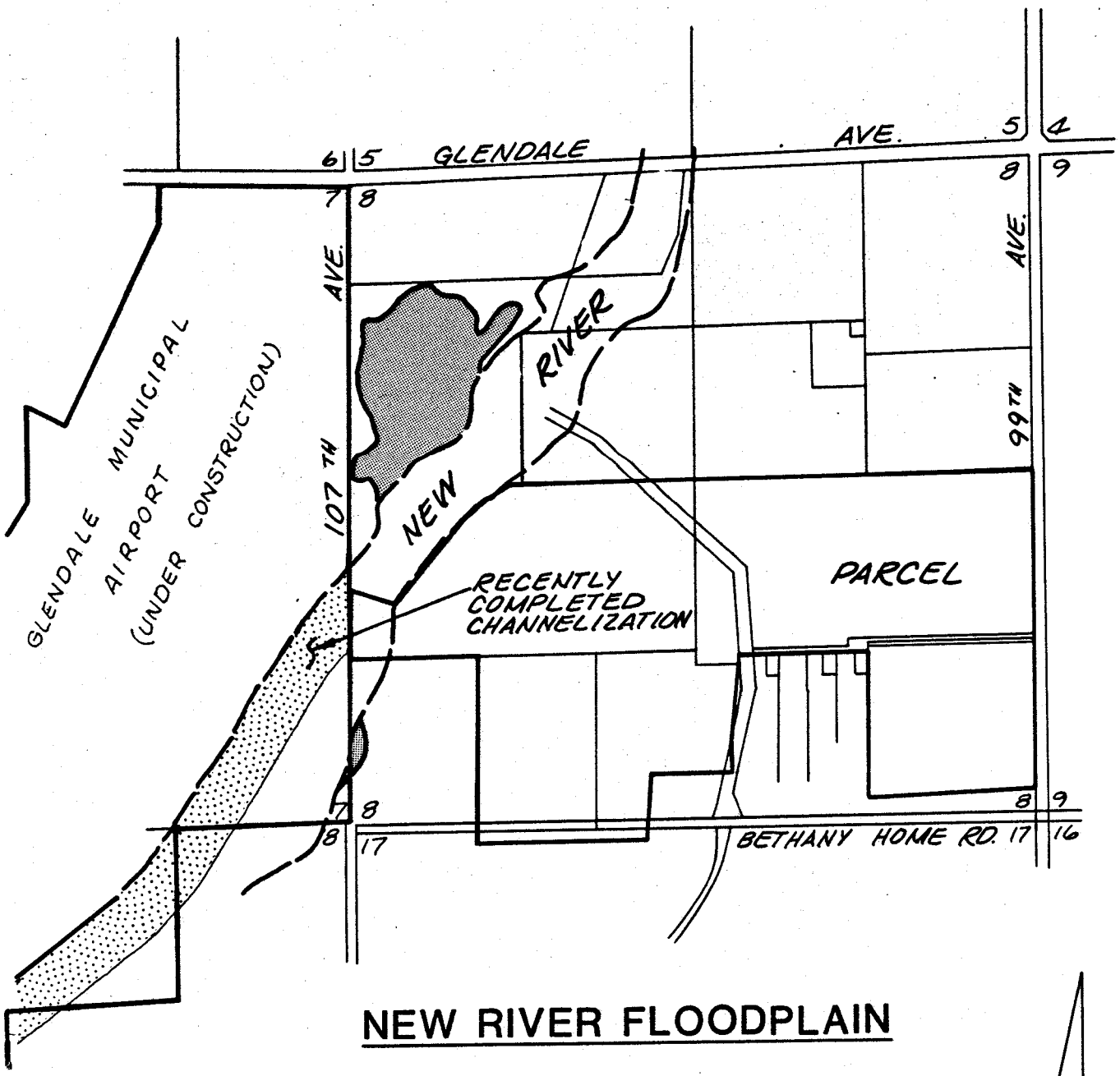
Analyses of the hydraulic characteristics were carried out to provide estimates of the elevation of 100-year flood along the study reach. Water surface elevations for the base flood were computed through the use of the U.S. Army Corps of Engineers HEC-2 step backwater computer program (Reference 1). Locations of selected cross sections used in the hydraulic analysis are shown on Exhibit 3.

Roughness coefficients (Manning's "n" values) used in the hydraulic modeling are adopted from the COE's recent analyses as follows:

Left Overbank: .045

Channel: .035

Right Overbank: .045



NEW RIVER FLOODPLAIN

LEGEND

- 100 YEAR FLOOD BOUNDARY
- 100 YEAR FLOODWAY BOUNDARY
- 100 YEAR FLOODWAY BOUNDARY
- 100 YEAR FLOOD BOUNDARY

SCALE: 1" = 1200'

SOURCE: MARICOPA COUNTY FLOOD CONTROL DISTRICT

PERFORMED BY: U. S. ARMY CORPS OF ENGINEERS, 1985

REVISED PRELIMINARYFLOOD HAZARD BOUNDARY MAP INCORPORATING GLENDALE AIRPORT CHANNELIZATION

FIGURE 4

3.3 Hydraulic Modeling

3.3.1 COE Modeling Prior to GMA Channelization

The first hydraulic analysis presented in this study is duplicated from the work performed by the COE. The study reach is on New River from the confluence with Agua Fria River to Glendale Avenue. This data, furnished by MCFCD, reflects the updated hydrologic conditions. It does not, however, reflect the presently channelized section of New River near the GMA. For this condition the following items apply:

Figure 3

Printout 1

Profile 1

Exhibit 1

This data is included for comparison purposes.

Based on the COE modeling prior to GMA channelization, breakout occurs north of Bethany Home Road on the east overbank, as shown on Exhibit 1. Therefore the computed water surface elevation in this run reflects this breakout condition.

3.3.2 COE Modeling With GMA Channelization

The second hydraulic analysis presented in this study was also performed by the COE, and furnished by MCFCD. The study reach is on New River from the confluence with Agua Fria River to Glendale Avenue. This analysis reflects the updated hydrologic

conditions, and the GMA channelization per the design plans. This data is considered preliminary, until the as-built plans are available for the GMA channelization. For this condition, the following items apply:

Figure 4

Printout 2

Profile 2

Exhibit 2

The additional conveyance available, due to the GMA channelization, allows the floodplain to be contained within the main portion of the channel, and therefore eliminating the potential of breakout. This condition is substantiated by the COE Modeling with GMA channelization, and is reflected on Exhibit 2.

3.3.3 CVL Modeling With GMA Channelization As-Built Sections

In this analysis, modifications have been made to the COE model of the channelized condition. As-built cross sections of the GMA channelization in the vicinity of the property have been incorporated into the COE's model. Sections 55.73 and 62 were obtained from an aerial topo (Ref. 9), while sections 66, 70, 72, and 77 were field surveyed to get the as-built information (COE Datum). These as-built sections were incorporated into the model with the upstream sections remaining in their natural condition. The model was started at Section 55.73 with the slope area method.

For the starting water surface elevation, considerations were also made to the COE's computer model available per paragraph 3.3.2 above. For this existing condition, the following items apply:

Printout 3

Profile 3

Exhibit 3

Based on as-built conditions, we concur that the flow will be contained within the main portion of the channel and no breakout will occur. This is reflected on Exhibit 3.

3.3.4 Profile Concurrence

The profiles published in conjunction with the regulatory FIS (Ref. 4) were reviewed. However, due to significant changes in the hydrology conditions and consequently substantial reduction in the 100-year flood discharge value, no comparision was made to concur the regulatory flood profiles.

For information purpose a comparison between the COE's analysis and CVL As-built analysis is presented in Table 1.

4.0 OTHER STUDIES

The FIS in the study area was published in July, 1979 (FIRM & FHBM panels 040037-1210 , Ref. 4). The COE has studied New River with the present hydrology for both the prechannelized and postchannelized conditions of New River in the vicinity of GMA.

TABLE 1

FLOODWAY DATA

Sections[a]	Water Surface Elevation: COE Modeling[b] with GMA Channelization	Water Surface Elevation: CVL Modeling[c] with GMA Channelization As-built Sections
55.73	1041.51	1041.49
62	1041.75	1041.78
66	1041.92	1041.84
70	1042.35	1042.43
72	1043.31	1043.66
77	1047.32	1046.00
84	1050.95	1050.95
88.7	1051.53	1051.53
95.5	1052.00	1052.00
100.7	1052.07	1052.06
107	1053.90	1053.89
110.7	1053.31	1053.32
117.2	1058.09	1058.09
118	1058.56	1058.55

a) Section numbers are stream distance in stations (100 ft.) increasing upstream from confluence with Agua Fria River.

b) Computer Printout 2, in conjunction with Fig. 4, Profile 2, and Exhibit 2.

c) Computer Printout 3, in conjunction with Profile 3 and Exhibit 3.

Coe and Van Loo has studied this reach for a proposed channelization opposite the GMA channelization for Camelback Ranch development (Ref. 9).

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon the results of this study, it can be concluded that:

a) The analysis and report have been produced using the best information available from the COE, the City of Glendale, and the MCFCD.

b) The analysis and report have been produced following the FEMA guideline.

c) This study demonstrates that as a result of significant changes in the hydrologic conditions, including substantial reduction in the flood peak and the recent channelization for the GMA, the New River Flood delineation should be changed. This change consequently removes a large portion of the subject property from the flood plain.

d) This study provides sufficient technical information to allow FEMA to provide a Letter Of Map Revision (LOMR).

e) It is requested that the City of Glendale, in cooperation with the MCFCD recommend FEMA to adopt the new flood plain delineation within the study reach of New River (Exhibit 3).

6.0 REFERENCES

1. U.S. Army Corps of Engineers, Hydrologic Engineering Center, "HEC-2 Water Surface Profiles, Generalized Computer Program," Davis, California, September, 1981.
2. Federal Emergency Management Agency, Federal Insurance Administration, Memorandum to FIA Staff from Richard Krimm, "F.I.A. Policy on Floodway Revisions", dated April 28, 1981.
3. U.S. Department of Housing and Urban Development, Federal Emergency Management Agency, Federal Insurance Administration, "Flood Insurance Study, Guidelines and Specifications for Study Contractors," September 1985.
4. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Insurance Rate Map & Flood Hazard Boundray Map, Maricopa County, Arizona Unincorporated Areas. Comunity-Panel number 040037-1210, effective Date: July 2, 1979.
5. U.S. Army Corps of Engineers, HEC-2 Computer Data, "100 Year Floodway", Executed February 15, 1985 Data furnished by the Flood Control District of Maricopa County.
6. U.S. Army Corps of Engineers, Preliminary HEC-2 Computer Data, "100 Year Floodway w/Glendale Airport Channelization Preliminary Data Only," File No. LNRGAPFW Executed August 5, 1985 - Data furnished by the Flood Control District of Maricopa County.

7. Bucher, Willis & Ratuff Consulting Engineers, Planners and Architects and Z & H Engineering, Inc., "Glendale Municipal Airport," January 22, 1984.

8. Aerial Mapping Company, Inc. Phoenix, Arizona. Camelback Ranch Topo, Job #85094-1, Scale 1" = 50', Contour Interval = 1'.

9. Coe & Van Loo Consulting Engineers, Inc. Phoenix, Arizona. "Flood Plain Study for Agua Fria & New Rivers at Camelback Ranch," April 8, 1986.

COMPUTER PRINTOUT 1

HEC-2 INPUT & OUTPUT DATA

COE ANALYSIS PRIOR TO GMA CHANNELIZATION

Job #1068-05
CVL #4/22/10

FCDM

COMPUTER PRINTOUT 1

THIS RUN EXECUTED 15 FEB 85 8:26:56

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HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
ERROR CORR - 01,02,03,04,05
MODIFICATION - 50,51,52,53,54,55
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C cards may not always be up to date

6,000 cfs is the correct contemporaneous flow of Skunk, but the run happens to use full Skunk Q100 and Q100 ACDC. No effect so we just didn't change Skunk Q100 back to 6000 cfs.

Bob Schultz

```
C
T1      AGUA FRIA RIVER,NEW RIVER AND SKUNK CREEK GILA R TO ACDC
T2      NEW RIVER - SKUNK CREEK 1981TOPO.UPDATED W/SEPT 1983TOPO.
T3      100YR NONSED CHANNEL AT GRAND AVE WITH 83RD AVE TO ACDC SPLITFLOW

J1  ICHECK    INQ     NINV    IDIR    STRT   METRIC   HVINS     Q      WSEL     FQ
        0.      2.      0.      0.  0.031000   0.0      0.0      0.  1027.500  0.000

J2  NPROF    IPLOT   PREVS   XSECV   XSECH     FN    ALLDC    IBW    CHNIM   ITRACE
      -1.000   0.000  -1.000   3.000   0.000  0.000  -1.000   0.000   0.000   15.000

NC      0.045   0.045   0.035   0.100   0.300   0.000   0.000   0.000   0.000   0.000
QT      3.000 39000.000 39000.000 69000.000   0.000   0.000   0.000   0.000   0.000   0.000
ET    501.450   0.000   7.100   0.000   0.000   0.000 9300.000 12150.000   0.000   0.000
X1    501.450  74.000 9150.000 11440.000   0.000   0.000   0.000   0.000   0.000   0.000
GR   1034.000 5420.000 1032.000 5520.000 1030.000 6550.000 1029.300 7130.000 1028.500 8140.000
GR   1028.000 8260.000 1027.000 8530.000 1027.000 9081.000 1027.700 9151.000 1026.000 9220.000
GR   1025.300 9240.000 1026.000 9260.000 1027.000 9300.000 1026.000 9315.000 1020.000 9335.000
GR   1020.000 9445.000 1022.300 9450.000 1022.000 9560.000 1020.000 9615.000 1019.200 9640.000
GR   1020.000 9650.000 1022.300 9665.000 1023.000 9675.000 1022.000 9695.000 1021.700 9860.000
GR   1020.900 10000.000 1020.500 10050.000 1022.000 10200.000 1022.300 10300.000 1022.000 10390.000
GR   1022.000 10480.000 1026.300 10520.000 1026.000 10600.000 1027.500 10720.000 1026.000 10965.000
GR   1024.000 10975.000 1026.000 11000.000 1026.300 11130.000 1026.000 11260.000 1026.000 11370.000
GR   1028.000 11440.000 1029.200 11470.000 1028.000 11500.000 1026.300 11750.000 1024.000 11800.000
GR   1024.000 11830.000 1026.000 11920.000 1025.000 11950.000 1025.600 12170.000 1024.000 12140.000
GR   1024.500 12210.000 1024.000 12270.000 1022.000 12280.000 1020.400 12320.000 1022.000 12360.000
GR   1024.000 12435.000 1026.000 12480.000 1026.000 12565.000 1024.000 12600.000 1024.000 12650.000
GR   1026.000 12720.000 1025.000 12820.000 1026.000 12900.000 1024.000 12950.000 1026.000 13000.000
GR   1027.000 13070.000 1026.000 13135.000 1026.000 13580.000 1025.800 14081.000 1025.000 14550.000
GR   1026.500 15000.000 1027.300 15150.000 1030.000 15250.000 1030.500 15270.000   0.000   0.000

ET     13.000   5.100   7.100   0.000 9600.000 11720.000 8900.000 10221.000   0.000   0.000
X1     13.000  29.000 9900.000 10220.000 100.000 1400.000 1300.000   0.000   0.000   0.000
X4      2.000 1029.400 9630.000 1029.600 10470.000   0.000   0.000   0.000   0.000   0.000
GR   1034.000 5220.000 1032.000 5345.000 1030.000 5430.000 1028.700 5460.000 1026.000 5770.000
GR   1024.900 6350.000 1025.400 6475.000 1025.300 7135.000 1025.500 8210.000 1027.000 8260.000
GR   1025.500 8290.000 1027.000 8580.000 1026.000 8605.000 1026.000 9115.000 1028.000 9360.000
GR   1028.300 9900.000 1028.000 9910.000 1026.000 9921.000 1024.000 9933.000 1024.000 9975.000
GR   1023.500 10000.000 1024.000 10060.000 1026.000 10150.000 1025.500 10220.000 1028.000 10410.000
GR   1030.000 10600.000 1030.700 10830.000 1032.000 11300.000 1033.500 11720.000   0.000   0.000
```

ET	20.000	5.100	7.100	0.000	9000.000	11360.000	8800.000	10171.000	0.000	0.000
X1	20.000	35.000	9890.000	10170.000	960.000	600.000	700.000	0.000	0.000	0.000
X4	7.000	1028.000	5640.000	1025.700	6570.000	1025.200	7810.000	1025.500	8830.000	1029.400
X4	9630.000	1031.700	10640.000	1030.900	11240.000	0.000	0.000	0.000	0.000	0.000
X4	1.000	1032.200	10310.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1034.300	5570.000	1034.000	5730.000	1032.300	5765.000	1032.000	5881.000	1030.000	6195.000
GR	1028.000	6170.000	1026.000	6460.000	1025.700	7160.000	1027.200	7220.000	1027.400	7530.000
GR	1027.000	7610.000	1027.200	7630.000	1028.000	7870.000	1028.300	8750.000	1031.000	9460.000
GR	1031.300	9530.000	1032.000	9600.000	1033.000	9630.000	1032.000	9645.000	1030.000	9750.000
GR	1029.300	9890.000	1028.000	9905.000	1026.000	9910.000	1024.000	9960.000	1023.400	10000.000
GR	1024.000	10090.000	1026.000	10107.000	1023.000	10140.000	1028.200	10171.000	1029.500	10345.000
GR	1030.000	10630.000	1030.000	10690.000	1031.200	10900.000	1032.000	11060.000	1034.000	11350.000
ET	26.800	5.100	7.100	0.000	8000.000	11740.000	8600.000	10540.000	0.000	0.000
X1	26.800	37.000	9865.000	10230.000	1000.000	600.000	630.000	0.000	0.000	0.000
X4	1.000	1032.000	10310.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1036.000	5980.000	1035.700	6080.000	1035.200	6235.000	1034.000	6400.000	1033.000	6480.000
GR	1032.000	6530.000	1030.000	6640.000	1030.200	6750.000	1030.000	7200.000	1030.000	7830.000
GR	1031.000	8160.000	1032.000	8660.000	1033.200	8700.000	1032.000	8740.000	1032.000	9520.000
GR	1032.000	9670.000	1033.000	9700.000	1032.000	9720.000	1031.000	9820.000	1030.000	9865.000
GR	1030.000	9895.000	1028.000	9910.000	1026.000	9922.000	1024.000	9940.000	1023.700	10000.000
GR	1024.000	10075.000	1026.000	10100.000	1023.000	10130.000	1030.000	10190.000	1032.000	10290.000
GR	1030.000	10330.000	1029.100	10540.000	1030.000	10710.000	1031.000	10895.000	1032.000	11090.000
GR	1034.000	11260.000	1035.300	11740.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	32.600	5.110	7.100	0.000	8500.000	11750.000	8500.000	10500.000	0.000	0.000
X1	32.600	38.000	9885.000	10160.000	660.000	580.000	585.000	0.000	0.000	0.000
GR	1038.000	6020.000	1037.800	6155.000	1036.000	6300.000	1035.000	6650.000	1034.000	6760.000
GR	1032.300	6930.000	1032.000	7035.000	1032.000	7190.000	1032.000	7800.000	1033.000	7830.000
GR	1034.000	7860.000	1034.200	8080.000	1035.000	8500.000	1035.000	8670.000	1035.700	8695.000
GR	1035.000	8730.000	1034.000	8970.000	1034.000	9480.000	1033.700	9500.000	1032.000	9540.000
GR	1031.500	9760.000	1031.400	9885.000	1030.000	9900.000	1028.000	9905.000	1026.000	9940.000
GR	1024.000	10000.000	1026.000	10060.000	1028.000	10090.000	1030.000	10110.000	1032.000	10160.000
GR	1032.800	10320.000	1032.000	10520.000	1031.300	10670.000	1032.000	10975.000	1034.000	11160.000
GR	1034.500	11480.000	1035.900	11750.000	1035.000	11920.000	0.000	0.000	0.000	0.000
ET	38.000	5.100	7.100	0.000	8900.000	11630.000	8900.000	10251.000	0.000	0.000
X1	38.000	40.000	9840.000	10250.000	450.000	540.000	580.000	0.000	0.000	0.000
GR	1040.600	5895.000	1040.000	6065.000	1040.000	6067.000	1039.700	6275.000	1038.000	6368.000
GR	1038.000	6370.000	1036.000	6635.000	1034.000	6920.000	1033.800	7280.000	1034.000	7365.000
GR	1032.900	7395.000	1034.300	7660.000	1034.500	7940.000	1035.300	8245.000	1036.000	8640.000
GR	1036.000	9365.000	1035.500	9420.000	1034.000	9440.000	1032.000	9500.000	1031.900	9700.000
GR	1032.000	9810.000	1034.000	9825.000	1036.000	9830.000	1036.000	9840.000	1036.000	9842.000
GR	1034.000	9855.000	1032.000	9865.000	1030.000	9890.000	1028.000	9900.000	1026.000	10060.000
GR	1024.900	10100.000	1026.000	10160.000	1028.000	10165.000	1030.000	10190.000	1032.000	10200.000
GR	1034.000	10250.000	1034.000	10880.000	1035.000	10920.000	1038.000	11500.000	1038.300	11630.000
ET	45.000	5.100	7.100	0.000	9250.000	11000.000	9250.000	10136.000	0.000	0.000
X1	45.000	44.000	9835.000	10135.000	420.000	850.000	700.000	0.000	0.000	0.000
GR	1042.000	5925.000	1043.200	6000.000	1042.300	6220.000	1042.000	6395.000	1042.000	6397.000
GR	1040.000	6425.000	1039.300	6530.000	1038.000	6575.000	1037.700	6730.000	1037.300	6925.000
GR	1036.000	6975.000	1035.700	7225.000	1034.600	7570.000	1034.700	8300.000	1035.500	8350.000
GR	1036.000	8510.000	1036.300	8850.000	1036.500	9060.000	1036.300	9255.000	1038.000	9360.000

