CRSS

Additional Data

Salt River Channelization
48th Street to Southern Pacific Railroad Salt River Bridge

Prepared for

Rio Salado Task Force
City of Tempe
Tempe, Arizona

by

CRSS Civil Engineers, Inc.
4041 North Central Avenue, Suite 650
Phoenix, Arizona 85012

Registered Professional Engineer
CERTIFICATE NO.
20207
GEORGE K.
COTTON
Date Signed 9/8/92
ARIZONA, U.S.A.

September 1992

CRSS

September 8, 1992

City of Tempe
Public Works Department
PO Box 5002
31 East Fifth Street
Tempe, AZ 85280

Attention: James E. Bond, PE
Senior Civil Engineer

Project: Salt River Flood Plain Revisions
Project No. 906345B

Subject: Response to FEMA comments

Dear Jim:

Attached are revised calculation and data per FEMA's June 12, 1992 letter requiring addition data in support of the CLOMR for phase one of the Rio Salado Salt River Channelization. This letter identified six items needed in order for FEMA to complete the review. We have addressed items 1, 2, 3, 5 and 6.

For item 1, find attached a revised version of Appendix B2, Water Surface Profile Computations for the Project Reach, that includes the Priest Bridge.

For item 2, the computation was checked and the reduction was verified to be 1600 feet. The profile provided for item 5 also shows the same reduction in channel length.

For item 3, project plans already provided for review include a grading and a levee plan / profile sheets (see plan and profile drawings CH-2.2 and CH-2.16, and grading plan drawing CH-5.2). These sheets show existing and channelized topography (contours) for the levee transition at the SPRR bridge and at the Mill Avenue bridge. These sheets are sealed by a registered professional engineer.

For item 5, see the attached marked up copy of the FIS profile for the study reach.

For item 6b. Various storm drain outfalls have been constructed to the Salt River as part of the East Papago and Hohokam Freeway projects. The original list was compiled from available project plans and drainage reports prior to the availability of the as-built channel plans. Attached is a revised list with corrections per the as-built channel plan set.

If you have any questions, or need further assistance please call me.

Very truly yours,

George K. Cotton

George K. Cotton, PE
Senior Water Resources Engineer

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Item 1. Revised HEC-2 Runs

APPENDIX B2

Water-Surface Profile Computations for Project Reach

Three HEC-2 runs are provided in this analysis.

- Run #1 is for the downstream baseline conditions from mile 16.733 to 18.417 (start of construction).

- Run #2 is for the project reach from Station 100+35 (mile 18.417) to Station 267.37 (mile 21.725) (40th Street to Southern Pacific Railroad Bridge).

- Run #3 is for the upstream baseline conditions as affected by the project from mile 21.725 (end of construction) to 23.667 (Mill Avenue to Price Road).

Run #1
unchanged

Run #2

Reach:	Project Reach (approximately 40th St to SPRR Bridge) Replaces reach from mile 18.417 to 21.725
Source:	CRSS Civil Engineers

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B O S S H E C - 2 (tm)
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PROGRAM ORIGIN :

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PROJECT DESCRIPTION :

PROJECT TITLE : City of Tempe File Name: RSSRP1.HC2
PROJECT NUMBER : Channelized Salt River
DESCRIPTION : 100 Year Floodplain with Levees
ENGINEER :
DATE OF RUN : 9/03/1992
TIME OF RUN : 4:31 pm

T1 Channelized Salt River
T2 City of Tempe File Name: RSSRP1.HC2
T3 100 Year Floodplain with Levees

JOB PARAMETERS :

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	2	0	0	0.0	0	0.0	205000.0	119.15	

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	-1	0	0.0	0.0	0.0	0.0	0.0	-6.0	0.0	15

USER-DEFINED SUMMARY TABLES (J3) :

38	42	39	43	1	3	25	4	5

NC	0.050	0.050	0.035	0.1	0.3

Begin ADOT Channelization
Begin ADOT Channelization

X1	10035	12	10020.0	11105.0	0.0	0.0	0.0	1.0	0.0	0
GR	125.0	10000.	125.0	10010.	122.00	10020.	105.00	10056.	104.00	10340.
GR	100.00	10356.	97.20	10540.	100.00	10750.	105.00	10770.	105.00	11050.
GR	125.0	11105.	125.0	11150.						
X1	10200	11	10025.0	11100.0	165.0	165.0	165.0	1.0	0.0	0
GR	122.00	10000.	123.00	10025.	105.00	10065.	104.00	10355.	100.00	10365.
GR	98.10	10548.	100.00	10758.	105.00	10775.	105.00	11060.	123.00	11100.
GR	123.00	11150.								
X1	10400	11	10035.0	11103.0	200.0	200.0	200.0	1.0	0.0	0
GR	122.00	10000.	122.00	10035.	105.00	10070.	105.00	10353.	100.00	10385.
GR	98.10	10548.	100.00	10758.	105.00	10775.	105.00	11060.	123.00	11103.
GR	123.00	11140.								
X1	10600	11	10025.0	11100.0	200.0	200.0	200.0	1.0	0.0	0
GR	123.00	10000.	123.00	10025.	105.00	10068.	105.00	10362.	100.00	10392.
GR	98.50	10544.	100.00	10760.	105.00	10775.	106.00	11050.	124.00	11100.
GR	124.00	11130.								
X1	10800	11	10030.0	11100.0	200.0	200.0	200.0	1.0	0.0	0
GR	123.00	10000.	123.00	10030.	105.00	10067.	106.00	10380.	100.00	10400.
GR	99.00	10540.	101.00	10780.	106.00	10800.	107.00	11060.	124.00	11100.
GR	124.00	11145.								

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X1    11000       11   10022.0   11095.0     200.0     200.0     200.0       1.0       0.0         0
GR   123.00    10000.     123.00    10022.    105.00    10065.    106.00    10392.    101.00    10418.
GR    99.50    10538.     101.00    10810.    106.00    10830.    107.00    11060.    124.00    11095.
GR   125.00    11195.

X1    11200       12   10030.0   11100.0     200.0     200.0     200.0       1.0       0.0         0
GR   123.00    10000.     123.00    10030.    106.00    10064.    106.00    10413.    100.00    10425.
GR   100.00    10538.     100.00    10815.    103.00    10821.    106.00    10875.    107.00    11055.
GR   126.00    11100.     126.00    11160.

X1    11400       11   10030.0   11113.0     200.0     200.0     200.0       1.0       0.0         0
GR   124.00    10000.     124.00    10030.    107.00    10064.    103.40    10405.    100.40    10411.
GR   100.40    10810.     103.40    10816.    108.00    10925.    108.00    11060.    126.00    11113.
GR   128.00    11195.

X1    11600       12   10030.0   11122.0     200.0     200.0     200.0       1.0       0.0         0
GR   124.00    10000.     124.00    10030.    108.00    10065.    103.90    10399.    100.90    10405.
GR   100.90    10805.     103.90    10811.    103.90    11060.    116.50    11080.    116.50    11089.
GR   127.50    11122.     127.50    11133.

X1    11800       12   10035.0   11130.0     200.0     200.0     200.0       1.0       0.0         0
GR   125.50    10000.     125.00    10035.    110.00    10075.    104.40    10386.    101.40    10392.
GR   101.40    10792.     104.40    10798.    104.40    11071.    116.90    11089.    116.90    11097.
GR   127.90    11130.     127.90    11141.

X1    12000       12   10035.0   11130.0     200.0     200.0     200.0       1.0       0.0         0
GR   127.60    10000.     127.00    10035.    110.00    10070.    104.80    10364.    101.80    10370.
GR   101.80    10770.     104.80    10776.    104.80    11070.    117.40    11089.    117.40    11097.
GR   128.40    11130.     128.40    11140.

X1    12100       12   10035.0   11125.0     100.0     100.0     100.0       1.0       0.0         0
GR   127.80    10000.     127.00    10035.    110.50    10070.    105.10    10347.    102.10    10353.
GR   102.10    10753.     105.10    10759.    105.10    11065.    117.60    11084.    117.60    11092.
GR   128.60    11125.     128.60    11136.

X1    12200       12   10032.0   11123.0     100.0     100.0     100.0       1.0       0.0         0
GR   128.00    10000.     126.00    10032.    110.00    10082.    105.30    10334.    102.30    10340.
GR   102.30    10740.     105.30    10746.    105.30    11063.    117.80    11082.    117.80    11090.
GR   128.80    11123.     128.80    11134.

X1    12400       12   10047.0   11109.0     200.0     200.0     200.0       1.0       0.0         0
GR   129.30    10000.     129.00    10047.    111.00    10085.    105.80    10308.    102.80    10314.
GR   102.80    10714.     105.80    10720.    105.80    11049.    118.20    11068.    118.20    11076.
GR   129.20    11109.     129.20    11119.

X1    12600       14   10033.0   11097.0     200.0     200.0     200.0       1.0       0.0         0
GR   130.00    10000.     130.00    10033.    118.60    10078.    118.60    10086.    106.20    10105.
GR   106.20    10281.     103.20    10287.    103.20    10687.    106.20    10693.    106.20    11038.
GR   118.60    11056.     118.60    11064.    129.60    11097.    129.60    11108.

X1    12800       14   10055.0   11130.0     200.0     200.0     200.0       1.0       0.0         0
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GR   130.40     10000.     131.00     10055.     119.10     10108.     119.10     10116.     106.70     10135.
GR   106.70     10284.     103.70     10290.     103.70     10690.     106.70     10696.     106.70     11071.
GR   119.10     11089.     119.10     11097.     130.00     11130.     130.00     11141.

X1    13000         14   10059.0    11115.0      200.0      200.0      200.0        1.0        0.0          0
GR   132.00     10000.     131.00     10059.     119.40     10087.     119.40     10095.     107.20     10113.
GR   107.20     10244.     104.20     10250.     104.20     10650.     107.20     10656.     107.20     11055.
GR   119.50     11074.     119.50     11082.     130.50     11115.     130.50     11126.

X1    13200         14   10040.0    11092.0      200.0      200.0      200.0        1.0        0.0          0
GR   131.00     10000.     130.00     10040.     119.90     10064.     119.90     10072.     107.70     10090.
GR   107.70     10194.     104.70     10200.     104.70     10600.     107.70     10606.     107.70     11032.
GR   119.90     11051.     119.90     11059.     130.90     11092.     130.90     11102.

X1    13400         14   10040.0    11092.0      200.0      200.0      200.0        1.0        0.0          0
GR   131.00     10000.     130.00     10040.     120.30     10064.     120.30     10072.     108.10     10090.
GR   108.10     10172.     105.10     10178.     105.10     10578.     108.10     10584.     108.10     11032.
GR   120.30     11051.     120.30     11059.     131.30     11092.     131.30     11102.

X1    13600         14   10042.0    11087.0      200.0      200.0      200.0        1.0        0.0          0
GR   132.00     10000.     130.00     10042.     120.80     10067.     120.80     10075.     108.60     10093.
GR   108.60     10144.     105.60     10150.     105.60     10550.     108.60     10556.     108.60     11027.
GR   120.80     11046.     120.80     11054.     131.80     11087.     131.80     11097.

X1    13800         14   10035.0    11081.0      200.0      200.0      200.0        1.0        0.0          0
GR   132.50     10000.     130.00     10035.     121.20     10055.     121.20     10063.     109.10     10081.
GR   109.10     10114.     106.10     10120.     106.10     10520.     109.10     10526.     109.10     11022.
GR   121.20     11040.     121.20     11048.     132.20     11081.     132.20     11092.

X1    14000         14   10033.0    11085.0      200.0      200.0      200.0        1.0        0.0          0
GR   132.00     10000.     130.00     10033.     121.60     10049.     121.60     10057.     109.50     10075.
GR   109.50     10096.     106.50     10102.     106.50     10502.     109.50     10508.     109.50     11026.
GR   121.60     11044.     121.60     11052.     132.60     11085.     132.60     11096.

X1    14200         14   10011.0    11093.0      200.0      200.0      200.0        1.0        0.0          0
GR   133.00     10000.     133.00     10011.     122.00     10044.     122.00     10052.     110.00     10070.
GR   110.00     10091.     107.00     10097.     107.00     10497.     110.00     10503.     110.00     11034.
GR   122.00     11052.     122.00     11060.     133.00     11093.     133.00     11104.

NC      0.0        0.0        0.0        0.3        0.5
  Grade Control Str. No. 2
Grade Control Str. No. 2

X1    14400         13   10027.0    11093.0      200.0      200.0      200.0        1.0        0.0          0
GR   133.50     10000.     133.50     10027.     133.50     10035.     110.50     10070.     110.50     10086.
GR   107.50     10092.     107.50     10492.     110.50     10498.     110.50     11034.     122.50     11052.
GR   122.50     11060.     133.50     11093.     133.50     11104.