GR	1036.000	8510.000	1036.300	8850.300	1036.500	9060.000	1036.300	9255.000	1038.000	9360.000
GR	1038.700	9375.000	1038.300	9395.000	1035.800	9460.000	1036.300	9525.000	1036.000	9615.000
GR	1038.000	9625.000	1036.000	9635.000	1035.600	9755.000	1034.400	9835.000	1034.000	9850.000
GR	1032.000	9860.000	1030.000	9880.000	1028.000	9940.000	1025.800	10028.000	1028.000	10100.000
GR	1030.300	10110.000	1032.300	10118.000	1034.000	10122.000	1034.100	10135.000	1034.500	10255.000
GR	1036.000	10390.000	1038.300	10590.000	1040.000	10710.000	1042.000	11000.000	0.000	0.000
ET	51.700	0.000	7.100	0.000	0.000	0.000	9779.000	10350.000	0.000	0.000
X1	51.700	43.000	9780.000	10125.000	560.000	660.000	670.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1042.000	7015.000	1040.000	7060.000	1039.700	7175.000	1038.500	7270.000	1038.000	7320.000
GR	1037.700	7470.000	1036.000	7545.000	1035.200	7800.000	1035.000	8110.000	1034.800	8265.000
GR	1034.700	8480.000	1036.000	8820.000	1036.500	8860.000	1037.400	9000.000	1037.800	9510.000
GR	1038.000	9660.000	1039.100	9680.000	1038.000	9695.000	1038.000	9755.000	1040.000	9760.000
GR	1041.000	9765.000	1041.000	9770.000	1041.000	9780.000	1041.000	9790.000	1041.000	9800.000
GR	1040.000	9820.000	1038.000	9830.000	1032.000	9845.000	1031.800	9875.000	1030.000	9910.000
GR	1028.000	9915.000	1027.400	9970.000	1028.000	10000.000	1030.000	10090.000	1032.000	10097.000
GR	1036.000	10108.000	1038.000	10125.000	1038.000	10530.000	1036.000	10555.000	1036.000	10595.000
GR	1038.000	10675.000	1040.000	10685.000	1042.000	10705.000	0.000	0.000	0.000	0.000
ET	54.000	0.000	7.100	0.000	0.000	0.000	9829.000	10400.000	0.000	0.000
X1	54.000	55.000	9830.000	10235.000	440.000	190.000	230.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1045.000	5965.000	1045.600	6005.000	1045.700	6090.000	1045.000	6360.000	1044.000	6775.000
GR	1042.000	6900.000	1041.000	7020.000	1040.000	7125.000	1038.700	7230.000	1038.000	7385.000
GR	1036.800	7475.000	1037.300	7825.000	1036.300	8165.000	1035.400	8460.000	1036.400	8535.000
GR	1036.500	8790.000	1037.000	9055.000	1037.700	9260.000	1038.000	9540.000	1039.200	9635.000
GR	1038.000	9705.000	1034.000	9712.000	1033.300	9750.000	1034.000	9780.000	1036.000	9785.000
GR	1038.000	9800.000	1040.000	9810.000	1042.000	9815.000	1042.000	9830.000	1042.000	9845.000
GR	1036.000	9862.000	1034.000	9868.000	1032.000	9875.000	1030.000	9890.000	1028.000	9915.000
GR	1029.000	10000.000	1030.000	10035.000	1030.000	10115.000	1032.000	10140.000	1034.000	10160.000
GR	1036.000	10165.000	1038.000	10235.000	1039.100	10380.000	1038.000	10510.000	1038.000	10535.000
GR	1036.000	10550.000	1036.000	10580.000	1038.000	10665.000	1040.000	10670.000	1042.000	10685.000
GR	1042.600	11215.000	1043.100	11525.000	1043.100	11780.000	1044.000	11840.000	1046.000	13150.000
ET	59.000	0.000	7.100	0.000	0.000	0.000	9719.000	10481.000	0.000	0.000
X1	59.000	42.000	9720.000	10480.000	1200.000	440.000	510.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1046.000	6900.000	1045.500	7000.000	1045.000	7100.000	1044.000	7305.000	1042.700	7410.000
GR	1042.000	7525.000	1041.700	7640.000	1041.500	7875.000	1041.000	8170.000	1041.500	8560.000
GR	1040.000	8720.000	1040.000	8800.000	1040.800	9085.000	1041.000	9500.000	1042.000	9585.000
GR	1044.000	9600.000	1042.000	9615.000	1040.000	9630.000	1044.000	9700.000	1044.000	9720.000
GR	1044.000	9745.000	1042.000	9765.000	1040.000	9770.000	1038.000	9800.000	1036.000	9805.000
GR	1034.000	9815.000	1032.000	9865.000	1030.700	9880.000	1032.000	9890.000	1034.000	9915.000
GR	1032.000	9945.000	1031.600	10000.000	1032.000	10060.000	1034.000	10090.000	1036.000	10210.000
GR	1036.000	10320.000	1038.000	10335.000	1038.000	10410.000	1040.000	10440.000	1042.000	10455.000
GR	1043.700	10480.000	1046.000	12750.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	63.000	0.000	7.100	0.000	0.000	0.000	9669.000	10345.000	0.000	0.000
X1	63.000	37.000	9670.000	10345.000	460.000	330.000	400.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1050.000	6725.000	1049.000	6950.000	1048.000	7040.000	1047.200	7190.000	1046.000	7330.000
GR	1044.000	7710.000	1043.400	8020.000	1043.200	8470.000	1043.100	8630.000	1043.100	8965.000
GR	1043.300	9315.000	1043.300	9490.000	1042.000	9535.000	1042.000	9655.000	1043.500	9670.000
GR	1042.000	9685.000	1040.000	9715.000	1038.000	9760.000	1036.000	9790.000	1034.000	9845.000

GR	1034.000	9890.000	1033.700	9960.000	1032.900	10000.000	1032.300	10020.000	1032.000	10140.000
GR	1034.000	10170.000	1038.000	10175.000	1040.000	10195.000	1041.300	10225.000	1042.000	10320.000
GR	1043.900	10345.000	1043.500	10375.000	1043.500	10570.000	1043.400	11390.000	1044.000	11350.000
GR	1044.700	11390.000	1046.000	12390.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	76.500	0.000	7.100	0.000	0.000	0.000	9569.100	10236.000	0.000	0.000
X1	79.500	40.000	9570.000	10285.000	730.000	750.000	750.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1049.600	7020.000	1048.000	7215.000	1047.700	7255.000	1046.000	7310.000	1045.800	7420.000
GR	1045.000	7825.000	1145.100	7385.000	1044.300	8190.000	1045.000	8520.000	1044.700	8730.000
GR	1045.200	9075.000	1044.600	9360.000	1044.000	9460.000	1043.000	9485.000	1042.000	9535.000
GR	1042.000	9550.000	1044.000	9565.000	1044.000	9570.000	1044.000	9580.000	1042.000	9595.000
GR	1040.700	9625.000	1041.800	9720.000	1040.000	9825.000	1038.000	9840.000	1034.000	9880.000
GR	1036.000	9915.000	1036.900	10000.000	1037.200	10080.000	1036.000	10170.000	1036.000	10180.000
GR	1046.000	10240.000	1046.000	10250.000	1045.000	10270.000	1045.000	10285.000	1046.000	10390.000
GR	1046.000	10490.000	1046.500	10560.000	1046.000	10600.000	1045.000	11300.000	1048.000	11700.000
ET	77.000	0.000	7.100	0.000	0.000	0.000	9759.000	10255.000	0.000	0.000
X1	77.000	37.000	9760.000	10255.000	480.000	680.000	550.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1052.000	7105.000	1050.000	7110.000	1048.400	7205.000	1048.000	7500.000	1047.000	8115.000
GR	1047.300	8410.000	1047.200	8760.000	1046.000	9080.000	1045.700	9225.000	1045.500	9330.000
GR	1044.800	9580.000	1044.000	9680.000	1044.000	9735.000	1048.000	9745.000	1050.000	9755.000
GR	1050.000	9760.000	1050.000	9770.000	1048.000	9775.000	1046.000	9785.000	1044.000	9810.000
GR	1042.000	9880.000	1040.000	9910.000	1038.000	9920.000	1037.700	10000.000	1036.000	10055.000
GR	1036.000	10095.000	1038.000	10115.000	1040.000	10120.000	1042.000	10130.000	1044.000	10140.000
GR	1044.000	10175.000	1046.000	10185.000	1045.000	10230.000	1047.300	10255.000	1048.000	10270.000
GR	1050.000	10280.000	1052.000	10295.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	84.000	0.000	7.100	0.000	0.000	0.000	9844.000	10331.000	0.000	0.000
X1	84.000	40.000	9845.000	10400.000	520.000	700.000	700.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1054.000	7475.000	1052.000	7490.000	1052.000	7520.000	1052.000	7545.000	1051.000	7570.000
GR	1050.000	7795.000	1048.500	7970.000	1048.400	8210.000	1048.200	8500.000	1048.200	8820.000
GR	1050.000	8950.000	1048.700	9320.000	1048.000	9480.000	1047.500	9630.000	1046.000	9740.000
GR	1046.000	9815.000	1052.000	9840.000	1053.500	9845.000	1052.000	9855.000	1046.000	9875.000
GR	1044.000	9880.000	1042.000	9905.000	1036.000	9915.000	1035.700	9970.000	1036.000	9990.000
GR	1038.000	10025.000	1038.000	10045.000	1040.000	10115.000	1042.000	10160.000	1042.000	10215.000
GR	1040.000	10230.000	1040.000	10360.000	1042.000	10370.000	1044.400	10400.000	1042.000	10415.000
GR	1042.000	10490.000	1044.000	10570.000	1048.000	10610.000	1050.000	10615.000	1050.000	10790.000
ET	88.700	0.000	7.100	0.000	0.000	0.000	9729.000	10331.000	0.000	0.000
	GRAVEL PIT, LOB BREAKOUT TO X95.5. D/S B.O. LIMITED IN Q TO X77									
X1	88.700	47.000	9730.000	10300.000	520.000	450.000	470.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1054.000	6520.000	1052.000	6550.000	1052.000	6580.000	1052.000	7171.000	1052.000	7440.000
GR	1052.000	8650.000	1050.400	8770.000	1050.200	8910.000	1050.200	9090.000	1050.100	9250.000
GR	1050.000	9630.000	1050.000	9725.000	1052.000	9731.000	1050.000	9735.000	1036.000	9760.000
GR	1035.700	9765.000	1036.000	9770.000	1042.000	9810.000	1042.000	9910.000	1034.000	9930.000
GR	1036.000	9990.000	1038.000	10000.000	1036.000	10030.000	1034.000	10100.000	1034.000	10170.000
GR	1044.000	10220.000	1044.000	10220.000	1045.600	10300.000	1045.000	10310.000	1046.000	10360.000
GR	1048.000	10430.000	1050.000	10455.000	1052.000	10500.000	1052.000	10530.000	1050.000	10560.000
GR	1050.000	10610.000	1052.000	10615.000	1052.000	10650.000	1050.000	10700.000	1052.000	10710.000
GR	1052.000	10760.000	1050.000	10755.000	1050.000	10830.000	1050.000	10850.000	1051.100	10950.000

GR	1052.000	10760.000	1050.000	10765.000	1050.000	10830.000	1050.910	10850.000	1051.100	10950.000

GR	1052.000	10980.000	1058.000	11030.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	95.500	0.000	7.100	0.000	0.000	0.000	9499.000	10306.000	0.000	0.000
GRAVEL PIT, LOB BREAKOUT TO X88.7.										
X1	95.500	40.000	9500.000	10305.000	400.000	680.000	680.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1056.000	6420.000	1055.800	6575.000	1055.000	7030.000	1053.300	7530.000	1053.300	7540.000
GR	1052.000	7550.000	1052.000	7610.000	1052.000	7615.000	1052.000	8270.000	1052.000	8610.000
GR	1052.000	8855.000	1052.000	9140.000	1053.600	9340.000	1052.000	9470.000	1052.000	9530.000
GR	1050.000	9535.000	1050.000	9840.000	1048.000	9845.000	1046.000	9850.000	1044.000	9890.000
GR	1042.000	9905.000	1040.000	9915.000	1037.300	9950.000	1035.000	10000.000	1036.000	10085.000
GR	1034.000	10120.000	1034.000	10240.000	1036.000	10250.000	1033.100	10260.000	1038.000	10280.000
GR	1052.000	10305.000	1050.000	10310.000	1050.000	10330.000	1052.000	10420.000	1050.700	10580.000
GR	1051.000	10880.000	1052.000	10975.000	1052.100	11070.000	1054.000	11280.000	1054.000	11430.000
ET	100.700	0.000	7.100	0.000	0.000	0.000	9629.000	10191.000	0.000	0.000
X1	100.700	48.000	9630.000	10190.000	550.000	620.000	520.000	0.000	0.000	0.000
GR	1056.000	7400.000	1055.100	7450.000	1070.000	7451.000	1070.000	7600.000	1056.000	7601.000
GR	1055.000	7730.000	1070.000	7731.000	1070.000	8019.000	1054.500	8020.000	1054.300	8110.000
GR	1070.000	8111.000	1070.000	8139.000	1054.200	8140.000	1054.200	8210.000	1054.100	8450.000
GR	1054.200	8600.000	1054.100	8740.000	1053.600	9180.000	1054.000	9300.000	1054.500	9450.000
GR	1054.000	9570.000	1054.000	9600.000	1055.000	9630.000	1054.000	9545.000	1052.000	9670.000
GR	1051.000	9720.000	1052.000	9820.000	1052.000	9865.000	1050.000	9890.000	1042.000	9900.000
GR	1042.000	9960.000	1040.100	9970.000	1035.000	9980.000	1035.100	10070.000	1034.700	10100.000
GR	1036.000	10120.000	1038.000	10130.000	1040.000	10155.000	1052.000	10190.000	1052.000	10240.000
GR	1053.000	10270.000	1052.000	10300.000	1052.000	10380.000	1052.200	10430.000	1053.300	10570.000
GR	1053.700	10880.000	1054.000	11140.000	1062.000	11200.000	0.000	0.000	0.000	0.000
ET	107.000	0.000	7.100	0.000	0.000	0.000	9709.000	10255.000	0.000	0.000
X1	107.000	48.000	9710.000	10255.000	300.000	640.000	630.000	0.000	0.000	0.000
GR	1058.900	7275.000	1058.700	7480.000	1058.200	7715.000	1058.000	7750.000	1056.000	7810.000
GR	1070.000	7911.000	1070.000	7920.100	1055.300	7921.000	1055.100	8325.000	1055.000	8120.000
GR	1070.000	8121.000	1070.000	8194.000	1055.500	8195.000	1055.200	8330.000	1070.000	8331.000
GR	1070.000	8389.000	1055.300	8390.000	1055.100	8580.000	1054.200	8630.000	1054.400	8835.000
GR	1054.500	9105.000	1054.800	9370.000	1056.000	9490.000	1056.000	9520.000	1056.000	9710.000
GR	1052.000	9735.000	1040.000	9750.000	1039.500	9755.000	1040.100	9770.000	1040.000	9830.000
GR	1038.000	9835.000	1038.000	9960.000	1040.000	9985.000	1040.000	10110.000	1042.000	10130.000
GR	1042.000	10180.000	1045.000	10190.000	1045.000	10240.000	1054.000	10255.000	1055.000	10365.000
GR	1055.700	10460.000	1055.700	10550.000	1056.000	10735.000	1057.000	10740.000	1056.100	10755.000
GR	1056.200	10870.000	1056.000	10980.000	1060.000	11010.000	0.000	0.000	0.000	0.000
NC	0.045	0.045	0.035	0.300	0.500	0.000	0.000	0.000	0.000	0.000
ET	110.700	0.000	7.100	0.000	0.000	0.000	9734.000	10236.000	0.000	0.000
X1	110.700	42.000	9735.000	10235.000	600.000	300.000	370.000	0.000	0.000	0.000
GR	1060.000	7845.000	1060.000	7846.000	1058.000	7852.000	1058.000	7854.000	1057.700	8000.000
GR	1058.000	8145.000	1058.000	8150.000	1058.000	8200.000	1057.100	8540.000	1057.400	8810.000
GR	1056.600	8950.000	1056.100	9375.000	1056.000	9100.000	1055.600	9320.000	1055.400	9430.000
GR	1056.000	9495.000	1056.700	9525.000	1056.000	9540.000	1054.000	9545.000	1054.000	9690.000
GR	1055.600	9735.000	1054.000	9770.000	1042.000	9790.000	1041.300	9820.000	1042.000	9870.000
GR	1046.000	9880.000	1048.000	9910.000	1049.000	10000.000	1049.000	10120.000	1048.000	10160.000
GR	1046.800	10190.000	1048.000	10215.000	1056.000	10235.000	1054.000	10250.000	1054.000	10340.000
GR	1056.000	10345.000	1056.700	10500.000	1056.000	10590.000	1055.800	10670.000	1056.000	10770.000
GR	1058.000	10810.000	1060.000	10830.000	0.000	0.000	0.000	0.000	0.000	0.000

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ET    117.200      0.000      7.100      0.000      0.000      0.000   9844.000  10196.000      0.000      0.000
        DOWNSTREAM SIDE GLENDALE AVE BRIDGE
        BRIDGE FOOTING NEARLY EXPOSED ON GLENDALE BRIDGE
X1    117.200     33.000   9845.000  10195.000    800.000    400.000    650.000      0.000      0.000      0.000
X3     10.000      0.000      0.000      0.000      0.000      0.000      0.000   1061.000   1061.000      0.000
GR   1066.300   7775.000   1064.000   7120.000   1062.000   8020.000   1060.000   8035.000   1060.000   8037.000
GR   1059.300   8280.000   1060.000   8340.000   1060.000   8360.000   1060.000   8380.000   1058.500   8500.000
GR   1058.700   8630.000   1057.900   8780.000   1057.900   9100.000   1058.400   9330.000   1058.000   9550.000
GR   1058.000   9730.000   1056.000   9845.000   1054.000   9855.000   1052.000   9835.000   1050.000   9910.000
GR   1048.000   9970.000   1046.200  10030.000   1045.200  10120.000   1048.000  10155.000   1056.000  10195.000
GR   1057.000  10250.000   1057.500  10460.000   1056.000  10550.000   1055.100  10340.000   1056.000  11415.000
GR   1058.000  11555.000   1060.000  11620.000   1062.000  11685.000      0.000      0.000      0.000      0.000

SB      0.900      1.560      2.900      0.000    352.000     19.800   5503.000      0.000   1046.500   1046.200
ET    118.000      0.000      7.100      0.000      0.000      0.000   9844.000  10196.000      0.000      0.000
        UPSTREAM SIDE GLENDALE AVE BRIDGE-PERCHED. 2FT DEBRIS PER PIER.
        1983 TOPO WITHIN 0.3FT OF BRIDGE PLAN DECK.USED PLANS MINUS 0.3FT
X1    118.000     33.000   9845.000  10195.000     52.000     52.000     52.000      0.000      0.000      0.000
X2      0.000      0.000      1.000   1063.100   1063.000      0.000      0.000      0.000      0.000      0.000
X3     10.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
BT    -18.000   8080.000   1064.500      0.000   8140.000   1063.900      0.000   1063.500   1063.000      0.000
BT      0.000   8720.000   1063.500      0.000   9000.000   1063.500      0.000   8420.000   1063.600      0.000
BT      0.000   9650.000   1064.000      0.100   9700.000   1064.500      0.000   9230.000   1063.600      0.000
BT      0.000   9845.000   1068.600   1063.100  10195.000   1068.600   1063.100   9844.000   1066.100      0.000
BT      0.000  10370.000   1064.000      0.200  10600.000   1063.300      0.000  10195.000   1066.100      0.000
BT      0.000  11195.000   1063.400      0.000  11480.000   1063.600      0.000  11150.000   1063.000      0.000
GR   1066.000   7865.000   1066.000   7866.100   1065.000   8030.000   1065.000   8031.000   1065.000   8032.000
GR   1064.000   8190.000   1062.900   8250.000   1062.000   8320.000   1060.100   8515.000   1060.000   9170.000
GR   1059.000   9290.000   1060.000   9710.000   1060.000   9835.000   1058.000   9845.000   1056.000   9860.000
GR   1050.000   9895.000   1048.000   9920.000   1047.500  10020.000   1048.000  10130.000   1050.000  10160.000
GR   1052.000  10175.000   1058.000  10195.000   1058.000  10210.000   1060.000  10220.000   1058.000  10730.000
GR   1057.400  11030.000   1057.400  11190.000   1058.000  11330.000   1060.000  11400.000   1062.000  11433.000
GR   1064.000  11415.000   1064.000  11450.000   1066.000  11485.000      0.000      0.000      0.000      0.000

ET    120.000      5.100      7.100      0.100   9550.000  10420.000   9799.000  10225.000      0.000      0.000
X1    120.000     40.000   9800.000  10205.000    200.000    130.000    200.000      0.000      0.000      0.000
X3     10.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
GR   1066.800   7690.000   1066.200   7795.000   1066.000   7840.000   1064.400   8070.000   1064.000   8160.000
GR   1062.000   8255.000   1060.300   8300.000   1060.300   8480.000   1060.200   8715.000   1069.900   8950.000
GR   1061.400   9130.000   1060.400   9200.000   1060.000   9220.000   1059.400   9260.000   1059.500   9360.000
GR   1058.400   9430.000   1059.800   9530.100   1058.000   9630.000   1058.000   9560.000   1058.600   9725.000
GR   1058.000   9750.000   1058.000   9780.000   1058.200   9800.000   1058.000   9820.000   1056.000   9825.000
GR   1052.000   9850.000   1050.000   9870.000   1046.000   9880.000   1046.000  10180.000   1058.000  10205.000
GR   1058.500  10270.000   1058.500  10330.000   1059.600  10350.000   1059.200  10400.000   1058.400  10700.000
GR   1058.000  11000.000   1056.700  11185.000   1056.700  11275.000   1060.000  11345.000   1066.000  11370.000

NC      0.045      0.045      0.035      0.100      0.000      0.000      0.000      0.000      0.000      0.000
ET    125.000      5.100      7.100      0.000   8950.000  10900.000   9789.000  10241.000      0.000      0.000
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THIS RUN EXECUTED 15 FEB 85 8:31:15

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 HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
 ERROR CORR - 01,02,03,04,05
 MODIFICATION - 50,51,52,53,54,55
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

100YR NONSED CHANNEL AT

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
	501.450	0.00	0.00	0.00	1019.20	39000.00	1027.50	1024.62	1027.62	9.91	3.20	15340.81	12386.96
*	13.000	1300.00	0.00	0.00	1023.50	39000.00	1029.56	1029.56	1030.87	101.21	11.75	4817.73	3876.60
	20.000	700.00	0.00	0.00	1023.40	39000.00	1033.51	1032.27	1034.09	21.25	8.02	8301.31	8459.04
	26.800	680.00	0.00	0.00	1023.70	39000.00	1034.91	1032.83	1035.11	8.78	4.86	13299.56	13160.25
	32.600	585.00	0.00	0.00	1024.00	39000.00	1035.42	1034.73	1036.05	23.29	8.41	8500.45	8380.88
	38.000	580.00	0.00	0.00	1024.90	39000.00	1036.56	1035.20	1037.32	21.80	8.08	7056.80	8352.47
	45.300	700.00	0.00	0.00	1025.90	39000.00	1037.81	1037.71	1039.75	45.28	12.16	4424.33	5795.66
	51.700	670.00	0.00	0.00	1027.40	39000.00	1040.73	1039.25	1042.16	28.52	10.35	4851.35	7303.35
	54.000	230.00	0.00	0.00	1028.30	39000.00	1041.72	1038.76	1042.71	18.57	8.50	5546.42	9049.74
	59.000	500.00	0.00	0.00	1030.70	39000.00	1043.18	1039.42	1043.55	10.56	5.45	10246.71	11998.97
	63.000	400.00	0.00	0.00	1032.30	39000.00	1043.38	1040.17	1044.40	27.20	8.15	5159.20	7477.76
	70.500	750.00	0.00	0.00	1034.00	39000.00	1045.53	1043.25	1046.45	27.22	7.95	6123.17	7475.79
	77.000	650.00	0.00	0.00	1035.00	39000.00	1047.12	1045.82	1049.89	87.60	13.36	2919.80	4166.79
	84.000	700.00	0.00	0.00	1035.70	39000.00	1050.91	1045.09	1051.35	7.22	5.60	7706.46	14517.82
	88.700	470.00	0.00	0.00	1034.00	39000.00	1051.25	1043.41	1051.54	5.24	5.17	9086.16	17339.91
	95.500	680.00	0.00	0.00	1034.00	39000.00	1051.65	1042.84	1052.13	9.45	5.54	7034.88	12687.91
	100.700	520.00	0.00	0.00	1034.70	39000.00	1051.67	1046.79	1053.29	31.03	10.21	3818.29	6995.82

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
107.000	630.00	0.00	0.00	1038.00	39000.00	1053.64	1046.01	1054.16	6.35	5.78	6747.15	15476.00
* 110.700	370.00	0.00	0.00	1041.30	39000.00	1053.18	1053.18	1055.27	101.48	14.11	2764.68	3871.50
117.200	650.00	0.00	0.00	1045.20	39000.00	1058.21	1055.86	1060.31	37.03	11.63	3354.75	6409.27
118.000	52.00	1063.00	1063.10	1047.50	39000.00	1058.65	0.00	1060.91	42.13	12.08	3228.40	6008.41
120.000	200.00	0.00	0.00	1046.00	39000.00	1060.99	1053.91	1061.71	8.87	6.98	6405.41	13095.34
125.000	500.00	0.00	0.00	1046.00	39000.00	1061.51	1054.95	1062.16	9.05	6.69	7479.47	12965.43
* 131.400	640.00	0.00	0.00	1050.10	39000.00	1062.47	1062.47	1064.47	58.90	11.47	3860.05	5081.70
135.000	390.00	0.00	0.00	1051.90	39000.00	1064.73	1064.02	1065.11	29.38	10.10	5411.70	7195.06
140.000	500.00	0.00	0.00	1054.00	39000.00	1066.51	1063.06	1067.17	14.65	7.06	7663.50	10186.86
143.000	300.00	0.00	0.00	1058.00	39000.00	1066.94	1065.54	1067.83	27.49	8.06	6380.52	7437.76
* 146.000	290.00	0.00	0.00	1058.00	39000.00	1068.69	1068.69	1070.13	48.78	10.90	5323.92	5583.83
149.600	360.00	0.00	0.00	1060.00	40000.00	1070.51	1069.51	1071.44	26.26	8.61	7007.84	7806.14
158.000	840.00	0.00	0.00	1059.60	40000.00	1072.82	1071.49	1073.47	21.42	7.51	7949.01	8643.11
167.000	900.00	0.00	0.00	1059.00	40000.00	1074.11	1073.04	1075.65	21.14	10.72	5581.43	8698.92
170.000	300.00	0.00	0.00	1059.30	40000.00	1074.23	1074.10	1076.78	37.00	13.31	3902.72	6576.32
* 174.100	410.00	0.00	0.00	1059.60	40000.00	1077.12	1077.12	1078.92	26.25	12.21	5805.29	7807.85
178.000	375.00	0.00	0.00	1060.00	40000.00	1079.25	1070.20	1079.96	7.87	7.27	8040.02	14256.60
178.500	50.00	0.00	0.00	1067.70	40000.00	1079.45	1077.15	1080.06	16.26	6.90	7915.92	9919.86
181.600	310.00	0.00	0.00	1066.20	40000.00	1079.52	1078.87	1081.00	31.39	10.69	5315.76	7139.23
185.200	360.00	0.00	0.00	1067.70	40000.00	1080.67	1079.40	1082.10	28.61	10.20	5327.98	7478.36
190.000	480.00	0.00	0.00	1067.60	40000.00	1082.34	1078.69	1083.38	23.40	8.25	5233.78	8269.39
193.600	360.00	0.00	0.00	1070.00	40000.00	1082.82	1080.59	1084.76	42.49	11.20	3702.43	6136.19
198.400	480.00	0.00	0.00	1070.80	40000.00	1084.92	1080.85	1085.26	22.28	9.27	4314.45	8474.31
202.400	400.00	0.00	0.00	1072.20	40000.00	1085.51	1082.96	1087.71	42.25	11.91	3358.36	6152.78
206.000	360.00	0.00	0.00	1073.20	40000.00	1087.20	1084.82	1089.30	45.35	11.64	3437.74	5938.97
210.500	450.00	0.00	0.00	1071.00	40000.00	1089.42	1081.78	1090.17	8.43	7.21	6401.67	13773.13

100YR NONSED CHANNEL AT

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
501.450	39000.00	1027.50	0.00	0.00	0.00	6594.17	0.00
* 13.000	39000.00	1029.56	0.00	2.06	0.00	1868.41	1300.00
20.000	39000.00	1033.51	0.00	3.96	0.00	2287.26	700.00
26.800	39000.00	1034.91	0.00	1.40	0.00	3598.65	680.00
32.600	39000.00	1035.42	0.00	0.52	0.00	3137.19	585.00
38.000	39000.00	1036.56	0.00	1.14	0.00	2183.94	580.00
45.000	39000.00	1037.81	0.00	1.25	0.00	1263.48	700.00
51.700	39000.00	1040.73	0.00	2.92	0.00	886.90	670.00
54.000	39000.00	1041.72	0.00	0.99	0.00	837.12	230.00
59.000	39000.00	1043.18	0.00	1.46	0.00	3019.93	500.00
63.000	39000.00	1043.38	0.00	0.20	0.00	2266.31	400.00
70.500	39000.00	1045.53	0.00	2.15	0.00	2681.77	750.00
77.000	39000.00	1047.12	0.00	1.59	0.00	472.19	650.00
84.000	39000.00	1050.91	0.00	3.78	0.00	931.35	700.00
88.700	39000.00	1051.25	0.00	0.34	0.00	2076.58	470.00
95.500	39000.00	1051.65	0.00	0.41	0.00	798.27	680.00
100.700	39000.00	1051.67	0.00	0.02	0.00	419.83	520.00
107.000	39000.00	1053.64	0.00	1.97	0.00	529.63	630.00
* 110.700	39000.00	1053.18	0.00	-0.46	0.00	456.58	370.00
117.200	39000.00	1058.21	0.00	5.03	0.00	350.00	650.00
118.000	39000.00	1058.65	0.00	0.44	0.00	350.00	52.00
120.000	39000.00	1060.99	0.00	2.34	0.00	850.00	200.00
125.000	39000.00	1061.51	0.00	0.52	0.00	1850.00	500.00
* 131.400	39000.00	1062.47	0.00	0.96	0.00	1560.89	640.00

COMPUTER PRINTOUT 2

HEC-2 INPUT & OUTPUT DATA

COE ANALYSIS WITH GMA CHANNELIZATION

Job #1068-05
CVL #4/22/10

COMPUTER PRINTOUT 2

FILE: LNRGAPTW NEW RIVER = AGUA FRIA R. CONFLUENCE TO GLENDALE AVE. W/GLENDALE AIRPORT CHANNELIZATION FROM HALF SIZE CONSTR. PLANS.

5 AUG 85 14:36:17 PAGE 1

UNTIL "AS BUILT" PLANS ARE AV

DAVE JOHNSON

FLOODWAY CONFLUENCE TO GLENDALE AIRPORT CHANNEL PRELIMINARY DATA ONLY

THIS RUN EXECUTED 5 AUG 85 14:36:18

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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C
T1      AGUA FRIA RIVER,NEW RIVER AND SKUNK CREEK GILA R TO ACDC
T2      NEW RIVER=GLENDALE AIRPORT CONSTR.PLAN TOPO ONLY USED TO 107TH AVE.
T3      100-YR FLOODWAY W/GLENDALE AIRPORT CHAN. PRELIMINARY DATA ONLY
J1   ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0.       3.        0.        0.  0.000000      0.00      0.0       0.   1028.210   0.000
J2   NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
     -1.000    0.000    -1.000     0.000     0.000     0.000    -1.000     0.000     0.000     15.000

NC      0.045     0.045     0.035     0.200     0.400     0.000     0.000     0.000     0.000     0.000
GT   39000.000 39000.000 39000.000 69000.000     0.000     0.000     0.000     0.000     0.000     0.000
ET     501.45     0.00      7.100     0.000     0.000     0.000  9300.000 12150.000     0.000     0.000
X1     501.45    74.00   9150.000 11440.000     0.000     0.000     0.000     0.000     0.000     0.000
GR    1034.000  5420.000  1032.000  5520.000  1030.000  6550.000  1029.300  7130.000  1028.500  8140.000
GR    1028.000  8260.000  1027.000  8530.000  1027.000  9080.000  1027.700  9150.000  1026.000  9220.000
GR    1025.300  9240.000  1026.000  9260.000  1027.000  9300.000  1026.000  9315.000  1020.000  9335.000
GR    1021.000  9445.000  1022.000  9450.000  1022.000  9560.000  1020.000  9615.000  1019.200  9640.000
GR    1021.000  9650.000  1022.000  9665.000  1023.000  9675.000  1022.000  9685.000  1021.700  9860.000
GR    1022.900  10000.000 1025.500  10050.000 1022.000  10200.000 1022.300  10300.000 1022.000  10390.000
GR    1022.000  10480.000 1026.000  10520.000 1026.000  10600.000 1027.500  10720.000 1026.000  10965.000
GR    1024.000  10975.000 1026.000  11000.000 1026.300  11130.000 1026.000  11260.000 1026.000  11370.000
GR    1028.000  11440.000 1029.200  11470.000 1028.000  11500.000 1026.000  11750.000 1024.000  11800.000
GR    1024.000  11830.000 1026.000  11920.000 1026.000  11950.000 1025.600  12070.000 1024.000  12140.000
GR    1024.500  12210.000 1024.000  12270.000 1022.000  12280.000 1020.400  12320.000 1022.000  12360.000
GR    1024.000  12435.000 1026.000  12480.000 1026.000  12565.000 1024.000  12630.000 1024.000  12650.000
GR    1025.000  12720.000 1025.000  12820.000 1026.000  12900.000 1024.000  12960.000 1026.000  13000.000
GR    1027.000  13370.000 1026.000  13135.000 1026.000  13580.000 1025.800  14080.000 1026.000  14550.000
GR    1025.500  15000.000 1027.300  15150.000 1030.000  15250.000 1030.500  15270.000     0.000     0.000

CT      1.000  31313.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
ET     10.000      5.10      7.100     0.000  9650.000 10660.000  9660.000 10560.000     0.000     0.000
          NEW X-SECT TO DEFINE TRANSITION TO NATURAL GRND FROM AIRPORT CHAN
        AIRPORT PLANS CHAN START STA.14+77 EQUALS COE STA.12.50.
          USED COE STATIONING. NO VERTICAL TOPO ADJUSTMENT USED.
X1     10.000    24.00   9730.000 10260.000  1700.000  1000.000  2000.000     0.000     0.000     0.000
X3     10.000     0.00      0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
GR    1035.000  6900.000  1024.000  6950.000  1024.700  7370.000  1024.800  8000.000  1025.200  8430.000
GR    1026.000  8470.000  1027.100  8700.000  1026.300  9070.000  1028.000  9660.000  1028.300  9730.000
GR    1028.000  9830.000  1027.700  9890.000  1026.000  9940.000  1024.000  9960.000  1024.000  10050.000
GR    1026.000 10230.000  1028.000 10260.000  1028.000 10380.000  1029.800 10570.000  1028.500 10750.000
GR    1031.000 11000.000  1030.000 11500.000  1032.000 11510.000  1033.500 11630.000     0.000     0.000
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GT      1.000  32667.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
ET     12.500      0.000      7.100      0.000      0.000      0.000   9939.000  10416.000      0.000      0.000
        AP PLAN STA.14+77 CROSS SECTION.
X1     12.500      7.000   9940.000  10415.000    250.000    250.000    250.000      0.000      0.000      0.000
X4      2.100   1030.000   9980.000   1031.000   9890.000      0.000      0.000      0.000      0.000      0.000
GR   1031.200   9830.000   1029.000   9940.000   1023.000   9985.000   1022.500  10000.000   1025.300  10410.000
GR   1027.600  10415.000   1029.500  10450.000      0.000      0.000      0.000      0.000      0.000      0.000

GT      1.000  33061.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
ET     13.730      0.000      7.100      0.000      0.000      0.000   9929.000  10417.000      0.000      0.000
NC      0.000      0.000      0.000      0.100      0.300      0.000      0.000      0.000      0.000      0.000
        AP PLAN STA.16+00. STATION ADJUSTED TO CONFORM TO PLAN PLOT.
X1     13.730      9.000   9930.000  10416.000    123.000    123.000    123.000      0.000      0.000      0.000
GR   1031.400   9865.000   1030.000   9880.000   1029.800   9930.000   1029.000   9940.000   1023.000   9975.000
GR   1022.800  10000.000   1025.600  10410.000   1029.500  10416.000   1027.800  10420.000      0.000      0.000

GT      1.000  34044.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
ET     15.730      0.000      7.100      0.000      0.000      0.000   9889.000  10416.000      0.000      0.000
        AP PLAN STA.18+00.
X1     15.730     11.000   9890.000  10415.000    200.000    200.000    200.000      0.000      0.000      0.000
GR   1032.100   9800.000   1031.000   9820.000   1031.000   9830.000   1030.000   9830.000   1030.000   9890.000
GR   1025.000   9925.000   1024.000   9970.000   1023.200  10000.000   1026.000  10410.000   1028.200  10415.000
GR   1029.500  10440.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000

GT      1.000  35775.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
ET     19.730      0.000      7.100      0.000      0.000      0.000   9879.000  10416.000      0.000      0.000
        AP PLAN STA.22+00.
X1     19.730     10.000   9880.000  10415.000    200.000    200.000    200.000      0.000      0.000      0.000
X4      4.000   1032.000   9780.000   1031.000   9740.000   1031.000   9620.000   1032.000   9600.000      0.000
GR   1033.000   9570.000   1032.000   9600.000   1030.000   9860.000   1031.500   9880.000   1024.500   9915.000
GR   1024.500   9935.000   1024.000  10000.000   1026.800  10410.000   1029.000  10415.000   1031.000  10450.000

GT      1.000  36115.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
ET     23.730      0.000      7.100      0.000      0.000      0.000   9884.000  10411.000      0.000      0.000
        AP PLAN STA.26+00
X1     23.730      9.000   9885.000  10410.000    400.000    400.000    400.000      0.000      0.000      0.000
X4      2.000   1032.000   9810.000   1033.000   9800.000      0.000      0.000      0.000      0.000      0.000
GR   1034.400   9770.000   1032.000   9860.000   1031.000   9885.000   1026.000   9930.000   1025.700   9985.000
GR   1024.800  10000.000   1027.600  10405.000   1029.800  10410.000   1032.000  10450.000      0.000      0.000

GT      1.000  36560.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
ET     29.730      0.000      7.100      0.000      0.000      0.000   9884.000  10411.000      0.000      0.000
        AP PLAN STA.32+00. LAST RT. BANK STATION-SWITCHES TO DIKE PROTECTION.
X1     29.730      6.000   9885.000  10410.000    600.000    600.000    600.000      0.000      0.000      0.000
GR   1034.900   9630.000   1033.000   9885.000   1026.000  10000.000   1029.200  10405.000   1031.000  10410.000
GR   1035.000  10490.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000

GT      1.000  37125.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
ET     31.730      0.000      7.100      0.000      0.000      0.000   9879.000  10431.000      0.000      0.000
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          AP PLAN STA.34+00. RT. DIKE STARTS STA.32+69.
X1     31.730      5.000   9880.000  10430.000    200.000    200.000    200.000      0.000      0.000      0.000
GR   1035.000   9700.000   1033.000   9880.000   1026.400  10000.000   1029.100  10405.000   1041.000  10430.000