NC    0.050      0.050      0.035        0.3        0.5
  SR 153 Bridge (D/S limit)
SR 153 Bridge (D/S limit)
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X1    14665        10    10036.0    11068.0      265.0      265.0      265.0        1.0        0.0          0
X3        0       0.0        0.0    10036.0      147.0    11068.0      147.0        0.0        0.0
GR   134.10     10000.     134.10     10036.     111.20     10070.     111.20      10092.     108.20      10098.
GR   108.20     10498.     111.20     10504.     111.20     11034.     134.10      11068.     134.10      11103.
  SR 153 Bridge (U/S limit)

SR 153 Bridge (U/S limit)

X1    14785        12    10011.0    11068.0      120.0      120.0      120.0        1.0        0.0          0
GR   134.30     10000.     134.30     10011.     123.30     10044.     123.30      10052.     111.40      10070.
GR   111.40     10092.     108.40     10098.     108.40     10498.     111.40      10504.     111.40      11034.
GR   134.30     11068.     134.30     11103.

NC      0.0        0.0        0.0        0.1        0.3
X1    15000        14    10011.0    11091.0      215.0      215.0      215.0        1.0        0.0          0
GR   134.70     10000.     134.70     10011.     123.70     10044.     123.70      10052.     111.90      10070.
GR   111.90     10091.     108.90     10097.     108.90     10497.     111.90      10503.     111.90      11033.
GR   123.70     11050.     123.70     11058.     134.70     11091.     134.70      11102.

NC    0.050      0.050      0.035        0.1        0.3
X1    15200        14    10011.0    11091.0      200.0      200.0      200.0        1.0        0.0          0
GR   135.20     10000.     135.20     10011.     124.20     10044.     124.20      10052.     112.40      10070.
GR   112.40     10091.     109.40     10097.     109.40     10497.     112.40      10503.     112.40      11033.
GR   124.20     11050.     124.20     11058.     135.20     11091.     135.20      11102.

X1    15400        12    10035.0    11091.0      200.0      200.0      200.0        1.0        0.0          0
GR   135.60     10000.     135.60     10035.     112.80     10069.     112.80      10091.     109.80      10097.
GR   109.80     10497.     112.80     10503.     112.80     11033.     124.60      11051.     124.60      11059.
GR   135.60     11091.     135.60     11102.

NC    0.050      0.050      0.035        0.3        0.5
QT        1   210000.0
  SR 143 Bridge (D/S limit)
SR 143 Bridge (D/S limit)

X1    15586        12    10035.0    11091.0      186.0      186.0      186.0        1.0        0.0          0
X3        0       0.0        0.0    10035.0      145.4    11091.0      145.4        0.0        0.0
GR   136.00     10000.     136.00     10035.     113.30     10069.     113.30      10091.     110.30      10097.
GR   110.30     10497.     113.30     10503.     113.30     11033.     125.00      11051.     125.00      11059.
GR   136.00     11091.     136.00     11102.

SB     1.05       1.56        2.6      200.0      963.0       48.0    26680.0        1.5     110.50      110.30
  SR 143 Bridge (U/S limit)
SR 143 Bridge (U/S limit)

X1    15710        12    10011.0    11066.0      124.0      124.0      124.0        1.0        0.0          0
X2      0.0       0.0          1      137.0      145.4        0.0          0       2.00        0.0
GR   136.10     10000.     136.20     10011.     125.20     10044.     125.20      10052.     113.60      10070.
GR   113.60     10091.     110.60     10097.     110.60     10497.     113.60      10503.     113.60      11032.
GR   136.20     11066.     136.20     11102.

NC      0.0        0.0        0.0        0.1        0.3
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X1    16000       16   10011.0   11084.0     290.0     290.0     290.0       1.0       0.0         0
GR   136.90    10000.    136.90    10011.    125.90    10044.    125.90    10052.    114.30     10078.
GR   114.30    10089.    111.30    10095.    111.30    10495.    114.30    10501.    114.30     11032.
GR   125.90    11050.    125.90    11058.    122.90    11062.    122.90    11063.    136.90     11084.
GR   136.90    11098.

NC     0.035     0.035     0.035       0.1       0.3
X1    16200       15   10020.0   11096.0     200.0     200.0     200.0       1.0       0.0         0
GR   137.30    10000.    137.30    10012.    137.30    10020.    114.70    10081.    114.70     10109.
GR   111.70    10115.    111.70    10515.    114.70    10521.    114.70    11043.    126.30     11061.
GR   126.30    11069.    123.30    11073.    123.30    11074.    137.30    11096.    137.30     11109.

X1    16400       16   10011.0   11083.0     200.0     200.0     200.0       1.0       0.0         0
GR   137.70    10000.    137.70    10011.    126.70    10044.    126.70    10052.    115.20     10069.
GR   115.20    10102.    112.20    10108.    112.20    10508.    115.20    10514.    115.20     11031.
GR   126.70    11049.    126.70    11057.    123.70    11061.    123.70    11062.    138.30     11083.
GR   138.30    11098.

X1    16600       16   10011.0   11085.0     200.0     200.0     200.0       1.0       0.0         0
GR   138.10    10000.    138.10    10011.    127.10    10043.    127.10    10051.    115.70     10069.
GR   115.70    10124.    112.70    10130.    112.70    10530.    115.70    10536.    115.70     11033.
GR   127.10    11050.    127.10    11058.    124.10    11063.    124.10    11064.    138.70     11085.
GR   138.70    11099.

X1    16800       16   10010.0   11087.0     200.0     200.0     200.0       1.0       0.0         0
GR   138.60    10000.    138.60    10010.    127.60    10043.    127.60    10051.    116.20     10069.
GR   116.20    10157.    113.20    10163.    113.20    10563.    116.20    10569.    116.20     11035.
GR   127.60    11052.    127.60    11060.    124.60    11065.    124.60    11066.    139.20     11087.
GR   139.20    11101.

X1    17000       16   10011.0   11089.0     200.0     200.0     200.0       1.0       0.0         0
GR   139.00    10000.    139.00    10011.    128.00    10044.    128.00    10052.    116.60     10069.
GR   116.60    10205.    113.60    10211.    113.60    10611.    116.60    10617.    116.60     11037.
GR   128.00    11054.    128.00    11062.    125.00    11067.    125.00    11068.    139.60     11089.
GR   139.60    11103.

X1    17200       16   10011.0   11089.0     200.0     200.0     200.0       1.0       0.0         0
GR   139.40    10000.    139.40    10011.    128.40    10044.    128.40    10052.    117.10     10069.
GR   117.10    10263.    114.10    10269.    114.10    10669.    117.10    10675.    117.10     11037.
GR   128.40    11054.    128.40    11062.    125.40    11067.    125.40    11068.    140.00     11089.
GR   140.00    11103.

X1    17400       12   10010.0   11088.0     200.0     200.0     200.0       1.0       0.0         0
GR   139.80    10000.    139.80    10010.    128.80    10043.    128.80    10051.    117.60     10068.
GR   117.60    10322.    114.60    10328.    114.60    10728.    117.60    10734.    117.60     11036.
GR   140.40    11088.    140.40    11102.

X1    17600       12   10011.0   11070.0     200.0     200.0     200.0       1.0       0.0         0
GR   140.30    10000.    140.30    10011.    129.30    10044.    129.30    10052.    118.00     10069.
GR   118.00    10382.    115.00    10388.    115.00    10788.    118.00    10794.    118.00     11035.
GR   140.90    11070.    140.90    11084.
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X1    17800       12   10011.0   11067.0     200.0     200.0     200.0       1.0       0.0         0
GR   140.70    10000.   140.70    10011.    129.70    10044.    129.70    10052.    118.50     10068.
GR   118.50    10431.   115.50    10437.    115.50    10837.    118.50    10843.    118.50     11033.
GR   141.30    11067.   141.30    11081.

X1    18000       12   10011.0   11065.0     200.0     200.0     200.0       1.0       0.0         0
GR   141.00    10000.   141.00    10011.    130.10    10044.    130.10    10052.    119.00     10069.
GR   119.00    10485.   116.00    10491.    116.00    10891.    119.00    10897.    119.00     11031.
GR   141.70    11065.   141.70    11079.

X1    18200       12   10011.0   11061.0     200.0     200.0     200.0       1.0       0.0         0
GR   141.50    10000.   141.50    10011.    130.50    10044.    130.50    10052.    119.50     10069.
GR   119.50    10528.   116.50    10534.    116.50    10934.    119.50    10940.    119.50     11027.
GR   142.10    11061.   142.10    11075.

X1    18400       10   10015.0   11080.0     200.0     200.0     200.0       1.0       0.0         0
GR   142.00    10000.   142.00    10015.    119.90    10077.    119.90    10567.    116.90     10573.
GR   116.90    10973.   119.90    10979.    119.90    11032.    142.60    11080.    142.60     11090.

X1    18600       10   10018.0   11050.0     200.0     200.0     200.0       1.0       0.0         0
GR   142.40    10000.   142.40    10018.    120.40    10067.    120.40    10576.    117.40     10582.
GR   117.40    10982.   120.40    10988.    120.40    11016.    143.00    11050.    143.00     11063.

X1    18800       12   10011.0   11046.0     200.0     200.0     200.0       1.0       0.0         0
GR   142.80    10000.   142.80    10011.    131.80    10044.    131.80    10052.    120.90     10069.
GR   120.90    10587.   117.90    10593.    117.90    10993.    120.90    10999.    120.90     11012.
GR   143.40    11046.   143.40    11060.

X1    19000       12   10011.0   11039.0     200.0     200.0     200.0       1.0       0.0         0
GR   143.20    10000.   143.20    10011.    132.20    10044.    132.20    10052.    121.30     10069.
GR   121.30    10586.   118.30    10592.    118.30    10992.    121.30    10998.    121.30     11005.
GR   143.80    11039.   143.80    11053.

X1    19200       12   10011.0   11031.0     200.0     200.0     200.0       1.0       0.0         0
GR   143.70    10000.   143.70    10011.    132.70    10044.    132.70    10052.    121.80     10068.
GR   121.80    10574.   118.80    10580.    118.80    10980.    121.80    10986.    121.80     10998.
GR   144.30    11031.   144.30    11045.

X1    19400       12   10011.0   11023.0     200.0     200.0     200.0       1.0       0.0         0
GR   144.10    10000.   144.10    10011.    133.10    10044.    133.10    10052.    122.30     10068.
GR   122.30    10555.   119.30    10561.    119.30    10961.    122.30    10967.    122.30     10989.
GR   144.70    11023.   144.70    11037.

X1    19600       12   10011.0   11014.0     200.0     200.0     200.0       1.0       0.0         0
GR   144.50    10000.   144.50    10011.    133.50    10044.    133.50    10052.    122.80     10068.
GR   122.80    10516.   119.80    10522.    119.80    10922.    122.80    10928.    122.80     10980.
GR   145.10    11014.   145.10    11028.

X1    19800       12   10011.0   11005.0     200.0     200.0     200.0       1.0       0.0         0
GR   145.00    10000.   145.00    10011.    134.00    10044.    134.00    10052.    123.20     10068.
GR   123.20    10480.   120.20    10486.    120.20    10886.    123.20    10892.    123.20     10972.
GR   145.60    11005.   145.60    11019.
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X1    20000       12   10010.0   10994.0     200.0     200.0     200.0       1.0       0.0         0
GR   145.60    10000.    145.60    10010.    134.60    10043.    134.60    10051.    123.70    10068.
GR   123.70    10435.    120.70    10441.    120.70    10841.    123.70    10847.    123.70    10961.
GR   145.60    10994.    145.60    11008.

X1    20200       12   10011.0   10987.0     200.0     200.0     200.0       1.0       0.0         0
GR   146.10    10000.    146.10    10011.    135.10    10044.    135.10    10052.    124.20    10068.
GR   124.20    10382.    121.20    10388.    121.20    10788.    124.20    10794.    124.20    10951.
GR   146.10    10987.    146.10    11000.

X1    20400       10   10020.0   10987.0     200.0     200.0     200.0       1.0       0.0         0
GR   146.60    10000.    146.60    10020.    124.60    10066.    124.60    10325.    121.60    10331.
GR   121.60    10731.    124.60    10737.    124.60    10938.    146.60    10987.    146.60    11000.

X1    20600       12   10010.0   10965.0     200.0     200.0     200.0       1.0       0.0         0
GR   147.10    10000.    147.10    10010.    136.10    10043.    136.10    10051.    125.10    10068.
GR   125.10    10276.    122.10    10282.    122.10    10682.    125.10    10688.    125.10    10932.
GR   147.10    10965.    147.10    10979.

X1    20782       14   10012.0   10988.0     178.0     178.0     178.0       1.0       0.0         0
GR   147.67    10000.    147.67    10012.    136.66    10045.    136.66    10053.    125.56    10069.
GR   125.56    10230.    122.50    10236.    122.50    10636.    125.56    10642.    125.56    10931.
GR   136.66    10947.    136.66    10955.    147.67    10988.    147.67    10999.
  Grade Control Str. No. 3

Grade Control Str. No. 3

X1    20800       14   10012.0   10988.0      18.0      18.0      18.0       1.0       0.0         0
GR   147.70    10000.    147.70    10012.    136.69    10045.    136.69    10053.    125.59    10069.
GR   125.59    10230.    122.53    10236.    122.53    10636.    125.59    10642.    125.59    10931.
GR   136.69    10947.    136.69    10955.    147.70    10988.    147.70    10999.