QT      1.000  38020.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
ET     35.730      0.000      7.100      0.000      0.000      0.000   9839.000  10425.000      0.000      0.000
          AP PLAN STA.38+00. RT DIKE FILLS NATURAL RIVER BED.
X1     35.730      8.000   9840.000  10427.000    400.000    400.000    400.000      0.000      0.000      0.000
GR   1036.200   9673.000   1036.200   9774.000   1036.200   9775.000   1034.500   9840.000   1027.000  10000.000
GR   1029.600  10405.000   1041.000  10427.000   1041.000  10460.000      0.000      0.000      0.000      0.000

QT      1.000  38475.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
ET     39.730      0.000      7.100      0.000      0.000      0.000   9859.000  10426.000      0.000      0.000
          AP PLAN STA.42+00. RT DIKE FILLS NATURAL RIVER BED.
X1     39.730     10.000   9860.000  10425.000    400.000    400.000    400.000      0.000      0.000      0.000
GR   1037.800   9650.000   1037.000   9760.000   1038.500   9791.000   1038.000   9805.000   1035.700   9815.000
GR   1035.300   9860.000   1028.000  10000.000   1030.800  10405.000   1041.000  10425.000   1041.000  10460.000

QT      1.000  38480.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
ET     45.500      0.000      7.100      0.000      0.000      0.000   9829.000  10426.000      0.000      0.000
          AP PLAN STA.46+00. RT. DIKE FILLS NATURAL RIVER BED.
X1     45.500      5.000   9830.000  10427.000    420.000    360.000    380.000      0.000      0.000      0.000
GR   1039.500   9730.000   1037.500   9830.000   1028.800  10000.000   1030.600  10405.000   1041.600  10427.000

QT      1.000  38860.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
ET     48.800      0.000      7.100      0.000      0.000      0.000   9789.000  10426.000      0.000      0.000
          AP PLAN STA.50+00.
X1     48.800      9.000   9790.000  10425.000    400.000    400.000    400.000      0.000      0.000      0.000
X4      3.000   1038.000   9790.000   1038.000   9690.000   1037.000   9840.000      0.000      0.000      0.000
GR   1039.200   9670.000   1033.000   9870.000   1033.000   9921.000   1031.500   9940.000   1031.500   9970.000
GR   1029.600  10000.000   1032.400  10405.000   1042.600  10425.000   1042.600  10465.000      0.000      0.000

QT      1.000  39000.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
ET     54.000      0.000      7.100      0.000      0.000      0.000   9599.000  10426.000      0.000      0.000
          AP PLAN STA.54+00.EQUIV. X-55 ON NATURAL RIVER BED PROJ.DECK
X1     54.000     10.000   9600.000  10425.000    400.000    400.000    400.000      0.000      0.000      0.000
X4      3.000   1040.000   9640.000   1044.000   9620.000   1044.000   9620.000      0.000      0.000      0.000
GR   1044.500   9600.000   1035.000   9645.000   1031.000   9660.000   1027.500   9725.000   1029.500   9830.000
GR   1029.000   9880.000   1030.400  10000.000   1033.100  10405.000   1043.400  10425.000   1043.400  10465.000

ET     55.730      0.000      7.100      0.000      0.000      0.000   9399.000  10426.000      0.000      0.000
          AP PLAN STA.58+00.APPROX PROJ DECK STA.X-57.
X1     55.730     13.000   9400.000  10425.000    400.000    400.000    400.000      0.000      0.000      0.000
GR   1049.000   9400.000   1040.000   9454.000   1030.000   9529.000   1030.000   9590.000   1030.000   9650.000
GR   1032.500   9700.000   1032.000   9750.000   1035.000   9870.000   1035.000   9925.000   1031.200  10000.000
GR   1033.900  10405.000   1044.200  10425.000   1044.200  10465.000      0.000      0.000      0.000      0.000

ET     62.000      0.000      7.100      0.000      0.000      0.000   9515.000  10426.000      0.000      0.000
          AP PLAN STA. 62+00.
X1     62.000     12.000   9516.000  10425.000    400.000    400.000    400.000      0.000      0.000      0.000
GR   1043.000   9516.000   1040.000   9545.000   1035.000   9600.000   1030.000   9640.000   1030.000   9675.000
GR   1032.000   9825.000   1032.000   9910.000   1033.000   9970.000   1032.000  10000.000   1035.700  10405.000
GR   1045.000  10425.000   1045.000  10465.000      0.000      0.000      0.000      0.000      0.000      0.000
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ET      56.000      0.000      7.100      0.000      0.000      0.000   9734.000  10426.000      0.000      0.000
          AP PLAN STA.56+00.
X1      56.000     10.000   9735.000  10425.000    400.000    400.000    400.000      0.000      0.000      0.000
GR    1043.500   9500.000   1040.000   9532.000   1039.000   9650.000   1039.000   9735.000   1035.000   9800.000
GR    1034.000   9900.000   1034.000   9970.000   1032.800  10000.000   1035.500  10405.000   1045.800  10425.000

ET      70.000      0.000      7.100      0.000      0.000      0.000   9974.000  10431.000      0.000      0.000
          AP PLAN STA.70+00. APPROX PROJ.DECK X-75.
X1      70.000     12.000   9975.000  10430.000    375.000    375.000    375.000      0.000      0.000      0.000
GR    1043.000   9685.000   1043.000   9720.000   1040.000   9740.000   1041.000   9825.000   1041.000   9875.000
GR    1039.000   9940.000   1039.000   9975.000   1035.500  10000.000   1033.600  10230.000   1034.800  10405.000
GR    1047.500  10430.000   1047.500  10465.000      0.000      0.000      0.000      0.000      0.000      0.000

ET      72.000      0.000      7.100      0.000      0.000      0.000   9929.000  10429.000      0.000      0.000
          AP PLAN STA.72+00.LAST X-SECT GIVEN. END AP CHANNEL AT STA.74+16.
X1      72.000     15.000   9930.000  10428.000    190.000    190.000    190.000      0.000      0.000      0.000
GR    1044.000   9760.000   1041.000   9795.000   1041.000   9850.000   1042.000   9900.000   1042.000   9930.000
GR    1039.000   9950.000   1039.000   9980.000   1036.000  10005.000   1037.000  10030.000   1037.000  10055.000
GR    1036.000  10060.000   1036.000  10080.000   1037.000  10110.000   1034.200  10400.000   1048.500  10428.000

ET      77.000      0.000      7.100      0.000      0.000      0.000   9759.000  10256.000      0.000      0.000
          PROJECT DECK STARTS X-77. AP PLAN STA.74+16 AT 107TH AVE. NORTH SIDE
          PROJECT X-77 USED AS NATURAL RIVER BED.
X1      77.000     37.000   9760.000  10255.000    480.000    680.000    650.000      0.000      0.000      0.000
X3      11.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
GR    1052.000   7105.000   1050.000   7110.000   1048.400   7205.000   1048.000   7500.000   1047.000   8115.000
GR    1047.300   8410.000   1047.200   8760.000   1046.000   9080.000   1045.700   9225.000   1045.500   9390.000
GR    1044.800   9580.000   1044.000   9680.000   1044.000   9735.000   1048.000   9745.000   1050.000   9755.000
GR    1050.000   9760.000   1050.000   9770.000   1048.000   9775.000   1046.000   9785.000   1044.000   9800.000
GR    1042.000   9880.000   1040.000   9910.000   1038.000   9920.000   1037.700  10000.000   1036.000  10055.000
GR    1036.000  10095.000   1038.000  10115.000   1040.000  10120.000   1042.000  10130.000   1044.000  10140.000
GR    1044.000  10175.000   1046.000  10185.000   1046.000  10230.000   1047.300  10255.000   1048.000  10270.000
GR    1050.000  10280.000   1052.000  10295.000      0.000      0.000      0.000      0.000      0.000      0.000

ET      84.000      0.000      7.100      0.000      0.000      0.000   9844.000  10401.000      0.000      0.000
X1      84.000     40.000   9845.000  10400.000    620.000    700.000    700.000      0.000      0.000      0.000
X3      11.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
GR    1054.000   7475.000   1052.000   7490.000   1052.000   7520.000   1052.000   7545.000   1051.000   7570.000
GR    1050.000   7795.000   1048.500   7970.000   1048.400   8210.000   1048.200   8500.000   1048.200   8820.000
GR    1050.000   8950.000   1048.700   9320.000   1048.000   9480.000   1047.500   9630.000   1046.000   9740.000
GR    1046.000   9815.000   1052.000   9840.000   1053.500   9845.000   1052.000   9855.000   1046.000   9875.000
GR    1044.000   9880.000   1042.000   9905.000   1036.000   9915.000   1035.700   9970.000   1036.000   9990.000
GR    1038.000  10025.000   1038.000  10045.000   1040.000  10115.000   1042.000  10160.000   1042.000  10215.000
GR    1040.000  10230.000   1040.000  10360.000   1042.000  10370.000   1044.400  10400.000   1042.000  10415.000
GR    1042.000  10490.000   1044.000  10570.000   1048.000  10610.000   1050.000  10615.000   1050.000  10790.000

ET      88.700      0.000      7.100      0.000      0.000      0.000   9723.000  10301.000      0.000      0.000
          GRAVEL PIT, LOB BREAKOUT TO X95.5. D/S B.O. LIMITED IN Q TO X77
X1      88.700     47.000   9730.000  10300.000    520.000    450.000    470.000      0.000      0.000      0.000
X3       0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
GR    1054.000   6520.000   1052.000   6550.000   1052.000   6580.000   1052.000   7170.000   1052.000   7440.000
GR    1052.000   8650.000   1050.400   8770.000   1050.200   8910.000   1050.200   9080.000   1050.100   9250.000
GR    1050.000   9630.000   1050.000   9725.000   1052.000   9730.000   1050.000   9735.000   1036.000   9760.000
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GR	1035.700	9765.000	1036.000	9770.000	1042.000	9810.000	1042.000	9910.000	1034.000	9938.000
GR	1035.000	9930.000	1039.000	10000.000	1036.000	10030.000	1034.000	10100.000	1034.000	10170.000
GR	1044.000	10220.000	1044.000	10220.000	1045.600	10300.000	1046.000	10310.000	1046.000	10360.000
GR	1048.000	10430.000	1050.000	10455.000	1052.000	10500.000	1052.000	10530.000	1050.000	10560.000
GR	1050.000	10610.000	1052.000	10615.000	1052.000	10650.000	1050.000	10700.000	1052.000	10710.000
GR	1052.000	10760.000	1050.000	10765.000	1050.000	10830.000	1050.900	10850.000	1051.100	10950.000
GR	1052.000	10980.000	1058.000	11030.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	95.500	0.000	7.100	0.000	0.000	0.000	9499.000	10306.000	0.000	0.000
	GRAVEL PIT, LOB BREAKOUT TO X38.7.									
X1	95.500	40.000	9500.000	10305.000	400.000	680.000	680.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1056.000	6420.000	1055.800	6575.000	1055.000	7030.000	1053.300	7530.000	1053.300	7540.000
GR	1052.000	7550.000	1052.000	7610.000	1052.000	7615.000	1052.000	8270.000	1052.000	8610.000
GR	1052.000	8855.000	1052.000	9140.000	1053.600	9340.000	1052.000	9470.000	1052.000	9500.000
GR	1050.000	9535.000	1050.000	9840.000	1048.000	9845.000	1046.000	9850.000	1044.000	9898.000
GR	1042.000	9905.000	1040.000	9915.000	1037.300	9960.000	1036.000	10000.000	1036.000	10085.000
GR	1034.000	10120.000	1034.000	10240.000	1036.000	10250.000	1038.000	10260.000	1038.000	10280.000
GR	1052.000	10305.000	1050.000	10310.000	1050.000	10330.000	1052.000	10420.000	1050.700	10580.000
GR	1051.000	10880.000	1052.000	10975.000	1052.100	11070.000	1054.000	11280.000	1064.000	11400.000
ET	100.700	0.000	7.100	0.000	0.000	0.000	9629.000	10191.000	0.000	0.000
X1	100.700	48.000	9630.000	10190.000	550.000	620.000	520.000	0.000	0.000	0.000
GR	1056.000	7400.000	1055.100	7450.000	1070.000	7451.000	1070.000	7600.000	1056.000	7601.000
GR	1055.000	7730.000	1070.000	7731.000	1070.000	8010.000	1054.500	8020.000	1054.300	8110.000
GR	1070.000	8111.000	1070.000	8139.000	1054.200	8140.000	1054.200	8210.000	1054.100	8458.000
GR	1054.200	8600.000	1054.100	8740.000	1053.600	9180.000	1054.000	9300.000	1054.500	9450.000
GR	1054.000	9570.000	1054.000	9600.000	1055.000	9630.000	1054.000	9645.000	1052.000	9670.000
GR	1051.000	9720.000	1052.000	9820.000	1052.000	9863.000	1050.000	9890.000	1042.000	9900.000
GR	1042.000	9960.000	1040.000	9970.000	1036.000	9981.000	1036.000	10070.000	1034.700	10100.000
GR	1036.000	10120.000	1038.000	10130.000	1040.000	10155.000	1052.000	10190.000	1052.000	10240.000
GR	1053.000	10270.000	1052.000	10300.000	1052.000	10380.000	1052.200	10430.000	1053.300	10570.000
GR	1053.700	10880.000	1054.000	11140.000	1062.000	11200.000	0.000	0.000	0.000	0.000
ET	107.000	0.000	7.100	0.000	0.000	0.000	9709.000	10256.000	0.000	0.000
X1	107.000	48.000	9710.000	10255.000	300.000	640.000	630.000	0.000	0.000	0.000
GR	1058.900	7275.000	1058.700	7480.000	1058.200	7715.000	1058.000	7750.000	1056.000	7810.000
GR	1070.000	7811.000	1070.000	7920.000	1055.300	7921.000	1055.100	8025.000	1055.000	8120.000
GR	1070.000	8121.000	1070.000	8194.000	1055.500	8195.000	1055.200	8330.000	1070.000	8331.000
GR	1070.000	8389.000	1055.300	8390.000	1055.100	8580.000	1054.200	8630.000	1054.400	8835.300
GR	1054.500	9105.000	1054.800	9370.000	1056.000	9490.000	1056.000	9620.000	1056.000	9710.000
GR	1052.300	9735.000	1040.000	9750.000	1039.500	9753.000	1040.000	9770.000	1040.000	9830.000
GR	1038.000	9835.000	1038.000	9960.000	1040.000	9985.000	1040.000	10110.000	1042.000	10138.000
GR	1042.000	10180.000	1045.000	10190.000	1045.000	10240.000	1054.000	10255.000	1055.000	10368.000
GR	1055.700	10460.000	1055.700	10550.000	1056.000	10735.000	1057.000	10740.000	1056.100	10755.000
GR	1056.200	10870.000	1056.000	10980.000	1060.000	11010.000	0.000	0.000	0.000	0.000
NC	0.045	0.045	0.035	0.300	0.500	0.000	0.000	0.000	0.000	0.000
ET	110.700	0.000	7.100	0.000	0.000	0.000	9734.000	10236.000	0.000	0.000
X1	110.700	42.000	9735.000	10235.000	600.000	300.000	370.000	0.000	0.000	0.000
GR	1060.000	7845.000	1060.000	7846.000	1058.000	7852.000	1058.000	7854.000	1057.700	8080.000
GR	1058.000	8145.000	1058.000	8150.000	1058.000	8200.000	1057.100	8540.000	1057.400	8810.000
GR	1056.600	8950.000	1056.100	9075.000	1056.000	9100.000	1055.600	9320.000	1055.400	9430.000
GR	1056.000	9495.000	1056.700	9525.000	1056.000	9540.000	1054.000	9545.000	1054.000	9690.000

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GR   1055.600   9735.000   1054.000   9770.000   1042.000   9790.000   1041.300   9820.000   1042.000   9870.000
GR   1046.000   9880.000   1048.000   9910.000   1049.000  10000.000   1043.000  10120.000   1048.000  10160.000
GR   1046.800  10190.000   1048.000  10215.000   1056.000  10235.000   1054.000  10250.000   1054.000  10340.000
GR   1056.000  10345.000   1056.700  10500.000   1056.000  10590.000   1055.800  10670.000   1056.000  10770.000
GR   1058.000  10810.000   1060.000  10830.000      0.000      0.000      0.000      0.000      0.000      0.000

ET    117.200      0.000      7.100      0.000      0.000      0.000   9844.000  10196.000      0.000      0.000
        DOWNSTREAM SIDE GLENDALE AVE BRIDGE
        BRIDGE FOOTING NEARLY EXPOSED ON GLENDALE BRIDGE
X1    117.200     33.000   9845.000  10195.000    800.000    400.000    650.000      0.000      0.000      0.000
X3     10.000      0.000      0.000      0.000      0.000      0.000      0.000   1061.000   1061.000      0.000
GR   1056.000   7075.000   1064.000   7120.000   1062.000   8020.000   1060.000   8035.000   1060.000   8037.000
GR   1059.800   8280.000   1060.000   8340.000   1060.000   8360.000   1060.000   8380.000   1058.500   8500.000
GR   1058.700   8630.000   1057.900   8780.000   1057.900   9100.000   1058.400   9330.000   1058.000   9550.000
GR   1058.000   9730.000   1056.000   9845.000   1054.000   9855.000   1052.000   9885.000   1050.000   9910.000
GR   1048.000   9970.000   1046.200  10030.000   1046.200  10120.000   1048.000  10165.000   1056.000  10195.000
GR   1057.000  10260.000   1057.500  10460.000   1056.000  10550.000   1056.000  10940.000   1056.000  11415.000
GR   1058.000  11555.000   1060.000  11620.000   1062.000  11685.000      0.000      0.000      0.000      0.000

SB     0.900      1.560      2.900      0.000    352.000     19.800   5503.000      0.000   1046.500   1046.200
ET   118.000      0.000      7.110      0.000      0.000      0.000   9844.000  10196.000      0.000      0.000
        UPSTREAM SIDE GLENDALE AVE BRIDGE-PERCHED. 2FT DEBRIS PER PIER.
        1983 TOPO WITHIN 0.3FT OF BRIDGE PLAN DECK.USED PLANS MINUS 0.3FT
X1   118.000     33.000   9845.000  10195.000     52.000     52.000     52.000      0.000      0.000      0.000
X2     0.000      0.000      1.000   1063.100   1063.000      0.000      0.000      0.000      0.000      0.000
X3    11.000      0.000      0.000      0.000      0.000      0.000      0.000   1063.510   1063.000      0.000
BT   -18.000   8080.000   1064.500      0.000   8140.000   1063.900      0.000   8420.000   1063.600      0.000
BT     0.000   8720.000   1063.500      0.000   9000.000   1063.500      0.000   9230.000   1063.600      0.000
BT     0.000   9650.000   1064.000      0.000   9700.000   1064.500      0.000   9844.000   1066.100      0.000
BT     1.000   9845.000   1068.600   1063.100  10195.000   1068.600   1063.100  10196.000   1066.100      0.000
BT     0.000  10370.000   1064.000      0.000  10600.000   1063.300      0.000  11150.000   1063.000      0.000
BT     0.000  11195.000   1063.400      0.000  11480.000   1063.600      0.000  11515.000   1064.000      0.000
GR   1056.000   7865.000   1066.000   7866.000   1065.000   8030.000   1065.000   8031.000   1065.000   8032.000
GR   1054.000   8130.000   1062.900   8250.000   1062.000   8320.000   1060.100   8515.000   1060.000   9170.000
GR   1059.000   9290.000   1060.000   9710.000   1060.000   9835.000   1058.000   9845.000   1056.000   9860.000
GR   1050.000   9895.000   1048.000   9920.000   1047.500  10020.000   1048.000  10130.000   1050.000  10160.000
GR   1052.000  10175.000   1058.000  10195.000   1058.000  10210.000   1060.000  10220.000   1058.000  10730.000
GR   1057.400  11030.000   1057.400  11190.000   1058.000  11330.000   1060.000  11400.000   1062.000  11403.000
GR   1064.000  11415.000   1064.000  11450.000   1066.000  11485.000      0.000      0.000      0.000      0.000
EJ     0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       LEFT/RIGHT
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*SECNO 12.500
3280 CROSS SECTION      12.50 EXTENDED      3.44 FEET

3470 ENCROACHMENT STATIONS=     9939.0    10416.0   TYPE=      1  TARGET=      477.000.
        AP PLAN STA.14+77 CROSS SECTION.
   12.50      10.44   1032.94   1030.29      0.00   1034.37      1.43      1.13      0.07   1029.00.
   39000.         6.    38985.        9.        4.     4063.        5.      343.       78.   1027.60
    0.06       1.55      9.59      1.60     0.045     0.035     0.045     0.000   1022.50.   9939.00
0.002952       250.      250.      250.         2         8         0      0.00    477.00  10416.00

FLOW DISTRIBUTION FOR SECNO=      12.50          CWSEL=    1032.94

STA=     9939.     9940.    10415.    10416.
  PER Q=       0.0     101.0       0.0
   AREA=       3.9    4063.4       5.3
    VEL=       1.5       9.6       1.6

CCHV=    3.100 CEHV=    0.300
*SECNO 13.730
3280 CROSS SECTION      13.73 EXTENDED      5.70 FEET

3470 ENCROACHMENT STATIONS=     9929.0    10417.0   TYPE=      1  TARGET=      488.000.
        AP PLAN STA.16+00. STATION ADJUSTED TO CONFORM TO PLAN PLOT.
   13.73      10.70   1033.50   1030.22      0.00   1034.71      1.21      0.32      0.02   1029.80.
   39000.         5.    38989.        6.        4.     4417.        4.      355.       79.   1029.50
    0.06       1.35      8.83      1.32     0.045     0.035     0.045     0.000   1022.80.   9929.00.
0.003229..     123.      123.      123.         2        19         0      0.00    488.00  10417.00

FLOW DISTRIBUTION FOR SECNO=      13.73          CWSEL=    1033.50

STA=     9929.     9930.    10416.    10417.
  PER Q=       0.0     101.0       0.0
   AREA=       3.7    4415.7       4.2
    VEL=       1.3       3.8       1.3

*SECNO 15.730
3280 CROSS SECTION      15.73 EXTENDED      4.66 FEET
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       LEFT/RIGHT
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

3470 ENCROACHMENT STATIONS=     9889.0    10416.0   TYPE=     1   TARGET=     527.000
                AP PLAN STA.18+00.
    15.73     10.96   1034.16   1030.28      0.00   1035.13      0.97      0.40      0.02   1030.00
    39000.       5.     38988.       7.        4.     4942.        6.      377.       81.   1028.20
      0.07      1.19       7.89      1.24     0.045     0.035     0.045     0.000   1023.20   9889.00
 0.001741      200.       200.      200.         2        14         0      0.00    527.00  10416.00

FLOW DISTRIBUTION FOR SECNO=      15.73          CWSEL=    1034.16

STA=     9889.     9890.    10415.    10416.
  PER Q=      0.0     100.0       0.0
    AREA=     4.2    4941.8       5.9
     VEL=     1.2       7.9       1.2

*SECNO 19.730
3280 CROSS SECTION      19.73 EXTENDED      3.50 FEET

3470 ENCROACHMENT STATIONS=     9879.0    10416.0   TYPE=     1   TARGET=     537.000
                AP PLAN STA.22+00.
    19.73     10.50   1034.50   1030.89      0.00   1035.51      1.00      0.36      0.01   1031.50
    39000.       4.     38989.       7.        3.     4846.        5.      399.       84.   1029.00
      0.07      1.19       3.05      1.29     0.045     0.035     0.045     0.000   1024.00   9879.00
 0.001907      200.       200.      200.         2        14         0      0.00    537.00  10416.00

FLOW DISTRIBUTION FOR SECNO=      19.73          CWSEL=    1034.50

STA=     9879.     9880.    10415.    10416.
  PER Q=      0.0     100.0       0.0
    AREA=     3.0    4845.9       5.5
     VEL=     1.2       3.0       1.3

*SECNO 23.73
3280 CROSS SECTION      23.73 EXTENDED      3.24 FEET

3470 ENCROACHMENT STATIONS=     9884.0    10411.0   TYPE=     1   TARGET=     527.000
                AP PLAN STA.26+00
    23.73     10.45   1035.25   1031.89      0.00   1036.33      1.09      0.80      0.02   1031.00
    39000.       6.     38987.       7.        4.     4663.        5.      443.       89.   1029.80
      0.08      1.32       3.36      1.36     0.045     0.035     0.045     0.000   1024.80   9884.00
 0.002112      400.       400.      400.         1        14         0      0.00    527.00  10411.00
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

FLOW DISTRIBUTION FOR SECNO=      23.73          CWSEL=    1035.25

STA=     9884.     9885.    10410.    10411.
  PER Q=      0.0     101.0       0.0
   AREA=      4.2    4662.9       5.4
    VEL=      1.3       8.4       1.4

*SECNO 29.730
3280 CROSS SECTION      29.73 EXTENDED       1.52 FEET

3470 ENCROACHMENT STATIONS=     9884.0    10411.0   TYPE=      1  TARGET=      527.000
          AP PLAN STA.32+00. LAST RT. BANK STATION-SWITCHES TO DIKE PROTECTION.
     29.73     10.52   1035.52   1033.17      0.00   1037.60      1.09      1.27      0.00   1033.00
    39000.        5.     38988.        7.        4.     4655.        5.      507.       96.   1031.00
      0.11      1.29      8.38      1.36     0.045     0.035     0.045     0.000   1026.00   9884.00
 0.002125       600.      600.      600.         2        19         0      0.00    527.00  10411.00

FLOW DISTRIBUTION FOR SECNO=      29.73          CWSEL=    1036.52

STA=     9884.     9885.    10410.    10411.
  PER Q=      0.0     100.0       0.0
   AREA=      3.5    4651.9       5.5
    VEL=      1.3       8.4       1.4

*SECNO 31.730

3470 ENCROACHMENT STATIONS=     9879.0    10431.0   TYPE=      1  TARGET=      352.000
          AP PLAN STA.34+00. RT. DIKE STARTS STA.32+69.
     31.73     10.55   1036.95   1033.70      0.00   1038.04      1.09      0.43      0.00   1033.00
    39800.        5.     38395.        0.        4.     4658.        0.      529.       98.   1041.00
      0.11      1.34      8.37      0.00     0.045     0.035     0.045     0.000   1026.40   9879.00
 0.002216       200.      200.      200.         1        19         0      0.00    542.48  10421.49

FLOW DISTRIBUTION FOR SECNO=      31.73          CWSEL=    1036.95

STA=     9879.     9880.    10430.
  PER Q=      0.0     101.0
   AREA=      3.9    4658.0
    VEL=      1.3       8.4
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SECNO      DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
Q          QLOB      QCH       QROB      ALCB      ACH       AROB      VOL       TWA     LEFT/RIGHT
TIME       VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
SLOPE      XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

*SECNO 35.730

3470 ENCROACHMENT STATIONS=     9839.0    10428.0   TYPE=      1  TARGET=      589.0.00
              AP PLAN STA.38+00. RT DIKE FILLS NATURAL RIVER BED.
    35.73     10.94   1037.94   1034.31      0.00   1038.86      0.91      0.80      0.02   1034.50
   39000.        4.     38996.        0.        3.     5082.        0.      573.      104.   1041.00
     0.13      1.19      7.67      0.00     0.045     0.035     0.045     0.000   1027.00   9839.00
 0.001822      400.      400.      400.         2        19         0      0.00    582.00  10421.00

FLOW DISTRIBUTION FOR SECNO=      35.73          CWSEL=   1037.94

STA=     9839.     9840.    10427.
  PER Q=       0.0     100.0
    AREA=      3.4    5081.5
     VEL=      1.2       7.7

*SECNO 39.730

3470 ENCROACHMENT STATIONS=     9859.0    10426.0   TYPE=      1  TARGET=      567.000
              AP PLAN STA.42+00. RT DIKE FILLS NATURAL RIVER BED.
    39.73     10.65   1038.65   1035.37      0.00   1039.68      1.03      0.79      0.04   1035.30
   39000.        4.     38996.        0.        3.     4785.        0.      619.      109.   1041.00
     0.14      1.28      1.15      0.00     0.045     0.035     0.045     0.000   1028.00   9859.00
 0.002121      400.      400.      400.         2        14         0      0.00    561.39  10420.39

FLOW DISTRIBUTION FOR SECNO=      39.73          CWSEL=   1038.65

STA=     9859.     9860.    10425.
  PER Q=       0.0     100.0
    AREA=      3.3    4785.2
     VEL=      1.3       8.1

*SECNO 45.500

3470 ENCROACHMENT STATIONS=     9829.0    10428.0   TYPE=      1  TARGET=      599.0.00
              AP PLAN STA.46+00. RT. DIKE FILLS NATURAL RIVER BED.
    45.50     10.74   1039.54   1035.75      0.00   1040.43      0.89      0.74      0.01   1037.50
   39000.        2.     38998.        0.        2.     5153.        0.      662.      114.   1041.60
     0.16      1.07      7.57      0.00     0.045     0.035     0.045     0.000   1028.80   9829.00
 0.001738      420.      380.      360.         2        14         0      0.00    593.88  10422.88
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       IWA    LEFT/RIGHT
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

FLOW DISTRIBUTION FOR SECNO=      45.50          CWSEL=    1039.54

STA=     9829.     9830.    10427.
  PER Q=      0.0     101.0
   AREA=      2.3    5152.5
    VEL=      1.1       7.6

*SECNO 48.800

3470 ENCROACHMENT STATIONS=     9789.0    10426.0   TYPE=      1  TARGET=      637.000.
                AP PLAN STA.50+00.
    48.80     10.69  1041.29  1036.68      0.00  1041.17      0.87      0.73      0.00  1038.00
   39000.        3.    38997.       0.        2.    5205.       0.      710.      119.   1042.60
     0.17      1.12      7.49      0.00     0.045     0.035     0.045     0.000   1029.60   9789.00
 0.001875      400.      400.      400.         2        14         0      0.00    631.48  10420.48

FLOW DISTRIBUTION FOR SECNO=      48.80          CWSEL=    1040.29

STA=     9789.     9790.    10425.
  PER Q=      0.0     101.0
   AREA=      2.3    5205.1
    VEL=      1.1       7.5

*SECNO 54.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     9599.0    10426.0   TYPE=      1  TARGET=      927.000.
                AP PLAN STA.54+00.EQUIV. X-55 ON NATURAL RIVER BED PROJ.DECK
    54.00     13.74  1041.24  1034.92      0.00  1041.59      0.36      0.38      0.05  1044.50
   39000.        0.    39000.       0.        0.    8154.       0.      771.      126.   1043.40
     0.19      0.00      4.78      0.00     0.045     0.035     0.045     0.000   1027.50   9633.81
 0.000556      400.      400.      400.         2        19         0      0.00    797.00  10420.80

FLOW DISTRIBUTION FOR SECNO=      54.00          CWSEL=    1041.24

STA=     9634.    10425.
  PER Q=    100.0
   AREA=   8154.5
    VEL=      4.8
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SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         QLOSS      BANK ELEV
Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        LEFT/RIGHT
TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

*SECNO 55.73

3470 ENCROACHMENT STATIONS=     9399.0    10426.0   TYPE=      1  TARGET=     1027.000
            AP PLAN STA.58+00.APPROX PROJ DECK STA.X-57.
     55.73     11.51   1041.51   1036.22      0.00   1041.84      0.32      0.24      0.00   1049.00
    39000.        0.     39000.        0.        0.     8528.        0.     848.      134.   1044.20
      0.22      0.00       4.57      0.00     0.045     0.035     0.045     0.000   1030.00   9444.91
  0.000636      430.      400.      400.         2        18         0      0.00    974.87  10419.79

FLOW DISTRIBUTION FOR SECNO=      55.73          CWSEL=    1041.51

STA=     9445.    10425.
  PER Q=     100.0
   AREA=    8528.0
    VEL=       4.6

*SECNO 62.000

3470 ENCROACHMENT STATIONS=     9515.0    10426.0   TYPE=      1  TARGET=      911.000
            AP PLAN STA. 62+00.
     62.00     11.75   1041.75   1036.88      0.00   1042.16      0.41      0.30      0.03   1043.00
    39000.        0.     39000.        0.        0.     7548.        0.     921.      143.   1045.00
      0.24      1.00       5.17      0.00     0.045     0.035     0.045     0.000   1030.00   9528.02
  0.000839      400.      400.      400.         0        14         0      0.00    890.00  10418.02

FLOW DISTRIBUTION FOR SECNO=      62.00          CWSEL=    1041.75

STA=     9528.    10425.
  PER Q=     100.0
   AREA=    7548.2
    VEL=       5.2

*SECNO 66.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     9734.0    10426.0   TYPE=      1  TARGET=      692.000
            AP PLAN STA.66+00.
     66.00      9.12   1041.92   1039.12      0.00   1042.84      0.92      0.53      0.15   1039.00
    39000.        4.     38996.        0.        3.     5059.        0.     979.      150.   1045.80
      0.25      1.30       7.71      0.00     0.045     0.035     0.045     0.000   1032.80   9734.00
  0.002298      400.      400.      400.         2        11         0      0.00    683.47  10417.47
```

```
   SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS    BANK ELEV
   Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA    LEFT/RIGHT
   TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN       SSTA
   SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID      ENDST

FLOW DISTRIBUTION FOR SECNO=      66.00            CWSEL=    1041.92

STA=     9734.     9735.   10425.
  PER Q=      0.0     101.0
   AREA=      2.9    5059.1
    VEL=      1.3       7.7

*SECNO 70.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     9974.0    10431.0   TYPE=      1  TARGET=      457.000
              AP PLAN STA.70+00. APPROX PROJ.DECK X-75.
    70.00      3.75   1042.35   1040.85      0.00   1044.39      2.04      1.21      0.33   1039.08
    39000.       5.     38994.       0.        3.     3403.        0.     1016.      155.   1047.50
     0.26      1.93     11.46      0.00     0.045      0.35     0.045     0.000   1033.60   9974.00
 0.004864      375.      375.      375.         2        15         0      0.00    445.86  10419.86

FLOW DISTRIBUTION FOR SECNO=      70.00            CWSEL=    1042.35

STA=     9974.     9975.   10430.
  PER Q=      0.0     101.0
   AREA=      3.3    3402.6
    VEL=      1.9      11.5

*SECNO 72.000

3470 ENCROACHMENT STATIONS=     9929.0    10429.0   TYPE=      1  TARGET=      500.000
              AP PLAN STA.72+00.LAST X-SECT GIVEN. END AP CHANNEL AT STA.74+16.
    72.00      3.11   1043.31   1042.20      0.00   1045.40      2.09      1.00      0.01   1042.00
    39000.       2.     38998.       0.        1.     3364.        0.     1031.      157.   1048.50
     0.27      1.71     11.59      0.00     0.045      0.35     0.045     0.000   1034.20   9929.00
 0.005722      190.      190.      190.         2        11         0      0.00    488.85  10417.85

FLOW DISTRIBUTION FOR SECNO=      72.00            CWSEL=    1043.31

STA=     9929.     9930.   10428.
  PER Q=      0.0     101.0
   AREA=      1.3    3364.0
    VEL=      1.7      11.6
```

```
SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      BANK ELEV
Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA    LEFT/RIGHT
TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

*SECNO 77.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     9759.0    10256.0  TYPE=     1  TARGET=     497.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1050.00 ELREA=     1047.30

          PROJECT DECK STARTS X-77. AP PLAN STA.74+16 AT 107TH AVE. NORTH SIDE
      PROJECT X-77 USED AS NATURAL RIVER BED.
    77.00      11.32  1047.32  1046.82      0.00  1049.92      2.60      4.36      0.15  1050.00
    39000.        0.    39000.        0.        0.    3014.        0.     1078.      164.  1047.30
     0.28       0.00     12.94      0.03     0.045     0.035     0.045     0.000  1036.08  9778.40
 0.007980.      480.      650.      680.         2        11         0      0.00   477.04 10255.44

FLOW DISTRIBUTION FOR SECNO=     77.00          CWSEL=    1047.32

STA=    9778.    10255.
  PER Q=     100.0
   AREA=    3014.0
    VEL=      12.9

*SECNO 84.000
3280 CROSS SECTION      34.00 EXTENDED      0.94 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     9844.0    10401.0  TYPE=     1  TARGET=     557.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1053.50 ELREA=     1044.40

    84.00      15.25  1051.95  1045.18      0.00  1051.62      0.67      1.51      0.19  1053.50
    39000.        0.    38994.        6.        0.    5946.        7.     1150.      172.  1044.40
     0.31       0.00      5.56      0.94     0.045     0.035     0.045     0.000  1035.70  9858.52
 0.000985       620.      700.      700.         2        15         0      0.00   542.48 10401.00

FLOW DISTRIBUTION FOR SECNO=     84.00          CWSEL=    1050.95

STA=    9859.    10400.    10401.
  PER Q=     100.0       0.0
   AREA=    5946.2       6.6
    VEL=       6.6       0.9
```

```
   SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         QLOSS    BANK ELEV
   Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA    LEFT/RIGHT
   TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
   SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

*SECNO 88.700

3470 ENCROACHMENT STATIONS=     9729.0    10301.0   TYPE=      1  TARGET=      572.000
      GRAVEL PIT, LOB BREAKOUT TO X95.5, D/S B.O. LIMITED IN Q TO X77
    88.70,     17.53   1051.53   1043.41      0.00   1051.98      0.45       0.34       0.02   1052.00,
   39000.        0.     38996.        4.        0.     7223.        6.      1221.       178.    1045.60
     0.34       0.00      5.40      0.70     0.045     0.035      0.045     0.000   1034.00    9731.16
 0.000535       520.      470.      450.         2        21          0      0.00    569.84   10301.00

FLOW DISTRIBUTION FOR SECNO=      88.70          CWSEL=    1051.53

STA=     9731.    10300.    10301.
  PER Q=     100.0       1.0
   AREA=    7222.5       5.9
    VEL=       5.4       0.7

*SECNO 95.500

3470 ENCROACHMENT STATIONS=     9499.0    10306.0   TYPE=      1  TARGET=      307.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=      1052.00 ELREA=      1052.00

      GRAVEL PIT, LOB BREAKOUT TO X88.7.
    95.50      18.00   1052.00   1042.86      0.00   1052.44      0.44       0.46       0.00   1052.00,
   39000.        0.     39000.        0.        0.     7308.        0.      1335.       189.    1052.00
     0.37       0.00      5.34      0.00     0.045     0.035      0.045     0.000   1034.00    9500.16
 0.000842       400.      680.      680.         1         8          0      0.00    804.83   10304.98

FLOW DISTRIBUTION FOR SECNO=      95.50          CWSEL=    1052.00

STA=     9500.    10305.
  PER Q=     100.0
   AREA=    7307.6
    VEL=       5.3

*SECNO 100.700

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     9629.0    10191.0   TYPE=      1  TARGET=      562.000
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   SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         ML         OLOSS    BANK ELEV
   Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA    LEFT/RIGHT
   TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
   SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

   100.70     17.37   1052.07    1046.79       0.00    1053.54       1.47       0.79       0.31   1055.00
   39000.        0.   39000.        0.          0.       4005.         0.      1402.       197.   1052.00
     0.39       1.00      9.74      0.02       0.045      0.035      0.045      0.000   1034.70   9669.10
 0.003522      550.      521.      620.          2         19          0       0.00    521.90  10191.00

FLOW DISTRIBUTION FOR SECNO=     100.70          CWSEL=    1052.07

STA=     9569.    10190.
  PER Q=     100.0
   AREA=    4004.8
    VEL=       9.7

*SECNO 107.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     9709.0    10256.0   TYPE=      1  TARGET=      547.000
   107.00     15.90   1053.91   1046.01       0.00    1054.39       0.50       0.75       0.10   1056.00
   39000.        0.   39000.        0.          0.       6884.         0.      1481.       204.   1054.00
     0.42       0.00      5.67      0.00       0.045      0.035      0.045      0.000   1038.00   9723.16
 0.000597      300.      630.      640.          2         14          0       0.00    531.67  10254.83

FLOW DISTRIBUTION FOR SECNO=     107.00          CWSEL=    1053.90

STA=     9723.    10255.
  PER Q=     100.0
   AREA=    6884.2
    VEL=       5.7

CCHV=    0.300 CEHV=    0.500
*SECNO 110.700

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     9734.0    10236.0   TYPE=      1  TARGET=      502.000
   110.70     12.01   1053.31   1053.31       0.00    1056.27       2.96       0.56       1.23   1055.60
   39000.        0.   39000.        0.          0.       2827.         0.      1522.       209.   1056.00
     0.42       0.00     13.80      0.00       0.045      0.035      0.045      0.000   1041.30   9771.14
 0.009440      600.      370.      300.          0         19          0       0.00    457.15  10228.29
```

```
   SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      BANK ELEV
   Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA     LEFT/RIGHT
   TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN       SSTA
   SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID      ENDST

FLOW DISTRIBUTION FOR SECNO=     110.70          CWSEL=    1053.31

STA=     9771.    10235.
  PER Q=     100.0
   AREA=    2626.9
    VEL=      13.8

*SECNO 117.200

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     9844.0    10196.0  TYPE=      1  TARGET=      352.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=      1061.00 ELREA=      1061.00