X1    21000       10   10032.0   10964.0     200.0     200.0     200.0       1.0       0.0         0
GR   148.20    10000.    148.20    10032.    125.94    10069.    125.94    10190.    122.86    10196.
GR   122.86    10596.    125.94    10602.    125.94    10931.    148.20    10964.    148.20    10999.

NC    0.050     0.050     0.035       0.3       0.5
  Priest Bridge (D/S)
Priest Bridge (D/S)

X1    21050       10   10032.0   10964.0      50.0      50.0      50.0       1.0       0.0         0
X3       10      0.0       0.0       0.0       0.0       0.0       0.0     157.0     157.0
GR    148.3  10000.0     148.3  10032.0     126.2   10069.0     126.2   10190.0     123.2   10196.0
GR    123.2  10596.0     126.2  10602.0     126.2   10931.0     148.3   10964.0     148.8   10999.0

SB     1.05      1.56       2.6    1000.0     861.8      42.0   24080.0       1.5     123.4     123.2
  Priest Bridge (U/S)
Priest Bridge (U/S)

X1    21150       10   10032.0   10964.0     100.0     100.0     100.0       1.0       0.0         0
X2      0.0      0.0         1     150.0     157.0       0.0         0       2.0       0.0
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X3       10       0.0       0.0       0.0       0.0       0.0       0.0     157.0     157.0
GR    148.5   10000.0     148.5   10032.0     126.4   10069.0     126.4   10190.0     123.4   10196.0
GR    123.4   10596.0     126.4   10602.0     126.4   10931.0     148.5   10964.0     148.5   10999.0

X1    21200        10   10035.0   10965.0      50.0      50.0      50.0       1.0       0.0         0
GR   148.90    10000.    148.90    10035.    126.20    10069.    126.20    10160.    123.19    10166.
GR   123.19    10566.    126.20    10572.    126.20    10931.    148.90    10965.    148.90    11000.

X1    21400        14   10011.0   10991.0     200.0     200.0     200.0       1.0       0.0         0
GR   149.60    10000.    149.60    10011.    137.86    10045.    137.86    10053.    126.56    10070.
GR   126.56    10133.    123.52    10139.    123.52    10539.    126.56    10545.    126.56    10932.
GR   137.86    10949.    137.86    10957.    149.60    10991.    149.60    11002.

X1    21600        10   10013.0   11006.0     200.0     200.0     200.0       1.0       0.0         0
GR   150.00    10000.    150.00    10013.    126.91    10078.    126.91    10119.    123.85    10125.
GR   123.85    10525.    126.91    10531.    126.91    10940.    150.50    11006.    150.50    11017.

X1    21800        14   10011.0   10991.0     200.0     200.0     200.0       1.0       0.0         0
GR   150.50    10000.    150.50    10011.    138.47    10045.    138.47    10053.    127.17    10070.
GR   127.17    10101.    124.18    10107.    124.18    10507.    127.17    10513.    127.17    10932.
GR   138.47    10949.    138.47    10957.    150.50    10991.    150.50    11002.

X1    22000        14   10011.0   10991.0     200.0     200.0     200.0       1.0       0.0         0
GR   151.00    10000.    151.00    10011.    138.82    10045.    138.82    10053.    127.52    10070.
GR   127.52    10104.    124.51    10110.    124.51    10510.    127.52    10516.    127.52    10932.
GR   138.82    10949.    138.82    10957.    151.00    10991.    151.00    11002.

X1    22200        14   10010.0   10990.0     200.0     200.0     200.0       1.0       0.0         0
GR   151.40    10000.    151.40    10010.    139.08    10044.    139.08    10052.    127.88    10069.
GR   127.88    10123.    124.84    10129.    124.84    10529.    127.88    10535.    127.88    10931.
GR   139.08    10948.    139.08    10956.    151.40    10990.    151.40    11000.

X1    22400        14   10010.0   10990.0     200.0     200.0     200.0       1.0       0.0         0
GR   151.90    10000.    151.90    10010.    139.44    10044.    139.44    10052.    128.24    10069.
GR   128.24    10160.    125.18    10166.    125.18    10566.    128.24    10572.    128.24    10931.
GR   139.44    10948.    139.44    10956.    151.90    10990.    151.90    11000.

X1    22600        14   10010.0   10990.0     200.0     200.0     200.0       1.0       0.0         0
GR   152.30    10000.    152.30    10010.    139.69    10044.    139.69    10052.    128.49    10069.
GR   128.49    10205.    125.51    10211.    125.51    10611.    128.49    10617.    128.49    10931.
GR   139.69    10948.    139.69    10956.    152.30    10990.    152.30    11000.

X1    22800        14   10010.0   10990.0     200.0     200.0     200.0       1.0       0.0         0
GR   152.80    10000.    152.80    10010.    140.05    10044.    140.05    10052.    128.85    10069.
GR   128.85    10260.    125.84    10266.    125.84    10666.    128.85    10672.    128.85    10931.
GR   140.05    10948.    140.05    10956.    152.80    10990.    152.80    11000.

X1    23000        14   10011.0   10989.0     200.0     200.0     200.0       1.0       0.0         0
GR   153.20    10000.    153.20    10011.    140.30    10045.    140.30    10053.    129.20    10069.
GR   129.20    10325.    126.70    10331.    126.70    10731.    129.20    10737.    129.20    10931.
GR   140.30    10947.    140.30    10955.    153.20    10989.    153.20    11000.
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X1    23200       14   10010.0   10990.0     200.0     200.0     200.0       1.0       0.0         0
GR   153.70    10000.    153.70    10010.    140.66    10044.    140.66    10052.    129.46    10069.
GR   129.46    10390.    126.50    10396.    126.50    10796.    129.46    10802.    129.46    10931.
GR   140.66    10948.    140.66    10956.    153.70    10990.    153.70    11000.

X1    23400       14   10011.0   10989.0     200.0     200.0     200.0       1.0       0.0         0
GR   154.10    10000.    154.10    10011.    140.92    10045.    140.92    10053.    129.82    10069.
GR   129.82    10440.    126.83    10446.    126.83    10846.    129.82    10852.    129.82    10931.
GR   140.92    10947.    140.92    10955.    154.10    10989.    154.10    11000.

X1    23600       14   10011.0   10989.0     200.0     200.0     200.0       1.0       0.0         0
GR   154.60    10000.    154.60    10011.    141.27    10045.    141.27    10053.    130.17    10069.
GR   130.17    10480.    127.16    10486.    127.16    10886.    130.17    10892.    130.17    10931.
GR   141.27    10947.    141.27    10955.    154.60    10989.    154.60    11000.

X1    23800       14   10011.0   10989.0     200.0     200.0     200.0       1.0       0.0         0
GR   155.00    10000.    155.00    10011.    141.53    10045.    141.53    10053.    130.53    10069.
GR   130.53    10500.    127.46    10506.    127.46    10906.    130.53    10912.    130.53    10931.
GR   141.53    10947.    141.53    10955.    155.00    10989.    155.00    11000.

X1    24000       14   10011.0   10989.0     200.0     200.0     200.0       1.0       0.0         0
GR   155.50    10000.    155.50    10011.    141.88    10045.    141.88    10053.    130.40    10069.
GR   130.40    10510.    127.82    10516.    127.82    10916.    130.40    10922.    130.40    10931.
GR   141.88    10947.    141.88    10955.    155.50    10989.    155.50    11000.

X1    24200       14   10011.0   10989.0     200.0     200.0     200.0       1.0       0.0         0
GR   155.90    10000.    155.90    10011.    142.14    10045.    142.14    10053.    130.40    10069.
GR   130.40    10507.    128.15    10513.    128.15    10913.    130.40    10919.    130.40    10931.
GR   142.14    10947.    142.14    10955.    155.90    10989.    155.90    11000.

X1    24400       10   10014.0   10981.0     200.0     200.0     200.0       1.0       0.0         0
GR   156.40    10000.    156.40    10014.    130.40    10066.    130.40    10487.    128.48    10493.
GR   128.48    10893.    130.40    10899.    130.40    10928.    156.40    10981.    156.40    10994.

X1    24600       10   10010.0   11004.0     200.0     200.0     200.0       1.0       0.0         0
GR   156.80    10000.    156.80    10010.    130.40    10076.    130.40    10465.    128.81    10471.
GR   128.81    10871.    130.40    10877.    130.40    10938.    156.80    11004.    156.80    11019.

X1    24800       14   10011.0   10989.0     200.0     200.0     200.0       1.0       0.0         0
GR   157.30    10000.    157.30    10011.    143.11    10045.    143.11    10053.    130.40    10069.
GR   130.40    10410.    129.14    10416.    129.14    10816.    130.40    10822.    130.40    10931.
GR   143.11    10947.    143.11    10955.    157.30    10989.    157.30    11000.

NC     0.05      0.05     0.035       0.0       0.0
  GCS #4
GCS #4

X1    24955       12     581.5    1500.0     155.0     155.0     155.0       1.0       0.0         0
X3        0      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
GR   154.75    505.00    154.60    520.00    142.10    557.50    141.86    581.50    132.40    609.88
GR   129.40   1022.00    132.40   1454.70    147.50   1500.00    147.65   1515.00    147.50   1517.00
GR   157.70   1548.00    157.85   1563.00
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X1    25115        13    598.50   1500.00     120.0     200.0     160.0       1.0       0.0         0
GR   154.91    522.00    154.91    573.00    142.40    574.50    142.40    598.50    132.53    626.94
GR   129.61   1082.00    132.61   1454.55    147.83   1500.00    147.83   1515.00    145.83   1521.00
GR   145.83   1568.00    155.04   1594.00    155.04   1609.00

X1    25315        13    611.50   1500.00     200.0     200.0     200.0       1.0       0.0         0
GR   155.41    535.00    155.41    550.00    142.90    587.50    142.90    611.50    132.74    640.63
GR   129.82   1141.00    132.82   1454.34    148.17   1500.00    148.32   1515.00    146.17   1521.00
GR   146.17   1611.00    155.44   1639.00    155.44   1654.00

X1    25515        13    621.50   1515.00     200.0     200.0     200.0       1.0       0.0         0
GR   155.91    545.00    155.91    560.00    143.40    597.50    143.40    621.50    132.96    651.29
GR   130.03   1190.00    133.03   1413.59    148.50   1460.00    148.50   1515.00    146.50   1521.00
GR   146.50   1660.00    155.83   1686.00    155.83   1701.00

X1    25715        13    629.50   1500.00     200.0     200.0     200.0       1.0       0.0         0
GR   156.41    553.00    156.41    568.00    143.90    605.50    143.66    629.50    133.50    659.98
GR   130.24   1225.00    133.50   1454.01    148.83   1500.00    148.83   1515.00    146.83   1521.00
GR   147.73   1701.83    156.22   1730.00    156.22   1745.00

X1    25915        13    627.50   1500.00     200.0     200.0     200.0       1.0       0.0         0
GR   156.91    551.00    156.91    566.00    144.40    603.50    144.40    627.50    133.38    658.64
GR   130.45   1247.00    133.45   1453.86    149.17   1500.00    149.17   1515.00    147.17   1521.00
GR   148.31   1748.00    156.63   1777.00    156.63   1792.00

X1    26115        13    623.50   1500.00     200.0     200.0     200.0       1.0       0.0         0
GR   157.41    547.00    157.41    562.00    144.90    599.50    144.90    623.50    133.60    655.15
GR   130.66   1255.00    133.66   1453.65    149.50   1500.00    149.50   1515.00    147.50   1521.00
GR   148.88   1796.00    157.04   1822.00    157.04   1837.00

X1    26273        13    611.43   1500.00     115.0     200.0     158.0       1.0       0.0         0
GR   157.69    535.31    157.69    550.24    145.19    587.55    145.19    611.43    133.72    643.13
GR   130.86   1243.75    133.86   1452.09    149.83   1500.00    149.83   1507.43    147.83   1513.40
GR   149.42   1830.74    157.47   1859.66    157.47   1874.58

NC      0.0       0.0       0.0       0.3       0.5
  SPRR Bridge (D/S) (COE Sta. 21.659)
SPRR Bridge (D/S) (COE Sta. 21.659)

X1    26395        13    599.49   1420.00      85.0     160.0     122.0       1.0       0.0         0
GR   157.90    523.37    157.90    538.30    145.40    575.61    145.40    599.49    133.81    630.71
GR   131.03    1233.8    134.03   1371.79    150.10   1420.00    150.10   1515.00    148.10   1521.00
GR   149.93   1886.52    157.79   1911.32    157.79   1926.32