        DOWNSTREAM SIDE GLENDALE AVE BRIDGE
        BRIDGE FOOTING NEARLY EXPOSED ON GLENDALE BRIDGE
   117.20     11.89   1058.09   1055.86      0.00   1060.25      2.15      3.73      0.24   1056.00
   39000.        0.    39000.        0.        0.     3313.        0.     1568.      215.   1056.00
     0.44      0.00     11.77      0.00     0.045     0.035     0.045     0.000   1046.20   9845.00
 0.003862      800.      650.      400.         2        15         0      0.00    350.00  10195.00

FLOW DISTRIBUTION FOR SECNO=     117.20          CWSEL=    1058.09

STA=     9845.    10195.
  PER Q=     100.0
   AREA=    3312.7
    VEL=      11.8

SPECIAL BRIDGE

SB   XK        XKOR       COFQ       RDLEN      BWC        BWP        BAREA      SS         ELCHU      ELCHD
     0.90.      1.56       2.90       0.00     352.00      19.80    5503.00      0.00    1046.50    1046.20

*SECNO 118.000
     3700.    BRIDGE STENCL=    9844.00     STENCR=   10196.00
CLASS A LOW FLOW

3420 BRIDGE W.S.=    1053.21 BRIDGE VELOCITY=,      10.07      CALCULATED CHANNEL AREA=,      3825.
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```
 SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
 Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
 TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
 SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

EGPRS      EGLWC      H3       QWEIR      GLOW      BAREA   TRAPEZOID      ELLC      ELTRD
                                                             AREA
    0.00   1060.87    0.46       0.     39000.     5503.     5515.     1063.10   1063.00

3470 ENCROACHMENT STATIONS=    9844.0   10196.0  TYPE=     1  TARGET=     352.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1063.50 ELREA=     1063.00

        UPSTREAM SIDE GLENDALE AVE BRIDGE-PERCHED. 2FT DEBRIS PER PIER.
        1983 TOPO WITHIN 0.3FT OF BRIDGE PLAN DECK.USED PLANS MINUS 0.3FT
   118.00.    11.06   1058.56      0.00      0.00  1060.87      2.31      0.62      0.00.  1058.00.
   39000.       0.    39000.        0.        0.    3197.        0.      1572.      215.    1058.00.
     0.14     0.00     12.20      0.00     0.045    0.035     0.045     0.000   1047.50   9845.00
 0.004354      52.       52.       52.         0        0.         0      0.00    350.00. 10195.00

FLOW DISTRIBUTION FOR SECNO=    118.00          CWSEL=    1058.56

STA=    9845.    10195.
  PER Q=    100.0
   AREA=   3196.8
    VEL=     12.2
```

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
72.000	375.00	0.00	0.00	1033.60	39000.00	1042.35	1040.85	1044.39	48.64	11.46	3405.90	5592.10
72.100	190.00	0.00	0.00	1034.20	39000.00	1043.31	1042.20	1045.40	57.22	11.59	3365.36	5155.71
77.000	650.00	0.00	0.00	1036.00	39000.00	1047.32	1046.82	1049.92	79.80	12.94	3113.97	4365.93
84.000	700.00	0.00	0.00	1035.70	39000.00	1050.95	1045.18	1051.62	9.85	6.56	5952.78	12423.49
88.700	470.00	0.00	0.00	1034.00	39000.00	1051.53	1043.41	1051.98	5.55	5.40	7228.45	16551.58
95.500	680.00	0.00	0.00	1034.00	39000.00	1052.00	1042.86	1052.44	8.42	5.34	7307.58	13444.81
100.700	520.00	0.00	0.00	1034.70	39000.00	1052.07	1046.79	1053.54	35.22	9.74	4904.92	6571.81
107.000	630.00	0.00	0.00	1038.00	39000.00	1053.90	1046.01	1054.39	5.97	5.67	6884.20	15961.21
* 111.700	370.00	0.00	0.00	1041.30	39000.00	1053.31	1053.31	1056.27	94.40	13.80	2826.87	4014.06
117.200	650.00	0.00	0.00	1046.20	39000.00	1058.09	1055.86	1060.25	38.62	11.77	3312.66	6275.80
118.000	52.00	1053.00	1053.10	1047.50	39000.00	1058.56	0.00	1060.87	43.54	12.20	3196.78	5910.65

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(22)

PAGE

100-YR FLOODWAY W/GLENDA

SUMMARY PRINTOUT TABLE 150

[redacted]	[redacted]	CWSEL	DIFWSP	DIFWSX	DIFKWS	[redacted]	XLCH
501.450	39000.00	1028.21	0.00	0.00	0.00	2800.50	0.00
11.000	39000.00	1031.37	0.00	3.16	0.00	900.00	2000.00
12.500	39000.00	1032.94	0.00	1.57	0.00	477.00	250.00
13.730	39000.00	1033.50	0.00	0.56	0.00	488.00	123.00
15.730	39000.00	1034.16	0.00	0.67	0.00	527.00	200.00
19.730	39000.00	1034.50	0.00	0.34	0.00	537.00	200.00
23.730	39000.00	1035.25	0.00	0.75	0.00	527.00	400.00
29.730	39000.00	1036.52	0.00	1.27	0.00	527.00	600.00
31.730	39000.00	1036.95	0.00	0.43	0.00	542.48	200.00
35.730	39000.00	1037.94	0.00	0.99	0.00	582.00	400.00
39.730	39000.00	1038.65	0.00	0.70	0.00	561.39	400.00
45.500	39000.00	1039.54	0.00	0.89	0.00	593.88	380.00
48.800	39000.00	1040.29	0.00	0.75	0.00	631.48	400.00
54.000	39000.00	1041.24	0.00	0.95	0.00	787.00	400.00
55.730	39000.00	1041.51	0.00	0.28	0.00	974.87	400.00
62.000	39000.00	1041.75	0.00	0.23	0.00	890.00	400.00
65.000	39000.00	1041.92	0.00	0.17	0.00	683.47	400.00
70.000	39000.00	1042.35	0.00	0.43	0.00	445.86	375.00
72.000	39000.00	1043.31	0.00	0.97	0.00	488.85	190.00
77.000	39000.00	1047.32	0.00	4.00	0.00	477.04	650.00
84.000	39000.00	1050.95	0.00	3.64	0.00	542.48	700.00
88.700	39000.00	1051.53	0.00	0.58	0.00	569.84	470.00
95.500	39000.00	1052.00	0.00	0.47	0.00	804.83	680.00
100.700	39000.00	1052.07	0.00	0.07	0.00	521.90	520.00

Data Documents/Inc.

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SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
107.000	39000.00	1053.90	0.00	1.83	0.00	531.67	630.00
* 110.700	39000.00	1053.31	0.00	-0.58	0.00	457.15	370.00
117.200	39000.00	1058.09	0.00	4.78	0.00	350.00	650.00
118.000	39000.00	1058.56	0.00	0.46	0.00	350.00	52.00

COMPUTER PRINTOUT 3

HEC-2 INPUT & OUTPUT DATA

CVL ANALYSIS WITH GMA CHANNELIZATION AS-BUILT SECTIONS

Job #1068-05
CVL #4/22/10

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*****************************************************
*  WATER SURFACE PROFILES                           *
*  VERSION OF NOVEMBER 1976                         *
*  UPDATED MAY 1984                                 *
*                                                   *
*  RUN DATE WED, MAY 28 1986 TIME 14:08:49          *
*****************************************************
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****************************************
*  U.S. ARMY CORPS OF ENGINEERS        *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*  609 SECOND STREET, SUITE D          *
*  DAVIS, CALIFORNIA 95616             *
*  (916) 440-2105 (FTS) 448-2105       *
****************************************
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COMPUTER PRINTOUT 3

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X     X  XXXXXXX   XXXXX              XXXXX
X     X  X         X     X            X     X
X     X  X         X                        X
XXXXXXX  XXXX      X          XXXXX    XXXXX
X     X  X         X                  X
X     X  X         X     X            X
X     X  XXXXXXX   XXXXX              XXXXXXX
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THIS RUN EXECUTED WED, MAY 28 1986 14:08:51

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
*****************************************************


C
T1      NEW RIVER,   BETHANY SITE   1068-05   MAY 1986
T2      NEW RIVER=GLENDALE AIRPORT CHANNELIZATION ASBUILT SECTIONS 55.73 TO 77.
T3      100-YR FLOODWAY W/GLENDALE AIRPORT CHAN.  ASBUILT SECTIONS BY CVL.

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.       3.       0.       0.  0.000750      0.00       0.0       0.  1041.490     0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

    -1.000     0.000    -1.000     0.000     0.000     0.000    -1.000     0.000     0.000    15.000

NC      0.045     0.045     0.035     0.100     0.300     0.000     0.000     0.000     0.000     0.000
GT      3.000 39000.000 39000.000 69000.000     0.000     0.000     0.000     0.000     0.000     0.000
ET     55.730     0.000     7.100     0.000     0.000     0.000  9464.000 10421.000     0.000     0.000
                AP PLAN STA.58+00.  APPROX PROJ DECK STA.X-57.
X1     55.730    26.000  9465.000 10420.000   400.000   400.000     0.000     0.000     0.000     0.000
GR   1045.000  9465.000  1040.000  9515.000  1035.000  9540.000  1031.000  9560.000  1030.000  9628.000
GR   1029.000  9655.000  1030.000  9680.000  1031.000  9688.000  1031.000  9730.000  1032.000  9750.000
GR   1032.000  9762.000  1033.000  9775.000  1034.000  9832.000  1035.000  9901.000  1035.000  9920.000
GR   1034.000  9940.000  1033.000  9960.000  1032.000  9974.000  1031.000  9982.000  1030.000 10000.000
GR   1031.000 10010.000  1032.000 10075.000  1033.000 10278.000  1034.000 10380.000  1035.000 10403.000
GR   1044.700 10420.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

ET     62.000     0.000     7.100     0.000     0.000     0.000  9499.000 10431.000     0.000     0.000
                AP PLAN STA.62+00.
X1     62.000    20.000  9500.000 10430.000   400.000   400.000   400.000     0.000     0.000     0.000
GR   1045.000  9500.000  1040.000  9566.000  1035.000  9606.000  1031.000  9622.000  1030.500  9640.000
GR   1031.000  9670.000  1032.000  9760.000  1032.000  9810.000  1033.000  9820.000  1032.000  9880.000
GR   1033.000  9940.000  1032.600  9955.000  1033.000  9973.000  1032.000  9986.000  1031.700 10000.000
GR   1032.000 10038.000  1033.000 10353.000  1034.000 10412.000  1035.000 10415.000  1045.500 10430.000

ET     66.000     0.000     7.100     0.000     0.000     0.000  9766.000 10445.000     0.000     0.000
                AP PLAN ST.66+00.
X1     66.000    27.000  9767.000 10444.000   400.000   400.000   400.000     0.000     0.000     0.000
GR   1043.600  9482.000  1042.100  9510.000  1039.100  9520.000  1040.600  9560.000  1039.100  9660.000
GR   1037.900  9718.000  1039.900  9742.000  1037.900  9760.000  1039.600  9767.000  1035.100  9831.000
GR   1035.400  9860.000  1035.000  9881.000  1035.600  9906.000  1035.300  9919.000  1033.600  9937.000
GR   1034.700  9975.000  1034.300  9990.000  1032.400 10000.000  1033.800 10011.000  1032.500 10057.000
GR   1033.200 10128.000  1032.700 10141.000  1034.300 10221.000  1035.300 10310.000  1034.800 10377.000
GR   1035.900 10424.000  1045.600 10444.000     0.000     0.000     0.000     0.000     0.000     0.000
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ET      70.000       0.000       7.100       0.000       0.000       0.000    9950.000   10401.000       0.000       0.000
                AP PLAN STA.70+00.
X1      70.000      26.000    9859.000   10400.000     375.000     375.000     375.000       0.000       0.000       0.000
GR    1044.500    9567.000    1042.100    9582.000    1040.700    9612.000    1040.400    9647.000    1044.100    9669.000
GR    1044.000    9688.000    1040.600    9718.000    1041.900    9812.000    1040.900    9838.000    1041.600    9845.000
GR    1040.900    9852.000    1041.400    9859.000    1038.900    9912.000    1037.800    9938.000    1034.400   10000.000
GR    1035.100   10012.000    1033.700   10020.000    1033.700   10034.000    1035.700   10063.000    1035.200   10112.000
GR    1034.100   10164.000    1034.100   10212.000    1033.800   10230.000    1033.800   10312.000    1035.000   10376.000
GR    1046.800   10400.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000

ET      72.000       0.000       7.100       0.000       0.000       0.000    9930.000   10435.000       0.000       0.000
                AP PLAN STA.72+00.LAST X-SECT GIVEN. END AP CHANNEL AT STA.74+16
X1      72.000      25.000    9916.000   10434.000     190.000     190.000     190.000       0.000       0.000       0.000
GR    1045.700    9709.000    1044.900    9728.000    1043.600    9736.000    1046.000    9763.000    1041.900    9776.000
GR    1041.800    9810.000    1043.000    9867.000    1042.400    9874.000    1042.900    9886.000    1042.600    9897.000
GR    1043.100    9916.000    1038.000    9948.000    1038.900    9958.000    1038.200    9982.000    1036.100   10000.000
GR    1037.800   10022.000    1034.800   10036.000    1037.600   10085.000    1037.400   10127.000    1036.600   10148.000
GR    1035.900   10211.000    1035.100   10248.000    1033.700   10348.000    1033.500   10404.000    1047.700   10434.000

ET      77.000       0.000       7.100       0.000       0.000       0.000    9775.000   10286.000       0.000       0.000
                PROJECT DECK STARTS X-77. AP PLAN STA.74+16 AT 107TH AVE. NORTH
                PROJECT X-77 USED AS NATURAL RIVER BED.
X1      77.000      33.000    9884.000   10148.000     480.000     680.000     650.000       0.000       0.000       0.000
GR    1052.000    7105.000    1050.000    7110.000    1048.400    7205.000    1048.000    7500.000    1047.000    8115.000
GR    1047.300    8410.000    1047.200    8760.000    1046.000    9080.000    1045.700    9225.000    1045.500    9390.000
GR    1044.200    9548.000    1044.000    9648.000    1043.700    9748.000    1051.000    9776.000    1044.600    9807.000
GR    1042.300    9858.000    1042.200    9875.000    1043.400    9884.000    1042.300    9891.000    1042.800    9900.000
GR    1035.600    9921.000    1036.300    9956.000    1036.200   10000.000    1035.500   10048.000    1033.600   10078.000
GR    1035.700   10104.000    1044.700   10148.000    1044.500   10165.000    1048.200   10192.000    1046.100   10214.000
GR    1046.700   10236.000    1048.100   10248.000    1050.900   10285.000       0.000       0.000       0.000       0.000

ET      84.000       0.000       7.100       0.000       0.000       0.000    9844.000   10401.000       0.000       0.000
X1      84.000      40.000    9845.000   10400.000     620.000     700.000     700.000       0.000       0.000       0.000
X3      10.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000
GR    1054.000    7475.000    1052.000    7490.000    1052.000    7520.000    1052.000    7545.000    1051.000    7570.000
GR    1050.000    7795.000    1048.500    7970.000    1048.400    8210.000    1048.200    8500.000    1048.200    8820.000
GR    1050.000    8950.000    1048.700    9320.000    1048.000    9480.000    1047.500    9630.000    1046.000    9740.000
GR    1046.000    9815.000    1052.000    9840.000    1053.500    9845.000    1052.000    9855.000    1046.000    9875.000
GR    1044.000    9880.000    1042.000    9905.000    1036.000    9915.000    1035.700    9970.000    1036.000    9990.000
GR    1038.000   10025.000    1038.000   10045.000    1040.000   10115.000    1042.000   10160.000    1042.000   10215.000
GR    1040.000   10230.000    1040.000   10360.000    1042.000   10370.000    1044.400   10400.000    1042.000   10415.000
GR    1042.000   10490.000    1044.000   10570.000    1048.000   10610.000    1050.000   10615.000    1050.000   10790.000

ET      88.700       0.000       7.100       0.000       0.000       0.000    9729.000   10301.000       0.000       0.000
                GRAVEL PIT, LOB BREAKOUT TO X95.5. D/S B.O. LIMITED IN Q TO X77
X1      88.700      47.000    9730.000   10300.000     520.000     450.000     470.000       0.000       0.000       0.000
X3       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000
GR    1054.000    6520.000    1052.000    6550.000    1052.000    6580.000    1052.000    7170.000    1052.000    7440.000
GR    1052.000    8650.000    1050.400    8770.000    1050.200    8910.000    1050.200    9080.000    1050.100    9250.000
GR    1050.000    9630.000    1050.000    9725.000    1052.000    9730.000    1050.000    9735.000    1036.000    9760.000
GR    1035.700    9765.000    1036.000    9770.000    1042.000    9810.000    1042.000    9910.000    1034.000    9930.000
GR    1036.000    9990.000    1038.000   10000.000    1036.000   10030.000    1034.000   10100.000    1034.000   10170.000
GR    1044.000   10220.000    1044.000   10220.000    1045.600   10300.000    1046.000   10310.000    1046.000   10360.000
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GR   1048.000  10430.000   1050.000   10455.000   1052.000   10500.000   1052.000   10530.000   1050.000   10560.000
GR   1050.000  10610.000   1052.000   10615.000   1052.000   10650.000   1050.000   10700.000   1052.000   10710.000
GR   1052.000  10760.000   1050.000   10765.000   1050.000   10830.000   1050.900   10850.000   1051.100   10950.000
GR   1052.000  10980.000   1058.000   11030.000      0.000       0.000      0.000       0.000      0.000       0.000

ET     95.500      0.000      7.100       0.000      0.000       0.000   9495.000   10306.000      0.000       0.000
                GRAVEL PIT, LOB BREAKCUT TO X88.7.
X1     95.500     40.000   9500.000   10305.000    400.000     680.000    680.000       0.000      0.000       0.000
X3     10.000      0.000      0.000       0.000      0.000       0.000      0.000       0.000      0.000       0.000
GR   1056.000   6420.000   1055.800    6575.000   1055.000    7030.000   1053.300    7530.000   1053.300    7540.000
GR   1052.000   7550.000   1052.000    7610.000   1052.000    7615.000   1052.000    8270.000   1052.000    8610.000
GR   1052.000   8855.000   1052.000    9140.000   1053.600    9340.000   1052.000    9470.000   1052.000    9500.000
GR   1050.000   9535.000   1050.000    9840.000   1048.000    9845.000   1046.000    9850.000   1044.000    9890.000
GR   1042.000   9905.000   1040.000    9915.000   1037.300    9960.000   1036.000   10000.000   1036.000   10085.000
GR   1034.000  10120.000   1034.000   10240.000   1036.000   10250.000   1038.000   10260.000   1038.000   10280.000
GR   1052.000  10305.000   1050.000   10310.000   1050.000   10330.000   1052.000   10420.000   1050.700   10580.000
GR   1051.000  10880.000   1052.000   10975.000   1052.100   11070.000   1054.000   11280.000   1064.000   11408.000

ET    100.700      0.000      7.100       0.000      0.000       0.000   9629.000   10191.000      0.000       0.000
X1    100.700     48.000   9630.000   10190.000    550.000     620.000    520.000       0.000      0.000       0.000
GR   1056.000   7400.000   1055.100    7450.000   1070.000    7451.000   1070.000    7600.000   1056.000    7601.000
GR   1055.000   7730.000   1070.000    7731.000   1070.000    8019.000   1054.500    8020.000   1054.300    8110.000
GR   1070.000   8111.000   1070.000    8139.000   1054.200    8140.000   1054.200    8210.000   1054.100    8450.000
GR   1054.200   8600.000   1054.100    8740.000   1053.600    9180.000   1054.000    9300.000   1054.500    9450.000
GR   1054.000   9570.000   1054.000    9600.000   1055.000    9630.000   1054.000    9645.000   1052.000    9670.000
GR   1051.000   9720.000   1052.000    9820.000   1052.000    9865.000   1050.000    9890.000   1042.000    9900.000
GR   1042.000   9960.000   1040.000    9970.000   1036.000    9980.000   1036.000   10070.000   1034.700   10100.000
GR   1036.000  10120.000   1038.000   10130.000   1040.000   10155.000   1052.000   10190.000   1052.000   10240.000
GR   1053.000  10270.000   1052.000   10300.000   1052.000   10380.000   1052.200   10430.000   1053.300   10570.000
GR   1053.700  10880.000   1054.000   11140.000   1062.000   11200.000      0.000       0.000      0.000       0.000

ET    107.000      0.000      7.100       0.000      0.000       0.000   9709.000   10256.000      0.000       0.000
X1    107.000     48.000   9710.000   10255.000    300.000     640.000    630.000       0.000      0.000       0.000
GR   1058.900   7275.000   1058.700    7480.000   1058.200    7715.000   1058.000    7750.000   1056.000    7810.000
GR   1070.000   7811.000   1070.000    7920.000   1055.300    7921.000   1055.100    8025.000   1055.000    8120.000
GR   1070.000   8121.000   1070.000    8194.000   1055.500    8195.000   1055.200    8330.000   1070.000    8331.000
GR   1070.000   8389.000   1055.300    8390.000   1055.100    8580.000   1054.200    8630.000   1054.400    8835.000
GR   1054.500   9105.000   1054.800    9370.000   1056.000    9490.000   1056.000    9620.000   1056.000    9710.000
GR   1052.000   9735.000   1040.000    9750.000   1039.500    9755.000   1040.000    9770.000   1040.000    9830.000
GR   1038.000   9835.000   1038.000    9960.000   1040.000    9985.000   1040.000   10110.000   1042.000   10130.000
GR   1042.000  10180.000   1045.000   10190.000   1045.000   10240.000   1054.000   10255.000   1055.000   10365.000
GR   1055.700  10460.000   1055.700   10550.000   1056.000   10735.000   1057.000   10740.000   1056.100   10755.000
GR   1056.200  10870.000   1056.000   10980.000   1060.000   11010.000      0.000       0.000      0.000       0.000

NC     0.045      0.045      0.035       0.300      0.500       0.000      0.000       0.000      0.000       0.000
ET    110.700      0.000      7.100       0.000      0.000       0.000   9734.000   10236.000      0.000       0.000
X1    110.700     42.000   9735.000   10235.000    600.000     300.000    370.000       0.000      0.000       0.000
GR   1060.000   7845.000   1060.000    7846.000   1058.000    7852.000   1058.000    7854.000   1057.700    8000.000
GR   1058.000   8145.000   1058.000    8150.000   1058.000    8200.000   1057.100    8540.000   1057.400    8810.000
GR   1056.600   8950.000   1056.100    9075.000   1056.000    9100.000   1055.600    9320.000   1055.400    9430.000
GR   1056.000   9495.000   1056.700    9525.000   1056.000    9540.000   1054.000    9545.000   1054.000    9690.000
GR   1055.600   9735.000   1054.000    9770.000   1042.000    9790.000   1041.300    9820.000   1042.000    9870.000
GR   1046.000   9880.000   1048.000    9910.000   1049.000   10000.000   1049.000   10120.000   1048.000   10160.000
GR   1046.800  10190.000   1048.000   10215.000   1056.000   10235.000   1054.000   10250.000   1054.000   10340.000
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GR    1056.000  10345.000   1056.700  10500.000   1056.000  10590.000   1055.800  10670.000   1056.000  10770.000
GR    1058.000  10810.000   1060.000  10830.000      0.000      0.000      0.000      0.000      0.000      0.000

ET     117.200      0.000      7.100      0.000      0.000      0.000   9844.000  10196.000      0.000      0.000
                DOWNSTREAM SIDE GLENDALE AVE BRIDGE
                BRIDGE FOOTING NEARLY EXPOSED ON GLENDALE BRIDGE
X1     117.200     33.000   9845.000  10195.000    800.000    400.000    650.000      0.000      0.000      0.000
X3      10.000      0.000      0.000      0.000      0.000      0.000      0.000   1061.000   1061.000      0.000
GR    1066.000   7075.000   1064.000   7120.000   1062.000   8020.000   1060.000   8035.000   1060.000   8037.000
GR    1059.800   8280.000   1060.000   8340.000   1060.000   8360.000   1060.000   8380.000   1058.500   8500.000
GR    1058.700   8630.000   1057.900   8780.000   1057.900   9100.000   1058.400   9330.000   1058.000   9550.000
GR    1058.000   9730.000   1056.000   9845.000   1054.000   9855.000   1052.000   9885.000   1050.000   9910.000
GR    1048.000   9970.000   1046.200  10030.000   1046.200  10120.000   1048.000  10165.000   1056.000  10195.000
GR    1057.000  10260.000   1057.500  10460.000   1056.000  10550.000   1056.000  10940.000   1056.000  11415.000
GR    1058.000  11555.000   1060.000  11620.000   1062.000  11685.000      0.000      0.000      0.000      0.000

SB       0.900      1.560      2.900      0.000    352.000     19.800   5503.000      0.000   1046.500   1046.200
ET     118.000      0.000      7.110      0.000      0.000      0.000   9844.000  10196.000      0.000      0.000
                UPSTREAM SIDE GLENDALE AVE BRIDGE-PERCHED. 2FT DEBRIS FER PIER.
                1983 TOPO WITHIN 0.3FT OF BRIDGE LAN DECK.USED PLANS MINUS 0.3FT
X1     118.000     33.000   9845.000  10195.000     52.000     52.000     52.000      0.000      0.000      0.000
X2       0.000      0.000      1.000   1063.100   1063.000      0.000      0.000      0.000      0.000      0.000
X3      10.000      0.000      0.000      0.000      0.000      0.000      0.000   1063.500   1063.000      0.000
ET     -18.000   8080.000   1064.500      0.000   8140.000   1063.900      0.000   8420.000   1063.600      0.000
BT       0.000   8720.000   1063.500      0.000   9000.000   1063.500      0.000   9230.000   1063.600      0.000
BT       0.000   9650.000   1064.000      0.000   9700.000   1064.500      0.000   9844.000   1066.100      0.000
ET       0.000   9845.000   1068.600   1063.100  10195.000   1068.600   1063.100  10196.000   1066.100      0.000
ET       0.000  10370.000   1064.000      0.000  10600.000   1063.300      0.000  11150.000   1063.000      0.000
BT       0.000  11195.000   1063.400      0.000  11480.000   1063.600      0.000  11515.000   1064.000      0.000
GR    1066.000   7865.000   1066.000   7866.000   1065.000   8030.000   1065.000   8031.000   1065.000   8032.000
GR    1064.000   8190.000   1062.900   8250.000   1062.000   8320.000   1060.100   8515.000   1060.000   9170.000
GR    1059.000   9290.000   1060.000   9710.000   1060.000   9835.000   1058.000   9845.000   1056.000   9860.000
GR    1050.000   9895.000   1048.000   9920.000   1047.500  10020.000   1048.000  10130.000   1050.000  10160.000
GR    1052.000  10175.000   1058.000  10195.000   1058.000  10210.000   1060.000  10220.000   1058.000  10730.000
GR    1057.400  11030.000   1057.400  11190.000   1058.000  11330.000   1060.000  11400.000   1062.000  11403.000
GR    1064.000  11415.000   1064.000  11450.000   1066.000  11485.000      0.000      0.000      0.000      0.000
EJ       0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 *PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV=   0.100 CEHV=   0.300
*SECNO 55.730
3710 WSEL ASSUMED BASED ON MIN DIFF

3470 ENCROACHMENT STATIONS=    9464.0   10421.0  TYPE=     1  TARGET=     957.000
                AP PLAN STA.58+00.  APPROX PROJ DECK STA.X-57.
    55.73     12.49  1041.49  1036.36     0.00  1041.86     0.37     0.00     0.00  1045.00
   39000.        0.   39000.       0.        0.    7972.       0.       0.       0.   1044.70
     0.00      0.00     4.89     0.00     0.000    0.035    0.000    0.000  1029.00  9500.10
 0.000743      400.     400.     400.         0       13        0     0.00   914.27 10414.37


FLOW DISTRIBUTION FOR SECNO=     55.73          CWSEL=   1041.49

STA=    9500.   10420.
  PER Q=    100.0
   AREA=   7971.6
    VEL=      4.9

*SECNO 62.000
3710 WSEL ASSUMED BASED ON MIN DIFF

3470 ENCROACHMENT STATIONS=    9499.0   10431.0  TYPE=     1  TARGET=     932.000
                AP PLAN STA.62+00.
    62.00     11.28  1041.78  1036.46     0.00  1042.16     0.38     0.30     0.00  1045.00
   39000.        0.   39000.       0.        0.    7889.       0.       73.      8.   1045.50
     0.02      0.00     4.94     0.00     0.000    0.035    0.000    0.000  1030.50  9542.41
 0.000734      400.     400.     400.         0       14        0     0.00   882.29 10424.70


FLOW DISTRIBUTION FOR SECNO=     62.00          CWSEL=   1041.78

STA=    9542.   10430.
  PER Q=    100.0
  . AREA=   7888.6
    VEL=      4.9

*SECNO 66.000
```

```
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=    9766.0    10445.0  TYPE=      1  TARGET=     679.000
                AP PLAN ST.66+00.
    66.00      9.44  1041.84  1039.29      0.00  1042.85      1.02      0.50      0.19  1039.60
   39000.        3.   38997.        0.        2.    4823.        0.      131.       15.  1045.60
     0.04      1.29      8.09      0.00     0.045     0.035     0.000     0.000  1032.40  9766.00
 0.002615      400.      400.      400.         2        14         0      0.00   670.24 10436.24

FLOW DISTRIBUTION FOR SECNO=     66.00          CWSEL=   1041.84

STA=    9766.    9767.   10444.
  PER Q=       0.0     100.0
   AREA=       2.4    4823.0
    VEL=       1.3       8.1

*SECNO 70.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=    9950.0    10401.0  TYPE=      1  TARGET=     451.000
                AP PLAN STA.70+00.
    70.00      8.73  1042.43  1040.88      0.00  1044.46      2.03      1.20      0.30100000.00
   39000.        0.   39000.        0.        0.    3413.        0.      167.       20.  1046.80
     0.05      0.00     11.43      0.00     0.000     0.035     0.000     0.00  1033.70  9950.00
 0.004839      375.      375.      375.         2        15         0      0.00   441.11 10391.11

FLOW DISTRIBUTION FOR SECNO=     70.00          CWSEL=   1042.43

STA=    9950.   10400.
  PER Q=     100.0
   AREA=    3412.8
    VEL=      11.4

*SECNO 72.000

3470 ENCROACHMENT STATIONS=    9930.0    10435.0  TYPE=      1  TARGET=     505.000
                AP PLAN STA.72+00.LAST X-SECT GIVEN. END AP CHANNEL AT STA.74+16
```

```
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

    72.00     10.16   1043.66   1041.80      0.00   1045.34      1.68      0.85     0.03100000.00
   39000.        0.   39000.        0.        0.     3748.        0.      182.       22.   1047.70
     0.05      0.00     10.40      0.00     0.000     0.035     0.000     0.000  1033.50   9930.00
 0.004108      190.      190.      190.         3        11         0      0.00   495.46  10425.46

FLOW DISTRIBUTION FOR SECNO=     72.00          CWSEL=   1043.66

STA=    9930.   10434.
  PER Q=    100.0
   AREA=   3748.4
    VEL=     10.4

*SECNO 77.000

3301 HV CHANGED MORE THAN HVINS

3710 WSEL ASSUMED BASED ON MIN DIFF
7185 MINIMUM SPECIFIC ENERGY

3470 ENCROACHMENT STATIONS=    9775.0   10286.0  TYPE=     1  TARGET=     511.000
                PROJECT DECK STARTS X-77. AP PLAN STA.74+16 AT 107TH AVE. NORTH
                PROJECT X-77 USED AS NATURAL RIVER BED.
    77.00     12.40   1046.00   1046.00      0.00   1049.81      3.81      3.55      0.64   1043.40
   39000.     1338.    37557.      106.      227.     2357.       32.      225.       29.   1044.70
     0.06      5.89     15.93      3.30     0.045     0.035     0.045     0.000  1033.60   9800.23
 0.007693      480.      650.      680.         0        11         0      0.00   375.71  10175.93

FLOW DISTRIBUTION FOR SECNO=     77.00          CWSEL=   1046.00

STA=    9800.    9807.    9858.    9875.    9884.   10148.   10165.   10176.
  PER Q=      0.0      1.8      1.1      0.5     96.3      0.2      0.0
   AREA=      4.7    130.0     63.7     28.8   2357.2     23.8      8.2
    VEL=      2.2      5.4      7.0      6.3     15.9      3.6      2.4

*SECNO 84.000
3280 CROSS SECTION     84.00 EXTENDED      0.95 FEET

3301 HV CHANGED MORE THAN HVINS
```

```
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

3470 ENCROACHMENT STATIONS=    9844.0   10401.0  TYPE=     1  TARGET=     557.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1053.50 ELREA=     1044.40

    84.00     15.25  1050.95  1045.18      0.00  1051.62      0.67      1.49      0.31  1053.50
   39000.        0.   38994.        6.        0.    5951.        7.      298.       36.  1044.40
     0.09      0.00      6.55      0.93     0.000     0.035     0.045     0.000  1035.70  9858.49
 0.000983      620.      700.      700.         2        19         0      0.00   542.50 10401.00

FLOW DISTRIBUTION FOR SECNO=     84.00          CWSEL=   1050.95

STA=    9858.   10400.   10401.
  PER Q=    100.0      0.0
   AREA=   5950.6      6.6
    VEL=      6.6      0.9

*SECNO 88.700

3470 ENCROACHMENT STATIONS=    9729.0   10301.0  TYPE=     1  TARGET=     572.000
                GRAVEL PIT, LOB BREAKOUT TO X95.5. D/S B.0. LIMITED IN Q TO X77
    88.70     17.53  1051.53  1043.41      0.00  1051.98      0.45      0.34      0.02  1052.00
   39000.        0.   38996.        4.        0.    7221.        6.      369.       42.  1045.60
     0.12      0.00      5.40      0.70     0.000     0.035     0.045     0.000  1034.00  9731.17
 0.000556      520.      470.      450.         2        21         0      0.00   569.83 10301.00

FLOW DISTRIBUTION FOR SECNO=     88.70          CWSEL=   1051.53

STA=    9731.   10300.   10301.
  PER Q=    100.0      0.0
   AREA=   7221.0      5.9
    VEL=      5.4      0.7

*SECNO 95.500

3470 ENCROACHMENT STATIONS=    9499.0   10306.0  TYPE=     1  TARGET=     807.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1052.00 ELREA=     1052.00

                GRAVEL PIT, LOB BREAKOUT TO X88.7.
    95.50     18.00  1052.00  1042.86      0.00  1052.44      0.44      0.46      0.00  1052.00
   39000.        0.   39000.        0.        0.    7314.        0.      483.       53.  1052.00
     0.15      0.00      5.33      0.00     0.000     0.035     0.000     0.000  1034.00  9500.02
 0.000839      400.      680.      680.         2         8         0      0.00   804.98 10305.00
```

```
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

FLOW DISTRIBUTION FOR SECNO=      95.50          CWSEL=   1052.00

STA=    9500.   10305.
  PER Q=    100.0
   AREA=   7314.0
    VEL=      5.3

*SECNO 100.700

2301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=    9629.0   10191.0  TYPE=      1  TARGET=      562.000
   100.70     17.36  1052.06  1046.79     0.00  1053.54     1.47     0.79      0.31  1055.00
   39000.        0.   39000.       0.       0.    4002.       0.     550.       61.   1052.00
     0.17      0.00     9.74     0.02    0.000    0.035    0.045    0.000  1034.70   9669.16
 0.003528      550.     520.     620.        2       19        0     0.00   521.84  10191.00

FLOW DISTRIBUTION FOR SECNO=    100.70          CWSEL=   1052.06

STA=    9669.   10190.
  PER Q=    100.0
   AREA=   4002.4
    VEL=      9.7

*SECNO 107.000

2301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=    9709.0   10256.0  TYPE=      1  TARGET=      547.000
   107.00     15.89  1053.89  1046.01     0.00  1054.39     0.50     0.76      0.10  1056.00
   39000.        0.   39000.       0.       0.    6883.       0.     629.       68.   1054.00
     0.20      0.00     5.67     0.00    0.000    0.035    0.000    0.00  1038.00   9723.17
 0.000597      300.     630.     640.        2       14        0     0.00   531.65  10254.82

FLOW DISTRIBUTION FOR SECNO=    107.00          CWSEL=   1053.89

STA=    9723.   10255.
  PER Q=    100.0
   AREA=   6882.9
    VEL=      5.7
```

```
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

CCHV=   0.300 CEHV=   0.500
*SECNO 110.700

3301 HV CHANGED MORE THAN HVINS

3710 WSEL ASSUMED BASED ON MIN DIFF
7185 MINIMUM SPECIFIC ENERGY

3470 ENCROACHMENT STATIONS=    9734.0   10236.0  TYPE=     1  TARGET=     502.000
   110.70     12.02  1053.32  1053.32     0.00  1056.27     2.95     0.56     1.23  1055.60
   39000.        0.   39000.       0.       0.    2827.       0.     670.      72.   1056.00
     0.20      0.00     13.79     0.00    0.000    0.035    0.000    0.000  1041.30  9771.14
 0.009434      600.      370.     300.        0       18        0     0.00   457.15 10228.29

FLOW DISTRIBUTION FOR SECNO=    110.70          CWSEL=   1053.32

STA=    9771.   10235.
  PER Q=    100.0
   AREA=   2827.4
    VEL=     13.8

*SECNO 117.200

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=    9844.0   10196.0  TYPE=     1  TARGET=     352.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1061.00 ELREA=     1061.00

                 DOWNSTREAM SIDE GLENDALE AVE BRIDGE
                 BRIDGE FOOTING NEARLY EXPOSED ON GLENDALE BRIDGE
   117.20     11.89  1058.09  1055.86     0.00  1060.25     2.15     3.73     0.24  1056.00
   39000.        0.   39000.       0.       0.    3312.       0.     716.      78.   1056.00
     0.22      0.00     11.77     0.00    0.000    0.035    0.000    0.000  1046.20  9845.00
 0.003863      800.      650.     400.        2       15        0     0.00   350.00 10195.00

FLOW DISTRIBUTION FOR SECNO=    117.20          CWSEL=   1058.09

STA=    9845.   10195.
  PER Q=    100.0
   AREA=   3312.3
    VEL=     11.8
```

```
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAF     TOPWID      ENDST


SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.90      1.56      2.90      0.00    352.00     19.80   5503.00     0.00   1046.50   1046.20

*SECNO 118.000
     3700.   BRIDGE STENCL=   9844.00    STENCR=  10196.00
CLASS A LOW FLOW

3420 BRIDGE W.S.=   1058.01 BRIDGE VELOCITY=,     10.07      CALCULATED CHANNEL AREA=,     3824.

 EGPRS      EGLWC       H3        QWEIR      QLOW      BAREA   TRAPEZOID      ELLC      ELTRD
                                                                  AREA
      0.00   1060.87     0.46        0.    39000.     5503.     5515.     1063.10   1063.00


3470 ENCROACHMENT STATIONS=    9844.0   10196.0  TYPE=     1  TARGET=     352.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1063.50 ELREA=     1063.00

                UPSTREAM SIDE GLENDALE AVE BRIDGE-PERCHED. 2FT DEBRIS PER PIER.
                1983 TOPO WITHIN 0.3FT OF BRIDGE LAN DECK.USED PLANS MINUS 0.3FT
   118.00     11.05  1058.55      0.00      0.00  1060.87      2.31      0.62      0.00  1058.00
   39000.       0.   39000.        0.        0.    3196.        0.      720.       79.   1058.00
     0.22      0.00     12.20     0.00     0.000     0.035    0.000     0.000  1047.50  9845.00
 0.004355      52.       52.      52.         0         0        0      0.00   350.00 10195.00


FLOW DISTRIBUTION FOR SECNO=    118.00          CWSEL=   1058.55

STA=    9845.   10195.
  PER Q=    100.0
   AREA=   3196.4
    VEL=     12.2
```

THIS RUN EXECUTED WED, MAY 28 1986 14:09:41

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*************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
*************************************************
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

100-YR FLOODWAY W/GLENDA

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
*	55.730	0.00	0.00	0.00	1029.00	39000.00	1041.49	1036.36	1041.86	7.43	4.89	7971.61	14305.95
*	62.000	400.00	0.00	0.00	1030.50	39000.00	1041.78	1036.46	1042.16	7.34	4.94	7888.63	14393.25
	66.000	400.00	0.00	0.00	1032.40	39000.00	1041.84	1039.29	1042.85	26.15	8.09	4825.35	7626.03
	70.000	375.00	0.00	0.00	1033.70	39000.00	1042.43	1040.88	1044.46	48.39	11.43	3412.77	5606.44
	72.000	190.00	0.00	0.00	1033.50	39000.00	1043.66	1041.80	1045.34	41.08	10.40	3748.43	6084.94
*	77.000	650.00	0.00	0.00	1033.60	39000.00	1046.00	1046.00	1049.81	76.93	15.93	2616.36	4446.62
	84.000	700.00	0.00	0.00	1035.70	39000.00	1050.55	1045.18	1051.62	9.83	6.55	5957.24	12438.55
	88.700	470.00	0.00	0.00	1034.00	39000.00	1051.53	1043.41	1051.98	5.56	5.40	7226.91	16545.87
	95.500	680.00	0.00	0.00	1034.00	39000.00	1052.00	1042.86	1052.44	8.39	5.33	7313.98	13461.90
	100.700	520.00	0.00	0.00	1034.70	39000.00	1052.06	1046.79	1053.54	35.28	9.74	4002.48	6565.62
	107.000	630.00	0.00	0.00	1038.00	39000.00	1053.89	1046.01	1054.39	5.97	5.67	6882.90	15956.55
*	110.700	370.00	0.00	0.00	1041.30	39000.00	1053.32	1053.32	1056.27	94.34	13.79	2827.41	4015.31
	117.200	650.00	0.00	0.00	1046.20	39000.00	1058.09	1055.86	1060.25	38.63	11.77	3312.32	6274.74
	118.000	52.00	1063.00	1063.10	1047.50	39000.00	1058.55	0.00	1060.87	43.55	12.20	3196.45	5909.63