QT        1       0.0
SB     1.48      1.56      2.67    1388.0     816.0      72.0   29800.0      10.7    131.58    131.55
X1    26413        13    598.49   1420.00      15.0      20.0      18.0       1.0       0.0         0
X2      0.0       0.0         1     161.0     165.0       0.0         0       2.0       0.0
GR   158.94    522.38    157.94    537.30    145.44    574.61    145.44    598.49    133.83    629.75
GR   131.05   1232.81    134.05   1371.76    150.13   1420.00    150.13   1515.00    148.13   1521.00
GR   149.96   1886.52    157.79   1911.40    157.79   1926.32
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NC     0.05      0.05     0.035       0.1       0.3
QT        1  215000.0
X1    26737        13    9290.0   10830.0     335.0     315.0     324.0       1.0       0.0         0
GR    167.0    9290.0     150.0    9370.0     145.0    9500.0     140.0    9620.0     140.0    9820.0
GR    137.7    9960.0     135.6   10120.0     135.6   10360.0     140.0   10550.0     145.0   10680.0
GR    150.0   10750.0     170.0   10830.0     175.0   10850.0
```

STATUS: Analyzing profile 1.

Contraction Coefficient (CCHV) .100

Expansion Coefficient (CEHV) .300

STATUS: Analyzing cross-section reach 10035.000.

Begin ADOT Channelization

Cross Section Number SECNO	Left Overbank Manning XNL	Channel Manning n XNCH	Right Overbank Manning XNR	Flow Depth DEPTH (ft)	Water Surface Elevation CWSEL (ft MSL)	Critical W. S. Elevation CRIWS (ft MSL)	Known W. S. Elevation WSELK (ft MSL)
Energy Gradient SLOPE (ft/ft)	Left Overbank Length XLOBL (ft)	Channel Length XLCH (ft)	Right Overbank Length XLOBR (ft)	Energy Gradient Elevation EG (ft MSL)	Weighted Velocity Head HV (ft)	Friction Energy Loss HL (ft)	Other Energy Loss OLOSS (ft)
Cummul-ative Volume VOL (acre-ft)	Left Overbank Area ALOB (sq ft)	Channel Area ACH (sq ft)	Right Overbank Area AROB (sq ft)	Bridge Deck Area CORAR (sq ft)	Left Bank Elevation LTBNK (ft MSL)	Right Bank Elevation RTBNK (ft MSL)	Number of Balance Trials ITRIAL
Total Flow Q (cfs)	Left Overbank Flow QLOB (cfs)	Channel Flow QCH (cfs)	Right Overbank Flow QROB (cfs)	Computed W. S. Top Width TOPWD (ft)	Left W. S. Station SSTA (ft)	Right W. S. Station ENDST (ft)	Number of Crit Dpth Trials IDC
Flow Travel Time TIME (hrs)	Left Overbank Velocity VLOB (ft/s)	Channel Mean Velocity VCH (ft/s)	Right Overbank Velocity VROB (ft/s)	Length Weighted Manning n WTN	Cummul. Surface Area TWA (acres)	Minimum C. S. Elevation ELMIN (ft MSL)	Number of Other Trials ICONT

10035.000	.000	.035	.000	21.95	119.15	.00	119.15
.001899	0	0	0	121.33	2.18	.00	.00
.00	0	17314	0	.00	122.00	125.00	0
205000	0	205000	0	1062.9	10026.04	11088.91	0
.00	.00	11.84	.00	.000	.0	97.20	0

STATUS: Analyzing cross-section reach 10200.000.

10200.000	.000	.035	.000	21.39	119.49	.00	.00
.001846	165	165	165	121.64	2.14	.31	.00
65.83	0	17445	0	.00	123.00	123.00	2
205000	0	205000	0	1059.4	10032.79	11092.21	0
.00	.00	11.75	.00	.000	4.0	98.10	0

STATUS: Analyzing cross-section reach 10400.000.

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
10400.000	.000	.035	.000	21.79	119.89	.00	.00
.001791	200	200	200	122.01	2.11	.36	.00
146.24	0	17581	0	.00	122.00	123.00	2
205000	0	205000	0	1056.2	10039.33	11095.58	0
.01	.00	11.66	.00	.000	8.9	98.10	0

STATUS: Analyzing cross-section reach 10600.000.

10600.000	.000	.035	.000	21.77	120.27	.00	.00
.001775	200	200	200	122.36	2.10	.36	.00
227.09	0	17635	0	.00	123.00	124.00	0
205000	0	205000	0	1058.1	10031.55	11089.61	0
.01	.00	11.62	.00	.000	13.7	98.50	0

STATUS: Analyzing cross-section reach 10800.000.

10800.000	.000	.035	.000	21.60	120.60	.00	.00
.001840	200	200	200	122.74	2.14	.36	.01
307.62	0	17447	0	.00	123.00	124.00	2
205000	0	205000	0	1057.0	10034.94	11091.99	0
.02	.00	11.75	.00	.000	18.6	99.00	0

STATUS: Analyzing cross-section reach 11000.000.

11000.000	.000	.035	.000	21.57	121.07	.00	.00
.001692	200	200	200	123.10	2.03	.35	.01
388.83	0	17927	0	.00	123.00	124.00	2
205000	0	205000	0	1062.4	10026.60	11088.97	0
.02	.00	11.43	.00	.000	23.5	99.50	0

STATUS: Analyzing cross-section reach 11200.000.

11200.000	.000	.035	.000	21.47	121.47	.00	.00
.001595	200	200	200	123.44	1.97	.33	.01
471.80	0	18212	0	.00	123.00	126.00	2
205000	0	205000	0	1056.2	10033.06	11089.27	0
.03	.00	11.26	.00	.000	28.3	100.00	0

STATUS: Analyzing cross-section reach 11400.000.

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
11400.000	.000	.035	.000	21.48	121.88	.00	.00
.001494	200	200	200	123.76	1.88	.31	.01
556.40	0	18637	0	.00	124.00	126.00	2
205000	0	205000	0	1066.6	10034.25	11100.86	0
.03	.00	11.00	.00	.000	33.2	100.40	0

STATUS: Analyzing cross-section reach 11600.000.

11600.000	.000	.035	.000	21.42	122.32	.00	.00
.001312	200	200	200	124.05	1.73	.28	.02
643.79	0	19433	0	.00	124.00	127.50	2
205000	0	205000	0	1072.8	10033.67	11106.47	0
.04	.00	10.55	.00	.000	38.1	100.90	0

STATUS: Analyzing cross-section reach 11800.000.

11800.000	.000	.035	.000	21.13	122.53	.00	.00
.001433	200	200	200	124.35	1.82	.27	.03
731.84	0	18920	0	.00	125.00	127.90	2
205000	0	205000	0	1072.3	10041.59	11113.89	0
.04	.00	10.83	.00	.000	43.0	101.40	0

STATUS: Analyzing cross-section reach 12000.000.

12000.000	.000	.035	.000	21.02	122.82	.00	.00
.001423	200	200	200	124.64	1.82	.29	.00
818.77	0	18943	0	.00	127.00	128.40	1
205000	0	205000	0	1069.6	10043.62	11113.23	0
.05	.00	10.82	.00	.000	47.9	101.80	0

STATUS: Analyzing cross-section reach 12100.000.

12100.000	.000	.035	.000	20.83	122.93	.00	.00
.001481	100	100	100	124.80	1.87	.15	.02
861.95	0	18679	0	.00	127.00	128.60	2
205000	0	205000	0	1064.4	10043.63	11107.99	0
.05	.00	10.97	.00	.000	50.4	102.10	0

STATUS: Analyzing cross-section reach 12200.000.

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
12200.000	.000	.035	.000	20.77	123.07	.00	.00
.001493	100	100	100	124.95	1.88	.15	.00
904.78	0	18632	0	.00	126.00	128.80	0
205000	0	205000	0	1064.7	10041.14	11105.82	0
.05	.00	11.00	.00	.000	52.8	102.30	0

STATUS: Analyzing cross-section reach 12400.000.

12400.000	.000	.035	.000	20.48	123.28	.00	.00
.001626	200	200	200	125.31	2.03	.31	.04
988.74	0	17941	0	.00	129.00	129.20	2
205000	0	205000	0	1032.2	10059.08	11091.24	0
.06	.00	11.43	.00	.000	57.6	102.80	0

STATUS: Analyzing cross-section reach 12600.000.

12600.000	.000	.035	.000	20.43	123.63	.00	.00
.001571	200	200	200	125.63	2.00	.32	.00
1071.40	0	18063	0	.00	130.00	129.60	2
205000	0	205000	0	1020.9	10058.15	11079.09	0
.06	.00	11.35	.00	.000	62.4	103.20	0

STATUS: Analyzing cross-section reach 12800.000.

12800.000	.000	.035	.000	20.22	123.92	.00	.00
.001624	200	200	200	125.96	2.03	.32	.01
1153.98	0	17912	0	.00	131.00	130.00	2
205000	0	205000	0	1025.1	10086.51	11111.61	0
.07	.00	11.44	.00	.000	67.1	103.70	0

STATUS: Analyzing cross-section reach 13000.000.

13000.000	.000	.035	.000	20.04	124.24	.00	.00
.001645	200	200	200	126.29	2.06	.33	.01
1236.01	0	17816	0	.00	131.00	130.50	0
205000	0	205000	0	1020.9	10075.31	11096.23	0
.07	.00	11.51	.00	.000	71.8	104.20	0

STATUS: Analyzing cross-section reach 13200.000.

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
13200.000	.000	.035	.000	19.84	124.54	.00	.00
.001708	200	200	200	126.64	2.10	.34	.01
1317.33	0	17607	0	.00	130.00	130.90	2
205000	0	205000	0	1019.9	10052.98	11072.91	0
.08	.00	11.64	.00	.000	76.4	104.70	0

STATUS: Analyzing cross-section reach 13400.000.

13400.000	.000	.035	.000	19.77	124.87	.00	.00
.001729	200	200	200	126.99	2.12	.34	.00
1398.02	0	17542	0	.00	130.00	131.30	0
205000	0	205000	0	1020.0	10052.69	11072.72	0
.08	.00	11.69	.00	.000	81.1	105.10	0

STATUS: Analyzing cross-section reach 13600.000.

13600.000	.000	.035	.000	19.57	125.17	.00	.00
.001827	200	200	200	127.37	2.21	.36	.03
1477.79	0	17202	0	.00	130.00	131.80	2
205000	0	204999	0	1012.0	10055.14	11067.10	0
.09	.00	11.92	.00	.000	85.8	105.60	0

STATUS: Analyzing cross-section reach 13800.000.

13800.000	.000	.035	.000	19.43	125.53	.00	.00
.001850	200	200	200	127.74	2.22	.37	.00
1556.68	0	17162	0	.00	130.00	132.20	0
205000	0	204999	0	1015.8	10045.18	11060.96	0
.09	.00	11.94	.00	.000	90.4	106.10	0

STATUS: Analyzing cross-section reach 14000.000.

14000.000	.000	.035	.000	19.44	125.94	.00	.00
.001806	200	200	200	128.11	2.17	.37	.00
1635.90	0	17345	0	.00	130.00	132.60	2
205000	0	205000	0	1024.3	10040.73	11065.03	0
.10	.00	11.82	.00	.000	95.1	106.50	0

STATUS: Analyzing cross-section reach 14200.000.

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
14200.000	.000	.035	.000	19.34	126.34	.00	.00
.001805	200	200	200	128.48	2.14	.36	.00
1715.81	0	17464	0	.00	133.00	133.00	2
205000	0	205000	0	1042.0	10030.99	11073.01	0
.10	.00	11.74	.00	.000	99.9	107.00	0

Contraction Coefficient (CCHV) .300

Expansion Coefficient (CEHV) .500

STATUS: Analyzing cross-section reach 14400.000.

14400.000	.000	.035	.000	19.18	126.68	.00	.00
.001845	200	200	200	128.87	2.19	.36	.03
1795.51	0	17252	0	.00	133.50	133.50	2
205000	0	205000	0	1027.1	10045.39	11072.53	0
.11	.00	11.88	.00	.000	104.6	107.50	0

Contraction Coefficient (CCHV) .300

Expansion Coefficient (CEHV) .500

STATUS: Analyzing cross-section reach 14665.000.

STATUS: (3470) Encroachment computation information follows:

Left Encroachment Station (ft, STENCL)	10036.00
Right Encroachment Station (ft, STENCR)	11068.00
Encroachment Method (TYPE)	1
Width or Percent Target	1032.000
Left Encroachment Elevation (ft, ELENCL)	147.00
Right Encroachment Elevation (ft, ELENCR)	147.00

14665.000	.000	.035	.000	18.93	127.13	.00	.00
.001917	265	265	265	129.40	2.27	.50	.04
1899.56	0	16956	0	.00	134.10	147.00	2
205000	0	204999	0	1011.3	10046.34	11057.66	0
.11	.00	12.09	.00	.000	110.8	108.20	0

STATUS: Analyzing cross-section reach 14785.000.