100-YR FLOODWAY W/GLENDA

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	55.730	39000.00	1041.49	0.00	0.00	0.00	914.27	0.00
*	62.000	39000.00	1041.78	0.00	0.29	0.00	882.29	400.00
	66.000	39000.00	1041.84	0.00	0.06	0.00	670.24	400.00
	70.000	39000.00	1042.43	0.00	0.59	0.00	441.11	375.00
	72.000	39000.00	1043.66	0.00	1.23	0.00	495.46	190.00
*	77.000	39000.00	1046.00	0.00	2.34	0.00	375.71	650.00
	84.000	39000.00	1050.95	0.00	4.95	0.00	542.50	700.00
	88.700	39000.00	1051.53	0.00	0.58	0.00	569.83	470.00
	95.500	39000.00	1052.00	0.00	0.47	0.00	804.58	680.00
	100.700	39000.00	1052.06	0.00	0.07	0.00	521.84	520.00
	107.000	39000.00	1053.89	0.00	1.83	0.00	531.65	630.00
*	110.700	39000.00	1053.32	0.00	-0.58	0.00	457.15	370.00
	117.200	39000.00	1058.09	0.00	4.78	0.00	350.00	650.00
	118.000	39000.00	1058.55	0.00	0.46	0.00	350.00	52.00

SUMMARY OF ERRORS AND SPECIAL NOTES

```
CAUTION  SECNO=    55.730  PROFILE= 1  WSEL ASSUMED BASED ON MIN DIFF

CAUTION  SECNO=    62.000  PROFILE= 1  WSEL ASSUMED BASED ON MIN DIFF

CAUTION  SECNO=    77.000  PROFILE= 1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=    77.000  PROFILE= 1  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=   110.700  PROFILE= 1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=   110.700  PROFILE= 1  MINIMUM SPECIFIC ENERGY
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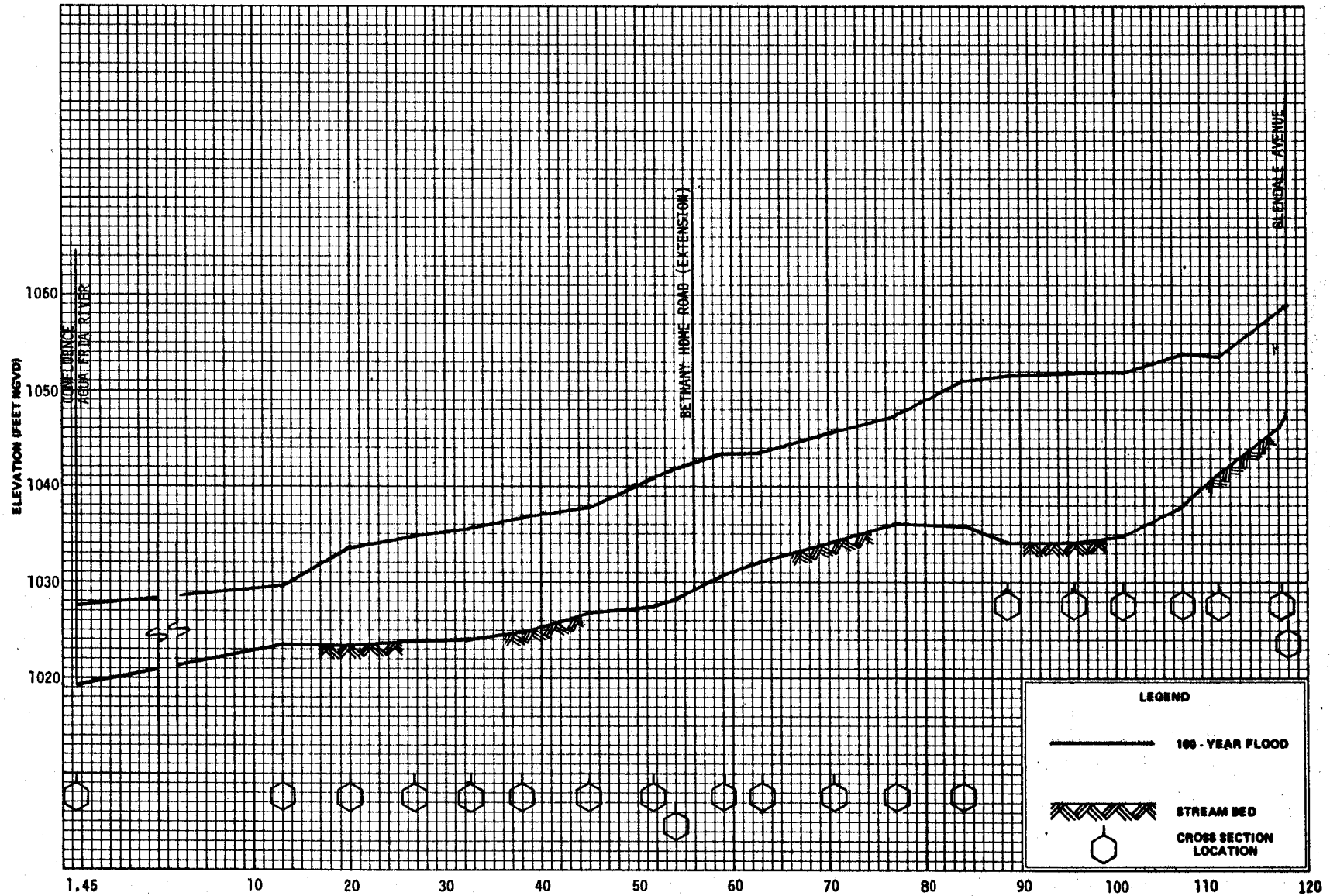
FLOOD PROFILES

Job #1068-05
CVL #4/22/10

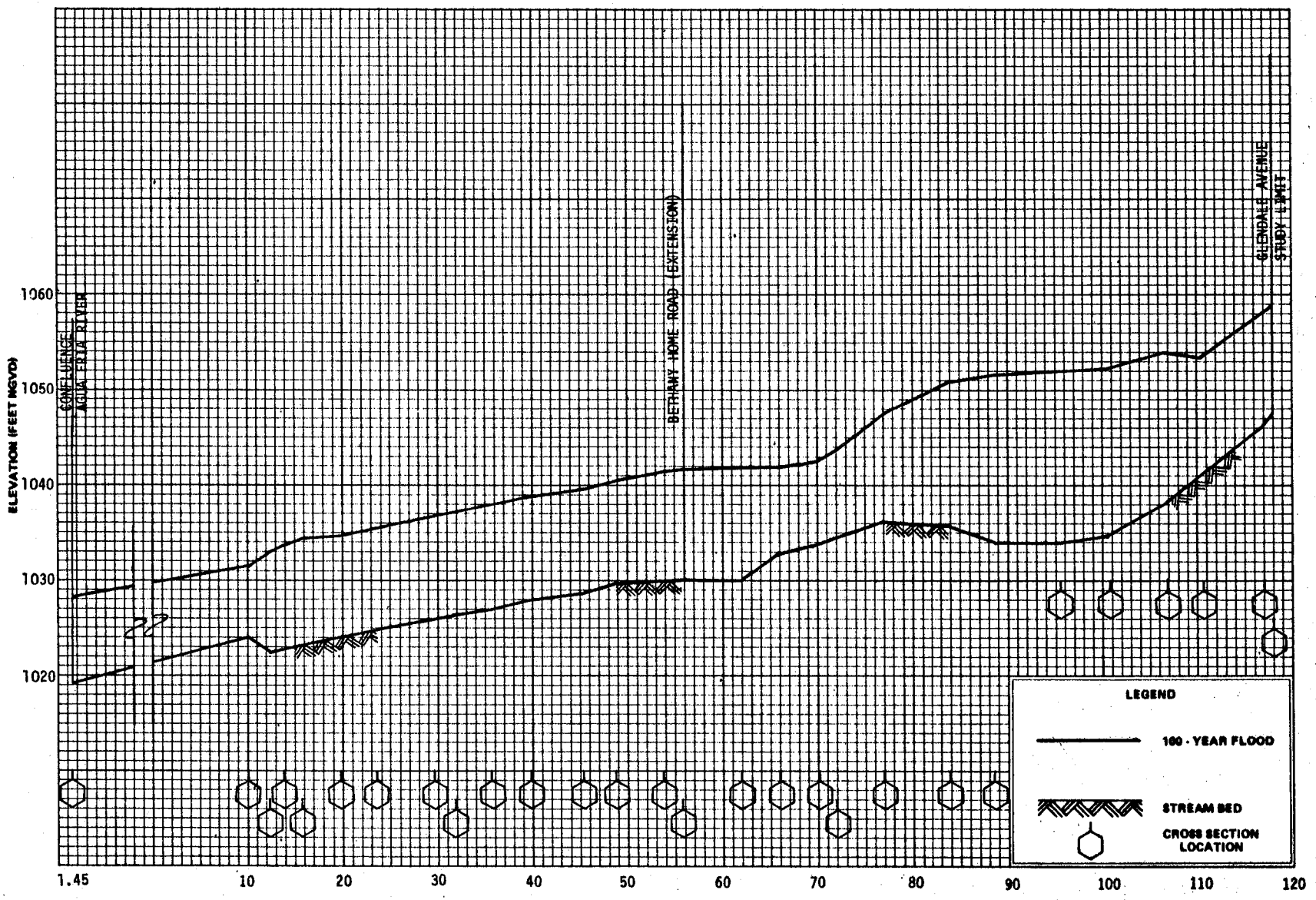


FLOOD PROFILES

NEW RIVER

FLOODPLAIN STUDY FOR NEW RIVER
AT BETHANY SITE
COE ANALYSIS PRIOR TO GMA CHANNELIZATION

PROFILE 1

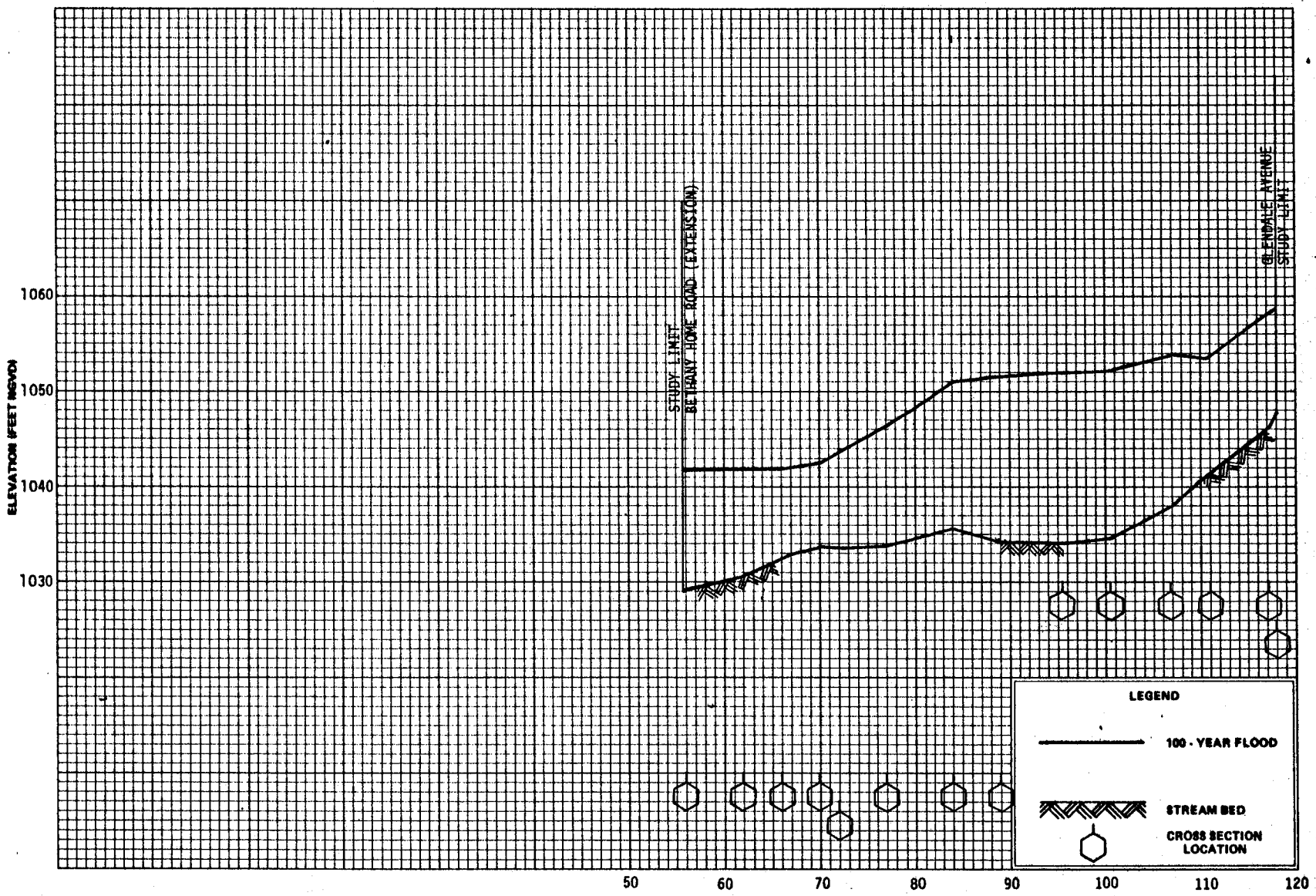


FLOOD PROFILES

NEW RIVER

FLOODPLAIN STUDY FOR NEW RIVER
AT BETHANY SITE
COE ANALYSIS WITH GMA CHANNELIZATION

PROFILE 2



STREAM DISTANCE IN STATIONS (100 FT) INCREASING UPSTREAM FROM CONFLUENCE WITH AGUA FRIA RIVER

FLOOD PROFILES

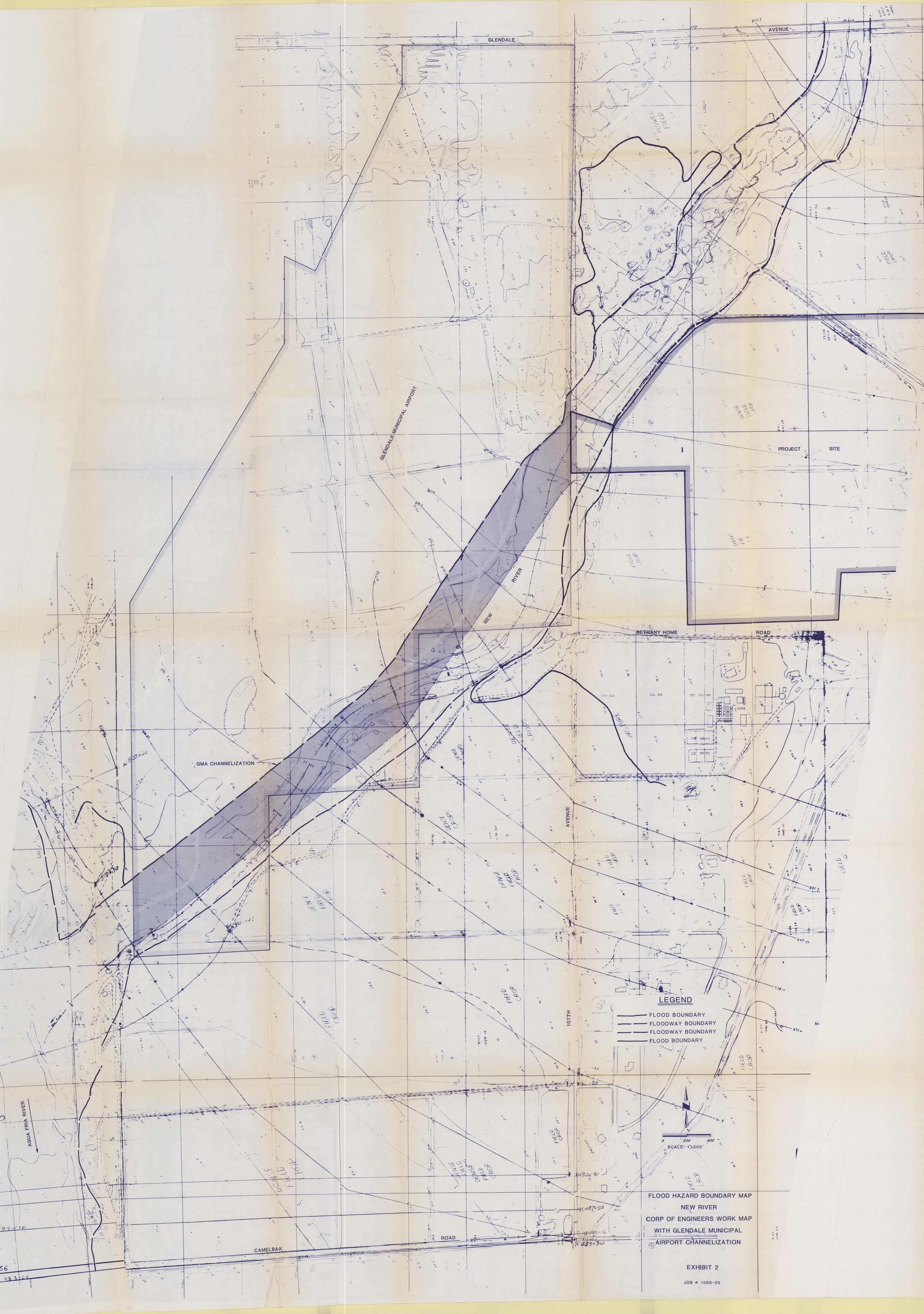
NEW RIVER

FLOODPLAIN STUDY FOR NEW RIVER
AT BETHANY SITE
CVL ANALYSIS WITH GMA CHANNELIZATION
AS-BUILT SECTIONS

PROFILE 3

LEGEND
FLOOD BOUNDARY
FLOODWAY BOUNDARY
FLOODWAY BOUNDARY
FLOOD BOUNDARY
SCALE: 1" 200'
0 200 400
FLOOD HAZARD BOUNDARY MAP
NEW RIVER
CORP OF ENGINEERS WORK MAP
PRIOR TO GLENDALE MUNICIPAL
AIRPORT CHANNELIZATION
EXHIBIT 1
JOB# 1068-05
AGUA FRIA RIVER
CAMELBACK
ROAD
107TH
AVE
PASTURE
DENSE FIELD CROP
FIELD CROP
PLOWED FIELD
X483+56
483+60
487+50
+90
+70
X490+90
X487+50
X483+56
X483+30
X490+70
X520+30
X550+45
X580+20
X38.0
X32.4
X26.8
X20.0

PROJECT SITE
DENSE FIELD CROP
FIELD CROP
RIVER
GLENDALE MUNICIPAL AIRPORT
GRADED FIELD
PLOWED FIELD
GLENDALE
AVENUE


GLENDALE
AVENUE
GLENDALE MUNICIPAL AIRPORT
PROJECT SITE
NEW RIVER
BETHANY HOME ROAD
GMA CHANNELIZATION
AVENUE
107TH
AGUA FRIA RIVER
CAMELBACK ROAD
DENSE FIELD CROP
FIELD CROP
LEGEND
FLOOD BOUNDARY
FLOODWAY BOUNDARY
FLOODWAY BOUNDARY
FLOOD BOUNDARY
0 200 400
SCALE: 1"=200'
FLOOD HAZARD BOUNDARY MAP
NEW RIVER
CORP OF ENGINEERS WORK MAP
WITH GLENDALE MUNICIPAL
AIRPORT CHANNELIZATION
EXHIBIT 2
JOB # 1068-05

a) Sections 55.73 and 62 were as-built from aerial topo.

b) Sections 66, 70 72, and 77 were as-built from field survey.

FLOOD HAZARD BOUNDARY MAP
NEW RIVER
C.V.L. WORK MAP WITH
GLENDALE MUNICIPAL
AIRPORT CHANNELIZATION
AS-BUILT SECTIONS

EXHIBIT 3

JOB # 1068-05