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
14785.000	.000	.035	.000	19.01	127.41	.00	.00
.001907	120	120	120	129.64	2.24	.23	.01
1946.44	0	17077	0	.00	134.30	134.30	2
205000	0	205000	0	1026.1	10031.68	11057.76	0
.11	.00	12.00	.00	.000	113.6	108.40	0

Contraction Coefficient (CCHV) .100

Expansion Coefficient (CEHV) .300

STATUS: Analyzing cross-section reach 15000.000.

15000.000	.000	.035	.000	18.91	127.81	.00	.00
.001961	215	215	215	130.06	2.25	.42	.01
2030.57	0	17013	0	.00	134.70	134.70	0
205000	0	205000	0	1038.7	10031.65	11070.35	0
.12	.00	12.05	.00	.000	118.7	108.90	0

Contraction Coefficient (CCHV) .100

Expansion Coefficient (CEHV) .300

STATUS: Analyzing cross-section reach 15200.000.

15200.000	.000	.035	.000	18.78	128.18	.00	.00
.002010	200	200	200	130.47	2.29	.40	.01
2108.38	0	16881	0	.00	135.20	135.20	1
205000	0	205000	0	1037.9	10032.03	11069.97	0
.12	.00	12.14	.00	.000	123.5	109.40	0

STATUS: Analyzing cross-section reach 15400.000.

15400.000	.000	.035	.000	18.78	128.58	.00	.00
.001992	200	200	200	130.88	2.30	.40	.00
2185.82	0	16847	0	.00	135.60	135.60	0
205000	0	205000	0	1025.1	10045.47	11070.58	0
.13	.00	12.17	.00	.000	128.2	109.80	0

Contraction Coefficient (CCHV) .300

Expansion Coefficient (CEHV) .500

STATUS: Analyzing cross-section reach 15586.000.

STATUS: (3470) Encroachment computation information follows:

Left Encroachment Station (ft, STENCL)	10035.00
Right Encroachment Station (ft, STENCR)	11091.00
Encroachment Method (TYPE)	1
Width or Percent Target	1056.000
Left Encroachment Elevation (ft, ELENCL)	145.40
Right Encroachment Elevation (ft, ELENCR)	145.40

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
15586.000	.000	.035	.000	18.58	128.88	.00	.00
.002175	186	186	186	131.35	2.47	.39	.09
2257.32	0	16643	0	.00	136.00	145.40	2
210000	0	210000	0	1024.6	10045.67	11070.28	0
.13	.00	12.62	.00	.000	132.6	110.30	0

STATUS: Special bridge analysis being performed.

BRIDGE DESCRIPTION :

Bridge Total Loss Coefficient (XKOR)		1.56
Bridge Opening Total Area (sq ft, BAREA)		26680.00
Bridge Opening Bottom Width (ft, BWC)		963.00
Bridge Opening Side Slope (SS)	1 :	1.50
Bridge Opening Upstream Invert (ft MSL, ELCHU)		110.50
Bridge Opening Downstream Invert (ft MSL, ELCHD)		110.30
Bridge Skew Factor (BSQ)		1.00
Roadway Length (ft, RDLEN)		200.00
Roadway Weir Flow Discharge Coefficient (COFQ)		2.60
Pier Width (ft, BWP)		48.00
Pier Loss Drag Coefficient (CMOM)		2.00
Pier Shape Coefficient (XK)		1.05

STATUS: Analyzing cross-section reach 15710.000.

STATUS: Class A low flow.

STATUS: (3420) Bridge computation results:

Bridge Water-Surface Elevation (ft MSL, WSBR)	128.69
Bridge Flow Velocity (ft/s, VBR)	12.18
Calculated Channel Area (sq ft, TRAPER)	17141.

BRIDGE ANALYSIS RESULTS :

Pressure Flow Energy Grade Line Elevation (ft MSL, EGPRS)	.00
Low Flow Energy Grade Line Elevation (ft MSL, EGLWC)	131.76
Low Flow Water Surface Drop Through Bridge (ft, H3)	.45
Total Weir Flow (cfs, QWEIR)	0.
Bridge Discharge as Orifice or Low Flow (cfs, QLOW)	210000.
Actual Bridge Opening Area (sq ft, BAREA)	26680.
Trapezoidal Approx. Opening Area less Pier Area (sq ft, TAREA)	25301.
Bridge Low Chord Elevation (ft MSL, ELLC)	137.00
Top of Roadway Elevation (ft MSL, ELTRD)	145.40
Roadway Weir Length (ft, WEIRLN)	.0

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
15710.000	.000	.035	.000	18.73	129.33	.00	.00
.002120	124	124	124	131.76	2.44	.41	.00
2304.88	0	16768	0	.00	136.20	136.20	0
210000	0	210000	0	1024.0	10031.62	11055.66	0
.14	.00	12.52	.00	.000	135.5	110.60	0

Contraction Coefficient (CCHV)	.100
Expansion Coefficient (CEHV)	.300

STATUS: Analyzing cross-section reach 16000.000.

16000.000	.000	.035	.000	18.64	129.94	.00	.00
.002185	290	290	290	132.39	2.45	.62	.00
2416.40	0	16735	0	.00	136.90	136.90	0
210000	0	210000	0	1041.7	10031.86	11073.57	0
.14	.00	12.55	.00	.000	142.4	111.30	0

Contraction Coefficient (CCHV)	.100
Expansion Coefficient (CEHV)	.300

STATUS: Analyzing cross-section reach 16200.000.

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
16200.000	.000	.035	.000	18.75	130.45	.00	.00
.002092	200	200	200	132.82	2.37	.43	.01
2493.81	0	16985	0	.00	137.30	137.30	2
210000	0	210000	0	1046.7	10038.49	11085.23	0
.15	.00	12.36	.00	.000	147.2	111.70	0

STATUS: Analyzing cross-section reach 16400.000.

16400.000	.000	.035	.000	18.63	130.83	.00	.00
.002176	200	200	200	133.27	2.44	.43	.02
2571.28	0	16757	0	.00	137.70	138.30	2
210000	0	210000	0	1040.6	10031.61	11072.25	0
.15	.00	12.53	.00	.000	152.0	112.20	0

STATUS: Analyzing cross-section reach 16600.000.

16600.000	.000	.035	.000	18.56	131.26	.00	.00
.002197	200	200	200	133.71	2.45	.44	.00
2648.14	0	16723	0	.00	138.10	138.70	0
210000	0	210000	0	1043.4	10030.91	11074.29	0
.16	.00	12.56	.00	.000	156.8	112.70	0

STATUS: Analyzing cross-section reach 16800.000.

16800.000	.000	.035	.000	18.50	131.70	.00	.00
.002216	200	200	200	134.15	2.46	.44	.00
2724.85	0	16693	0	.00	138.60	139.20	0
210000	0	210000	0	1045.5	10030.71	11076.21	0
.16	.00	12.58	.00	.000	161.6	113.20	0

STATUS: Analyzing cross-section reach 17000.000.

17000.000	.000	.035	.000	18.56	132.16	.00	.00
.002180	200	200	200	134.59	2.43	.44	.00
2801.71	0	16784	0	.00	139.00	139.60	2
210000	0	210000	0	1046.8	10031.51	11078.30	0
.16	.00	12.51	.00	.000	166.4	113.60	0

STATUS: Analyzing cross-section reach 17200.000.

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
17200.000	.000	.035	.000	18.49	132.59	.00	.00
.002208	200	200	200	135.04	2.45	.44	.01
2878.63	0	16721	0	.00	139.40	140.00	1
210000	0	210000	0	1046.9	10031.41	11078.35	0
.17	.00	12.56	.00	.000	171.2	114.10	0

STATUS: Analyzing cross-section reach 17400.000.

17400.000	.000	.035	.000	18.42	133.02	.00	.00
.002215	200	200	200	135.49	2.47	.44	.01
2955.23	0	16646	0	.00	139.80	140.40	1
210000	0	210000	0	1040.8	10030.33	11071.18	0
.17	.00	12.61	.00	.000	176.0	114.60	0

STATUS: Analyzing cross-section reach 17600.000.

17600.000	.000	.035	.000	18.44	133.44	.00	.00
.002228	200	200	200	135.94	2.50	.44	.01
3031.41	0	16539	0	.00	140.30	140.90	2
210000	0	210000	0	1027.0	10031.58	11058.60	0
.18	.00	12.70	.00	.000	180.7	115.00	0

STATUS: Analyzing cross-section reach 17800.000.

17800.000	.000	.035	.000	18.37	133.87	.00	.00
.002262	200	200	200	136.40	2.53	.45	.01
3107.14	0	16448	0	.00	140.70	141.30	1
210000	0	210000	0	1024.5	10031.47	11055.93	0
.18	.00	12.77	.00	.000	185.4	115.50	0

STATUS: Analyzing cross-section reach 18000.000.

18000.000	.000	.035	.000	18.30	134.30	.00	.00
.002302	200	200	200	136.87	2.56	.46	.01
3182.43	0	16349	0	.00	141.00	141.70	1
210000	0	210000	0	1022.7	10031.25	11053.93	0
.19	.00	12.84	.00	.000	190.1	116.00	0

STATUS: Analyzing cross-section reach 18200.000.

PROJECT TITLE : City of Tempe File Name: RSSRP1.HC2
PROJECT NUMBER : Channelized Salt River 9/04/1992

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
18200.000	.000	.035	.000	18.24	134.74	.00	.00
.002346	200	200	200	137.34	2.60	.46	.01
3257.23	0	16230	0	.00	141.50	142.10	1
210000	0	210000	0	1018.7	10031.25	11049.94	0
.19	.00	12.94	.00	.000	194.8	116.50	0

STATUS: Analyzing cross-section reach 18400.000.

18400.000	.000	.035	.000	18.39	135.29	.00	.00
.002247	200	200	200	137.81	2.51	.46	.01
3332.37	0	16502	0	.00	142.00	142.60	2
210000	0	210000	0	1030.7	10033.81	11064.55	0
.19	.00	12.73	.00	.000	199.5	116.90	0

STATUS: Analyzing cross-section reach 18600.000.

18600.000	.000	.035	.000	18.28	135.68	.00	.00
.002344	200	200	200	138.30	2.63	.46	.03
3407.33	0	16150	0	.00	142.40	143.00	2
210000	0	210000	0	1006.0	10032.98	11038.98	0
.20	.00	13.00	.00	.000	204.2	117.40	0

STATUS: Analyzing cross-section reach 18800.000.

18800.000	.000	.035	.000	18.21	136.11	.00	.00
.002432	200	200	200	138.80	2.69	.48	.02
3481.06	0	15964	0	.00	142.80	143.40	2
210000	0	210000	0	1003.9	10031.07	11034.98	0
.20	.00	13.15	.00	.000	208.8	117.90	0

STATUS: Analyzing cross-section reach 19000.000.

19000.000	.000	.035	.000	18.29	136.59	.00	.00
.002425	200	200	200	139.29	2.70	.49	.00
3554.29	0	15935	0	.00	143.20	143.80	0
210000	0	210000	0	997.3	10030.84	11028.10	0
.21	.00	13.18	.00	.000	213.4	118.30	0

STATUS: Analyzing cross-section reach 19200.000.

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
19200.000	.000	.035	.000	18.24	137.04	.00	.00
.002478	200	200	200	139.79	2.75	.49	.02
3627.11	0	15784	0	.00	143.70	144.30	2
210000	0	210000	0	989.4	10030.97	11020.36	0
.21	.00	13.30	.00	.000	218.0	118.80	0

STATUS: Analyzing cross-section reach 19400.000.

19400.000	.000	.035	.000	18.20	137.50	.00	.00
.002539	200	200	200	140.31	2.81	.50	.02
3699.19	0	15616	0	.00	144.10	144.70	2
210000	0	210000	0	981.3	10030.79	11012.08	0
.22	.00	13.45	.00	.000	222.5	119.30	0

STATUS: Analyzing cross-section reach 19600.000.

19600.000	.000	.035	.000	18.18	137.98	.00	.00
.002597	200	200	200	140.84	2.87	.51	.02
3770.53	0	15457	0	.00	144.50	145.10	2
210000	0	210000	0	972.6	10030.57	11003.14	0
.22	.00	13.59	.00	.000	227.0	119.80	0

STATUS: Analyzing cross-section reach 19800.000.

19800.000	.000	.035	.000	18.29	138.49	.00	.00
.002579	200	200	200	141.36	2.87	.52	.00
3841.45	0	15436	0	.00	145.00	145.60	0
210000	0	210000	0	964.0	10030.53	10994.53	0
.22	.00	13.60	.00	.000	231.4	120.20	0

STATUS: Analyzing cross-section reach 20000.000.

20000.000	.000	.035	.000	18.26	138.96	.00	.00
.002647	200	200	200	141.91	2.94	.52	.02
3911.90	0	15252	0	.00	145.60	145.60	2
210000	0	210000	0	954.1	10029.91	10984.00	0
.23	.00	13.77	.00	.000	235.8	120.70	0

STATUS: Analyzing cross-section reach 20200.000.

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
20200.000	.000	.035	.000	18.25	139.45	.00	.00
.002703	200	200	200	142.46	3.00	.53	.02
3981.58	0	15099	0	.00	146.10	146.10	2
210000	0	210000	0	945.1	10030.94	10976.08	0
.23	.00	13.91	.00	.000	240.2	121.20	0

STATUS: Analyzing cross-section reach 20400.000.

20400.000	.000	.035	.000	18.42	140.02	.00	.00
.002626	200	200	200	142.99	2.97	.53	.00
4051.10	0	15180	0	.00	146.60	146.60	2
210000	0	210000	0	938.6	10033.75	10972.35	0
.24	.00	13.83	.00	.000	244.5	121.60	0

STATUS: Analyzing cross-section reach 20600.000.

20600.000	.000	.035	.000	18.39	140.49	.00	.00
.002736	200	200	200	143.56	3.08	.54	.03
4120.20	0	14920	0	.00	147.10	147.10	2
210000	0	210000	0	925.2	10029.84	10955.08	0
.24	.00	14.07	.00	.000	248.8	122.10	0

STATUS: Analyzing cross-section reach 20782.000.

20782.000	.000	.035	.000	18.51	141.01	.00	.00
.002727	178	178	178	144.05	3.04	.49	.00
4181.34	0	15001	0	.00	147.67	147.67	2
210000	0	210000	0	936.1	10031.97	10968.03	0
.24	.00	14.00	.00	.000	252.6	122.50	0

STATUS: Analyzing cross-section reach 20800.000.

20800.000	.000	.035	.000	18.54	141.07	.00	.00
.002717	18	18	18	144.10	3.04	.05	.00
4187.54	0	15019	0	.00	147.70	147.70	0
210000	0	209999	0	936.2	10031.91	10968.09	0
.24	.00	13.98	.00	.000	253.0	122.53	0

STATUS: Analyzing cross-section reach 21000.000.

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
21000.000	.000	.035	.000	18.81	141.67	.00	.00
.002526	200	200	200	144.63	2.97	.52	.01
4256.90	0	15195	0	.00	148.20	148.20	2
210000	0	209999	0	911.5	10042.86	10954.31	0
.25	.00	13.82	.00	.000	257.2	122.86	0

Contraction Coefficient (CCHV) .300

Expansion Coefficient (CEHV) .500

STATUS: Analyzing cross-section reach 21050.000.

STATUS: (3495) Overbank area assumed noneffective.

Left Overbank Elevation (ft, XLBEL) 157.00
Right Overbank Elevation (ft, RBEL) 157.00

21050.000	.000	.035	.000	18.56	141.76	.00	.00
.002629	50	50	50	144.80	3.04	.13	.04
4274.24	0	15012	0	.00	148.30	148.30	2
210000	0	210000	0	911.3	10042.95	10954.23	0
.25	.00	13.99	.00	.000	258.3	123.20	0

STATUS: Special bridge analysis being performed.

BRIDGE DESCRIPTION :

Bridge Total Loss Coefficient (XKOR)		1.56
Bridge Opening Total Area (sq ft, BAREA)		24080.00
Bridge Opening Bottom Width (ft, BWC)		861.80
Bridge Opening Side Slope (SS)	1 :	1.50
Bridge Opening Upstream Invert (ft MSL, ELCHU)		123.40
Bridge Opening Downstream Invert (ft MSL, ELCHD)		123.20
Bridge Skew Factor (BSQ)		1.00
Roadway Length (ft, RDLEN)		1000.00
Roadway Weir Flow Discharge Coefficient (COFQ)		2.60
Pier Width (ft, BWP)		42.00
Pier Loss Drag Coefficient (CMOM)		2.00
Pier Shape Coefficient (XK)		1.05

STATUS: Analyzing cross-section reach 21150.000.

STATUS: Class A low flow.

STATUS: (3420) Bridge computation results:

Bridge Water-Surface Elevation (ft MSL, WSBR)	141.48
Bridge Flow Velocity (ft/s, VBR)	13.64
Calculated Channel Area (sq ft, TRAPER)	15312.

BRIDGE ANALYSIS RESULTS :

Pressure Flow Energy Grade Line Elevation (ft MSL, EGPRS)	.00
Low Flow Energy Grade Line Elevation (ft MSL, EGLWC)	145.27
Low Flow Water Surface Drop Through Bridge (ft, H3)	.63
Total Weir Flow (cfs, QWEIR)	0.
Bridge Discharge as Orifice or Low Flow (cfs, QLOW)	210000.
Actual Bridge Opening Area (sq ft, BAREA)	24080.
Trapezoidal Approx. Opening Area less Pier Area (sq ft, TAREA)	22868.
Bridge Low Chord Elevation (ft MSL, ELLC)	150.00
Top of Roadway Elevation (ft MSL, ELTRD)	157.00
Roadway Weir Length (ft, WEIRLN)	.0

STATUS: (3495) Overbank area assumed noneffective.

Left Overbank Elevation (ft, XLBEL)	157.00
Right Overbank Elevation (ft, RBEL)	157.00

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
21150.000	.000	.035	.000	18.99	142.39	.00	.00
.002418	100	100	100	145.27	2.89	.48	.00
4309.15	0	15404	0	.00	148.50	148.50	0
210000	0	210000	0	912.6	10042.23	10954.87	0
.25	.00	13.63	.00	.000	260.3	123.40	0

STATUS: Analyzing cross-section reach 21200.000.

21200.000	.000	.035	.000	19.53	142.72	.00	.00
.002187	50	50	50	145.44	2.72	.11	.05
4327.10	0	15873	0	.00	148.90	148.90	2
210000	0	210000	0	911.5	10044.25	10955.75	0
.25	.00	13.23	.00	.000	261.4	123.19	0

STATUS: Analyzing cross-section reach 21400.000.

PROJECT TITLE : City of Tempe File Name: RSSRP1.HC2
PROJECT NUMBER : Channelized Salt River 9/04/1992

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
21400.000	.000	.035	.000	19.78	143.30	.00	.00
.002128	200	200	200	145.90	2.60	.43	.03
4400.77	0	16213	0	.00	149.60	149.60	2
210000	0	210000	0	943.5	10029.25	10972.75	0
.26	.00	12.95	.00	.000	265.7	123.52	0

STATUS: Analyzing cross-section reach 21600.000.

21600.000	.000	.035	.000	20.05	143.90	.00	.00
.001958	200	200	200	146.36	2.46	.41	.04
4476.33	0	16700	0	.00	150.00	150.50	2
210000	0	210000	0	957.4	10030.16	10987.54	0
.26	.00	12.57	.00	.000	270.0	123.85	0

STATUS: Analyzing cross-section reach 21800.000.

21800.000	.000	.035	.000	20.09	144.27	.00	.00
.001998	200	200	200	146.78	2.50	.40	.02
4552.62	0	16534	0	.00	150.50	150.50	2
210000	0	210000	0	944.8	10028.60	10973.40	0
.27	.00	12.70	.00	.000	274.4	124.18	0

STATUS: Analyzing cross-section reach 22000.000.

22000.000	.000	.035	.000	20.19	144.70	.00	.00
.001966	200	200	200	147.18	2.48	.40	.01
4628.72	0	16614	0	.00	151.00	151.00	2
210000	0	210000	0	944.8	10028.58	10973.42	0
.27	.00	12.64	.00	.000	278.7	124.51	0

STATUS: Analyzing cross-section reach 22200.000.

22200.000	.000	.035	.000	20.27	145.11	.00	.00
.001944	200	200	200	147.58	2.46	.39	.01
4705.14	0	16673	0	.00	151.40	151.40	1
210000	0	210000	0	945.3	10027.37	10972.63	0
.27	.00	12.59	.00	.000	283.1	124.84	0

STATUS: Analyzing cross-section reach 22400.000.

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
22400.000	.000	.035	.000	20.34	145.52	.00	.00
.001924	200	200	200	147.97	2.45	.39	.00
4781.81	0	16725	0	.00	151.90	151.90	1
210000	0	210000	0	945.1	10027.43	10972.57	0
.28	.00	12.56	.00	.000	287.4	125.18	0

STATUS: Analyzing cross-section reach 22600.000.

22600.000	.000	.035	.000	20.45	145.96	.00	.00
.001869	200	200	200	148.36	2.40	.38	.01
4858.95	0	16875	0	.00	152.30	152.30	2
210000	0	210000	0	945.8	10027.10	10972.90	0
.28	.00	12.44	.00	.000	291.7	125.51	0

STATUS: Analyzing cross-section reach 22800.000.

22800.000	.000	.035	.000	20.50	146.34	.00	.00
.001858	200	200	200	148.74	2.40	.37	.00
4936.50	0	16905	0	.00	152.80	152.80	0
210000	0	210000	0	945.5	10027.24	10972.76	0
.29	.00	12.42	.00	.000	296.1	125.84	0

STATUS: Analyzing cross-section reach 23000.000.

23000.000	.000	.035	.000	19.99	146.69	.00	.00
.001937	200	200	200	149.15	2.46	.38	.03
5013.61	0	16680	0	.00	153.20	153.20	2
210000	0	209999	0	943.7	10028.17	10971.83	0
.29	.00	12.59	.00	.000	300.4	126.70	0

STATUS: Analyzing cross-section reach 23200.000.

23200.000	.000	.035	.000	20.73	147.23	.00	.00
.001772	200	200	200	149.56	2.33	.37	.04
5091.28	0	17152	0	.00	153.70	153.70	2
210000	0	210000	0	946.3	10026.87	10973.13	0
.30	.00	12.24	.00	.000	304.8	126.50	0

STATUS: Analyzing cross-section reach 23400.000.

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
23400.000	.000	.035	.000	20.75	147.58	.00	.00
.001770	200	200	200	149.91	2.33	.35	.00
5170.02	0	17147	0	.00	154.10	154.10	1
210000	0	210000	0	944.4	10027.78	10972.22	0
.30	.00	12.25	.00	.000	309.1	126.83	0

STATUS: Analyzing cross-section reach 23600.000.

23600.000	.000	.035	.000	20.78	147.94	.00	.00
.001768	200	200	200	150.27	2.33	.35	.00
5248.76	0	17149	0	.00	154.60	154.60	0
210000	0	210000	0	944.0	10027.99	10972.01	0
.31	.00	12.24	.00	.000	313.4	127.16	0

STATUS: Analyzing cross-section reach 23800.000.

23800.000	.000	.035	.000	20.84	148.30	.00	.00
.001760	200	200	200	150.62	2.32	.35	.00
5327.55	0	17174	0	.00	155.00	155.00	0
210000	0	210000	0	944.1	10027.93	10972.07	0
.31	.00	12.23	.00	.000	317.8	127.46	0

STATUS: Analyzing cross-section reach 24000.000.

24000.000	.000	.035	.000	20.93	148.75	.00	.00
.001654	200	200	200	150.99	2.24	.34	.03
5407.15	0	17499	0	.00	155.50	155.50	2
210000	0	210000	0	944.3	10027.84	10972.16	0
.31	.00	12.00	.00	.000	322.1	127.82	0

STATUS: Analyzing cross-section reach 24200.000.

24200.000	.000	.035	.000	21.00	149.15	.00	.00
.001587	200	200	200	151.33	2.18	.32	.02
5488.01	0	17721	0	.00	155.90	155.90	2
210000	0	210000	0	944.6	10027.68	10972.32	0
.32	.00	11.85	.00	.000	326.4	128.15	0

STATUS: Analyzing cross-section reach 24400.000.

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
24400.000	.000	.035	.000	21.07	149.55	.00	.00
.001484	200	200	200	151.66	2.11	.31	.02
5570.08	0	18029	0	.00	156.40	156.40	2
210000	0	210000	0	939.3	10027.70	10967.04	0
.32	.00	11.65	.00	.000	330.8	128.48	0

STATUS: Analyzing cross-section reach 24600.000.

24600.000	.000	.035	.000	21.16	149.97	.00	.00
.001405	200	200	200	151.98	2.01	.29	.03
5653.88	0	18473	0	.00	156.80	156.80	2
210000	0	210000	0	959.9	10027.07	10986.93	0
.33	.00	11.37	.00	.000	335.1	128.81	0

STATUS: Analyzing cross-section reach 24800.000.

24800.000	.000	.035	.000	21.09	150.23	.00	.00
.001433	200	200	200	152.28	2.05	.28	.02
5738.24	0	18274	0	.00	157.30	157.30	2
210000	0	210000	0	944.1	10027.93	10972.07	0
.33	.00	11.49	.00	.000	339.5	129.14	0

STATUS: Analyzing cross-section reach 24955.000.

24955.000	.050	.035	.050	20.97	150.37	.00	.00
.001619	155	155	155	152.62	2.24	.24	.10
5802.18	304	17298	60	.00	141.86	147.50	2
210000	1299	208568	131	993.0	532.68	1525.73	0
.34	4.28	12.06	2.18	.000	342.9	129.40	0

STATUS: Analyzing cross-section reach 25115.000.

25115.000	.050	.035	.050	20.99	150.60	.00	.00
.001664	120	160	200	152.91	2.30	.26	.03
5866.74	201	17003	321	.00	142.40	147.83	1
210000	975	208020	1004	1008.0	573.52	1581.50	0
.34	4.85	12.23	3.13	.000	346.6	129.61	0

STATUS: Analyzing cross-section reach 25315.000.

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
25315.000	.050	.035	.050	21.11	150.93	.00	.00
.001671	200	200	200	153.25	2.32	.33	.01
5947.50	289	16837	525	.00	142.90	148.17	0
210000	1225	207072	1701	1062.0	563.42	1625.38	0
.35	4.24	12.30	3.24	.000	351.4	129.82	0

STATUS: Analyzing cross-section reach 25515.000.

25515.000	.050	.035	.050	21.16	151.19	.00	.00
.001970	200	200	200	153.72	2.53	.36	.11
6027.06	277	16022	704	.00	143.40	148.50	2
210000	1255	206202	2542	1098.9	574.16	1673.06	0
.35	4.52	12.87	3.61	.000	356.3	130.03	0

STATUS: Analyzing cross-section reach 25715.000.

25715.000	.050	.035	.050	21.60	151.84	.00	.00
.001633	200	200	200	154.14	2.30	.36	.07
6107.35	288	16756	922	.00	143.66	148.83	2
210000	1209	205825	2964	1133.8	581.68	1715.48	0
.35	4.20	12.28	3.21	.000	361.5	130.24	0

STATUS: Analyzing cross-section reach 25915.000.

25915.000	.050	.035	.050	21.86	152.31	.00	.00
.001513	200	200	200	154.49	2.18	.31	.03
6191.19	283	17136	1137	.00	144.40	149.17	2
210000	1132	205326	3540	1182.1	579.79	1761.94	0
.36	4.00	11.98	3.11	.000	366.8	130.45	0

STATUS: Analyzing cross-section reach 26115.000.

26115.000	.050	.035	.050	22.04	152.70	.00	.00
.001452	200	200	200	154.81	2.11	.30	.02
6277.34	278	17356	1335	.00	144.90	149.50	2
210000	1079	204862	4057	1232.0	576.13	1808.16	0
.36	3.88	11.80	3.04	.000	372.3	130.66	0

STATUS: Analyzing cross-section reach 26273.000.

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
26273.000	.050	.035	.050	22.19	153.05	.00	.00
.001370	115	158	200	155.06	2.02	.22	.03
6348.20	279	17745	1476	.00	145.19	149.83	2
210000	1059	204613	4326	1279.7	564.09	1843.78	0
.37	3.79	11.53	2.93	.000	377.2	130.86	0

Contraction Coefficient (CCHV) .300

Expansion Coefficient (CEHV) .500

STATUS: Analyzing cross-section reach 26395.000.

26395.000	.050	.035	.050	22.02	153.05	.00	.00
.001646	85	122	160	155.43	2.38	.18	.18
6402.31	270	16224	1795	.00	145.40	150.10	2
210000	1104	203594	5300	1343.6	552.77	1896.37	0
.37	4.09	12.55	2.95	.000	381.1	131.03	0

STATUS: Special bridge analysis being performed.

BRIDGE DESCRIPTION :

Bridge Total Loss Coefficient (XKOR)		1.56
Bridge Opening Total Area (sq ft, BAREA)		29800.00
Bridge Opening Bottom Width (ft, BWC)		816.00
Bridge Opening Side Slope (SS)	1 :	10.70
Bridge Opening Upstream Invert (ft MSL, ELCHU)		131.58
Bridge Opening Downstream Invert (ft MSL, ELCHD)		131.55
Bridge Skew Factor (BSQ)		1.00
Roadway Length (ft, RDLEN)		1388.00
Roadway Weir Flow Discharge Coefficient (COFQ)		2.67
Pier Width (ft, BWP)		72.00
Pier Loss Drag Coefficient (CMOM)		2.00
Pier Shape Coefficient (XK)		1.48

STATUS: Analyzing cross-section reach 26413.000.

STATUS: Class A low flow.

STATUS: (3420) Bridge computation results:

Bridge Water-Surface Elevation (ft MSL, WSBR)	152.80
Bridge Flow Velocity (ft/s, VBR)	10.18
Calculated Channel Area (sq ft, TRAPER)	20606.

BRIDGE ANALYSIS RESULTS :

Pressure Flow Energy Grade Line Elevation (ft MSL, EGPRS)	.00
Low Flow Energy Grade Line Elevation (ft MSL, EGLWC)	156.12
Low Flow Water Surface Drop Through Bridge (ft, H3)	.97
Total Weir Flow (cfs, QWEIR)	0.
Bridge Discharge as Orifice or Low Flow (cfs, QLOW)	210000.
Actual Bridge Opening Area (sq ft, BAREA)	29800.
Trapezoidal Approx. Opening Area less Pier Area (sq ft, TAREA)	31150.
Bridge Low Chord Elevation (ft MSL, ELLC)	161.00
Top of Roadway Elevation (ft MSL, ELTRD)	165.00
Roadway Weir Length (ft, WEIRLN)	.0

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
26413.000	.050	.035	.050	22.97	154.02	.00	.00
.001380	15	18	20	156.12	2.10	.69	.00
6410.21	314	17020	2242	.00	145.44	150.13	0
210000	1256	201754	6988	1350.4	549.01	1899.41	0
.37	3.99	11.85	3.12	.000	381.7	131.05	0

Contraction Coefficient (CCHV)	.100
Expansion Coefficient (CEHV)	.300

STATUS: Analyzing cross-section reach 26737.000.

26737.000	.000	.035	.000	19.40	155.00	.00	.00
.001644	335	324	315	156.65	1.65	.49	.05
6560.42	0	20865	0	.00	167.00	170.00	2
215000	0	215000	0	1423.6	9346.43	10770.03	0
.38	.00	10.30	.00	.000	392.0	135.60	0

PROJECT TITLE : City of Tempe File Name: RSSRP1.HC2
PROJECT NUMBER : Channelized Salt River 9/04/1992

SPECIAL NOTE :

An asterisk (*) to the left of the cross-section number indicates a special note is present in the SUMMARY OF WARNING AND STATUS MESSAGES section.

SUMMARY PRINTOUT : City of Tempe File Name: RSSRP1.HC2
100 Year Floodplain with Levees
Channelized Salt River

Cross-Section Number SECNO	Minimum C. S. Elevation (ft MSL) ELMIN	Channel Reach Length (ft) XLCH	Discharge Flow (cfs) Q	Computed W. S. Elevation (ft MSL) CWSEL	Energy Gradient Elevation (ft MSL) EG	Cross-Section Area (sq ft) AREA	Water Surface Top Width (ft) TOPWID	Energy Gradient Slope * 10,000 10K*S
10035.000	97.20	.00	205000.00	119.15	121.33	17314.01	1062.88	18.99
10200.000	98.10	165.00	205000.00	119.49	121.64	17445.05	1059.42	18.46
10400.000	98.10	200.00	205000.00	119.89	122.01	17581.09	1056.25	17.91
10600.000	98.50	200.00	205000.00	120.27	122.36	17635.34	1058.06	17.75
10800.000	99.00	200.00	205000.00	120.60	122.74	17447.15	1057.05	18.40
11000.000	99.50	200.00	205000.00	121.07	123.10	17927.51	1062.37	16.92
11200.000	100.00	200.00	205000.00	121.47	123.44	18212.69	1056.21	15.95
11400.000	100.40	200.00	205000.00	121.88	123.76	18637.09	1066.61	14.94
11600.000	100.90	200.00	205000.00	122.32	124.05	19433.69	1072.80	13.12
11800.000	101.40	200.00	205000.00	122.53	124.35	18920.24	1072.30	14.33
12000.000	101.80	200.00	205000.00	122.82	124.64	18943.85	1069.61	14.23
12100.000	102.10	100.00	205000.00	122.93	124.80	18679.20	1064.35	14.81
12200.000	102.30	100.00	205000.00	123.07	124.95	18632.40	1064.68	14.93
12400.000	102.80	200.00	205000.00	123.28	125.31	17941.23	1032.16	16.26
12600.000	103.20	200.00	205000.00	123.63	125.63	18063.14	1020.94	15.71
12800.000	103.70	200.00	205000.00	123.92	125.96	17912.60	1025.10	16.24

Cross-Section Number SECNO	Minimum C. S. Elevation (ft MSL) ELMIN	Channel Reach Length (ft) XLCH	Discharge Flow (cfs) Q	Computed W. S. Elevation (ft MSL) CWSEL	Energy Gradient Elevation (ft MSL) EG	Cross-Section Area (sq ft) AREA	Water Surface Top Width (ft) TOPWID	Energy Gradient Slope * 10,000 10K*S
13000.000	104.20	200.00	205000.00	124.24	126.29	17816.38	1020.92	16.45
13200.000	104.70	200.00	205000.00	124.54	126.64	17607.76	1019.93	17.08
13400.000	105.10	200.00	205000.00	124.87	126.99	17542.72	1020.03	17.29
13600.000	105.60	200.00	205000.00	125.17	127.37	17202.11	1011.96	18.27
13800.000	106.10	200.00	205000.00	125.53	127.74	17162.28	1015.79	18.50
14000.000	106.50	200.00	205000.00	125.94	128.11	17345.37	1024.30	18.06
14200.000	107.00	200.00	205000.00	126.34	128.48	17464.47	1042.02	18.05
14400.000	107.50	200.00	205000.00	126.68	128.87	17252.69	1027.14	18.45
14665.000	108.20	265.00	205000.00	127.13	129.40	16956.32	1011.32	19.17
14785.000	108.40	120.00	205000.00	127.41	129.64	17077.15	1026.08	19.07
15000.000	108.90	215.00	205000.00	127.81	130.06	17013.39	1038.70	19.61
15200.000	109.40	200.00	205000.00	128.18	130.47	16881.46	1037.94	20.10
15400.000	109.80	200.00	205000.00	128.58	130.88	16847.52	1025.11	19.92
15586.000	110.30	186.00	210000.00	128.88	131.35	16643.55	1024.61	21.75
15710.000	110.60	124.00	210000.00	129.33	131.76	16768.83	1024.03	21.20
16000.000	111.30	290.00	210000.00	129.94	132.39	16735.23	1041.72	21.85
16200.000	111.70	200.00	210000.00	130.45	132.82	16985.12	1046.74	20.92
16400.000	112.20	200.00	210000.00	130.83	133.27	16757.54	1040.64	21.76
16600.000	112.70	200.00	210000.00	131.26	133.71	16723.38	1043.39	21.97
16800.000	113.20	200.00	210000.00	131.70	134.15	16693.41	1045.50	22.16
17000.000	113.60	200.00	210000.00	132.16	134.59	16784.68	1046.80	21.80
17200.000	114.10	200.00	210000.00	132.59	135.04	16721.03	1046.95	22.08

PROJECT TITLE : City of Tempe File Name: RSSRP1.HC2
PROJECT NUMBER : Channelized Salt River 9/04/1992

Cross-Section Number SECNO	Minimum C. S. Elevation (ft MSL) ELMIN	Channel Reach Length (ft) XLCH	Discharge Flow (cfs) Q	Computed W. S. Elevation (ft MSL) CWSEL	Energy Gradient Elevation (ft MSL) EG	Cross-Section Area (sq ft) AREA	Water Surface Top Width (ft) TOPWID	Energy Gradient Slope * 10,000 10K*S
17400.000	114.60	200.00	210000.00	133.02	135.49	16646.86	1040.85	22.15
17600.000	115.00	200.00	210000.00	133.44	135.94	16539.32	1027.01	22.28
17800.000	115.50	200.00	210000.00	133.87	136.40	16448.45	1024.46	22.62
18000.000	116.00	200.00	210000.00	134.30	136.87	16349.03	1022.68	23.02
18200.000	116.50	200.00	210000.00	134.74	137.34	16230.69	1018.70	23.46
18400.000	116.90	200.00	210000.00	135.29	137.81	16502.89	1030.74	22.47
18600.000	117.40	200.00	210000.00	135.68	138.30	16150.13	1006.00	23.44
18800.000	117.90	200.00	210000.00	136.11	138.80	15964.27	1003.92	24.32
19000.000	118.30	200.00	210000.00	136.59	139.29	15935.11	997.26	24.25
19200.000	118.80	200.00	210000.00	137.04	139.79	15784.13	989.39	24.78
19400.000	119.30	200.00	210000.00	137.50	140.31	15616.78	981.29	25.39
19600.000	119.80	200.00	210000.00	137.98	140.84	15457.26	972.57	25.97
19800.000	120.20	200.00	210000.00	138.49	141.36	15436.44	963.99	25.79
20000.000	120.70	200.00	210000.00	138.96	141.91	15252.74	954.08	26.47
20200.000	121.20	200.00	210000.00	139.45	142.46	15099.58	945.14	27.03
20400.000	121.60	200.00	210000.00	140.02	142.99	15180.24	938.60	26.26
20600.000	122.10	200.00	210000.00	140.49	143.56	14920.86	925.24	27.36
20782.000	122.50	178.00	210000.00	141.01	144.05	15001.94	936.07	27.27
20800.000	122.53	18.00	210000.00	141.07	144.10	15019.85	936.18	27.17
21000.000	122.86	200.00	210000.00	141.67	144.63	15195.05	911.45	25.26
21050.000	123.20	50.00	210000.00	141.76	144.80	15012.68	911.28	26.29
21150.000	123.40	100.00	210000.00	142.39	145.27	15404.56	912.64	24.18

PROJECT TITLE : City of Tempe File Name: RSSRP1.HC2
PROJECT NUMBER : Channelized Salt River 9/04/1992

Cross-Section Number SECNO	Minimum C. S. Elevation (ft MSL) ELMIN	Channel Reach Length (ft) XLCH	Discharge Flow (cfs) Q	Computed W. S. Elevation (ft MSL) CWSEL	Energy Gradient Elevation (ft MSL) EG	Cross-Section Area (sq ft) AREA	Water Surface Top Width (ft) TOPWID	Energy Gradient Slope * 10,000 10K*S
21200.000	123.19	50.00	210000.00	142.72	145.44	15873.11	911.49	21.87
21400.000	123.52	200.00	210000.00	143.30	145.90	16213.80	943.51	21.28
21600.000	123.85	200.00	210000.00	143.90	146.36	16700.48	957.38	19.58
21800.000	124.18	200.00	210000.00	144.27	146.78	16534.04	944.80	19.98
22000.000	124.51	200.00	210000.00	144.70	147.18	16614.57	944.83	19.66
22200.000	124.84	200.00	210000.00	145.11	147.58	16673.63	945.25	19.44
22400.000	125.18	200.00	210000.00	145.52	147.97	16725.65	945.14	19.24
22600.000	125.51	200.00	210000.00	145.96	148.36	16875.90	945.79	18.69
22800.000	125.84	200.00	210000.00	146.34	148.74	16905.09	945.53	18.58
23000.000	126.70	200.00	210000.00	146.69	149.15	16680.63	943.67	19.37
23200.000	126.50	200.00	210000.00	147.23	149.56	17152.43	946.27	17.72
23400.000	126.83	200.00	210000.00	147.58	149.91	17147.98	944.43	17.70
23600.000	127.16	200.00	210000.00	147.94	150.27	17149.88	944.02	17.68
23800.000	127.46	200.00	210000.00	148.30	150.62	17174.08	944.14	17.60
24000.000	127.82	200.00	210000.00	148.75	150.99	17499.29	944.31	16.54
24200.000	128.15	200.00	210000.00	149.15	151.33	17721.04	944.64	15.87
24400.000	128.48	200.00	210000.00	149.55	151.66	18029.57	939.35	14.84
24600.000	128.81	200.00	210000.00	149.97	151.98	18473.50	959.86	14.05
24800.000	129.14	200.00	210000.00	150.23	152.28	18274.34	944.13	14.33
24955.000	129.40	155.00	210000.00	150.37	152.62	17662.56	993.05	16.19
25115.000	129.61	160.00	210000.00	150.60	152.91	17525.50	1007.98	16.64
25315.000	129.82	200.00	210000.00	150.93	153.25	17651.96	1061.96	16.71

PROJECT TITLE : City of Tempe File Name: RSSRP1.HC2
PROJECT NUMBER : Channelized Salt River 9/04/1992

Cross-Section Number SECNO	Minimum C. S. Elevation (ft MSL) ELMIN	Channel Reach Length (ft) XLCH	Discharge Flow (cfs) Q	Computed W. S. Elevation (ft MSL) CWSEL	Energy Gradient Elevation (ft MSL) EG	Cross-Section Area (sq ft) AREA	Water Surface Top Width (ft) TOPWID	Energy Gradient Slope * 10,000 10K*S
25515.000	130.03	200.00	210000.00	151.19	153.72	17004.68	1098.91	19.70
25715.000	130.24	200.00	210000.00	151.84	154.14	17967.29	1133.80	16.33
25915.000	130.45	200.00	210000.00	152.31	154.49	18556.82	1182.15	15.13
26115.000	130.66	200.00	210000.00	152.70	154.81	18970.25	1232.03	14.52
26273.000	130.86	158.00	210000.00	153.05	155.06	19502.03	1279.68	13.70
26395.000	131.03	122.00	210000.00	153.05	155.43	18289.82	1343.60	16.46
26413.000	131.05	18.00	210000.00	154.02	156.12	19576.96	1350.40	13.80
26737.000	135.60	324.00	215000.00	155.00	156.65	20865.83	1423.60	16.44

SUMMARY OF WARNING AND STATUS MESSAGES :

No warning messages generated

END OF OUTPUT

Run #3

Reach:	SPRR Bridge to Price Road Mile 21.725 to 23.667
Source:	Corps of Engineers

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B O S S H E C - 2 (tm)
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Version : 3.00
Serial Number : 0010149.250

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PROGRAM ORIGIN :

Boss Hec-2 (tm) is an enhanced version of the U.S. Army Corps of Engineers Hydrologic Engineering Center HEC-2 program for water-surface profile computations. Program based upon the September 1990 version, updated on August 1991.

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PROJECT DESCRIPTION :

PROJECT TITLE : CORP OF ENGINEERS DATA
PROJECT NUMBER : SALT RIVER FLOOD INSUR. STUDY 1983-1984
DESCRIPTION : 100-YEAR FLOODPLAIN
ENGINEER : U.S. Army Corps of Engineers
DATE OF RUN : 9/04/1992
TIME OF RUN : 9:20 am

T1 SALT RIVER FLOOD INSUR. STUDY 1983-1984
T2 CORP OF ENGINEERS DATA
T3 100-YEAR FLOODPLAIN

JOB PARAMETERS :

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	2	0	0	0.0	0	0.0	215000.0	1155.0	

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	-1	0	0.0	0.0	0.0	0.0	0.0	-6.0	0.0	

USER-DEFINED SUMMARY TABLES (J3) :

	38	42	39	43	1	3	25	4	5	
NC	0.05	0.05	0.035	0.1	0.3					
X1	21.725	13	9290.0	10830.0	0.0	0.0	0.0	1.0	0.0	0
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	1163.0	1163.0	
GR	1167.0	9290.0	1150.0	9370.0	1145.0	9500.0	1140.0	9620.0	1140.0	9820.0
GR	1137.7	9960.0	1135.6	10120.0	1135.6	10360.0	1140.0	10550.0	1145.0	10680.0
GR	1150.0	10750.0	1170.0	10830.0	1175.0	10850.0				

Mill Avenue Bridge

Mill Avenue Bridge

X1	21.795	14	9300.0	11090.0	560.0	110.0	370.0	1.0	0.0	0
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	1169.0	1169.0	
GR	1174.0	9300.0	1155.0	9370.0	1150.0	9400.0	1145.0	9480.0	1140.0	9580.0
GR	1135.7	9860.0	1135.7	10300.0	1140.0	10550.0	1145.0	10650.0	1150.0	10750.0
GR	1155.0	10830.0	1160.0	10880.0	1170.0	11000.0	1175.0	11090.0		
SB	1.05	1.18	2.5	0.0	1460.0	63.0	44704.0	0.0	1137.0	1136.8
X1	21.809	0	0.0	0.0	70.0	70.0	70.0	1.0	0.0	0
X2	0.0	0.0	1	1169.0	1175.0	0.0	0	0.0	0.0	
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	1175.0	1175.0	
BT	-2	9300.0	1175.0	0.0	11090.0	1175.0	0.0			
NC	0.04	0.04	0.03	0.1	0.3					
X1	21.837	15	9400.0	10900.0	100.0	200.0	150.0	1.0	0.0	0
X3	10	0.0	0.0	9400.0	0.0	0.0	0.0	0.0	0.0	
GR	1165.0	8850.0	1160.0	9000.0	1155.0	9070.0	1150.0	9400.0	1145.0	9520.0
GR	1142.5	9660.0	1136.0	9810.0	1136.0	10380.0	1140.0	10530.0	1150.0	10600.0
GR	1155.0	10710.0	1155.0	10900.0	1151.0	11150.0	1160.0	11200.0	1175.0	11250.0

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NC      0.0       0.0       0.0       0.1       0.3
X1   21.937        18    9350.0   10480.0     330.0     860.0     528.0       1.0       0.0         0
X3       10       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
GR   1175.0    8560.0    1170.0    8720.0    1165.0    8770.0    1160.0    8950.0    1159.5    9020.0
GR   1155.0    9040.0    1150.0    9350.0    1145.0    9570.0    1140.0    9650.0    1138.0    9670.0
GR   1138.0    9740.0    1145.0    9800.0    1138.0    9870.0    1138.0   10470.0    1155.0   10480.0
GR   1156.0   11130.0    1162.0   11160.0    1175.0   11220.0

X1   22.037        19    9210.0   10540.0     470.0     565.0     528.0       1.0       0.0         0
X3       10       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
GR   1175.0    8570.0    1165.0    8800.0    1155.0    9100.0    1152.0    9150.0    1155.0    9210.0
GR   1150.0    9330.0    1145.0    9460.0    1140.0    9550.0    1145.0    9720.0    1150.0    9770.0
GR   1139.0    9850.0    1139.0   10270.0    1140.0   10290.0    1140.0   10480.0    1145.0   10520.0
GR   1155.0   10540.0    1155.0   10920.0    1162.0   10930.0    1175.0   11050.0

X1   22.137        17    9150.0   10550.0     510.0     540.0     528.0       1.0       0.0         0
X3       10       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
GR   1165.0    8820.0    1161.0    9150.0    1150.0    9210.0    1145.0    9270.0    1141.0    9400.0
GR   1145.0    9520.0    1145.0    9680.0    1155.0    9730.0    1145.0    9790.0    1140.0    9830.0
GR   1140.0   10230.0    1143.0   10400.0    1145.0   10520.0    1155.0   10550.0    1155.0   11000.0
GR   1160.0   11020.0    1175.0   11150.0

X1   22.237        15    8880.0   10550.0     520.0     535.0     528.0       1.0       0.0         0
X3       10       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
GR   1165.0    8770.0    1161.0    8880.0    1150.0    8990.0    1145.0    9030.0    1145.0    9500.0
GR   1150.0    9590.0    1157.0    9630.0    1141.0    9750.0    1141.0   10350.0    1141.0   10370.0
GR   1155.0   10550.0    1150.0   10970.0    1155.0   11300.0    1160.0   11340.0    1175.0   11520.0

X1   22.337        18    8950.0   10520.0     520.0     540.0     528.0       1.0       0.0         0
X3       10       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
GR   1165.0    8530.0    1160.0    8790.0    1155.0    8950.0    1150.0    9020.0    1147.0    9300.0
GR   1145.0    9480.0    1150.0    9530.0    1157.0    9590.0    1150.0    9640.0    1145.0    9690.0
GR   1142.0    9720.0    1142.0   10350.0    1150.0   10410.0    1155.0   10520.0    1156.5   10890.0
GR   1157.0   11250.0    1160.0   11320.0    1175.0   11520.0

X1   22.437        14    8970.0   10370.0     550.0     500.0     528.0       1.0       0.0         0
X3       10       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
GR   1165.0    8290.0    1160.0    8700.0    1155.0    8970.0    1150.0    9000.0    1149.0    9370.0
GR   1150.0    9520.0    1157.0    9590.0    1145.0    9670.0    1143.0    9710.0    1143.0   10320.0
GR   1160.0   10370.0    1161.5   10630.0    1160.0   11520.0    1165.0   11670.0

X1   22.537        25    8880.0   10420.0     540.0     510.0     528.0       1.0       0.0         0
X3       10       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
GR   1165.0    7050.0    1160.0    7150.0    1159.0    7380.0    1160.0    7600.0    1160.0    7900.0
GR   1159.0    8110.0    1160.0    8430.0    1161.0    8700.0    1160.0    8880.0    1155.0    9000.0
GR   1150.0    9020.0    1150.0    9270.0    1149.0    9350.0    1150.0    9430.0    1155.0    9580.0
GR   1158.0    9650.0    1150.0    9760.0    1144.0    9800.0    1144.0   10360.0    1160.0   10420.0
GR   1156.5   10800.0    1158.0   11370.0    1158.5   11930.0    1160.0   12300.0    1165.0   12350.0

NC      0.0       0.0       0.0       0.3       0.5
X1   22.637        20    8990.0   10500.0     510.0     540.0     528.0       1.0       0.0         0
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X3      10       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
GR  1165.0    6300.0    1161.0    6870.0    1161.5    7280.0    1160.0    8450.0    1161.5    8720.0
GR  1160.0    8850.0    1155.0    8990.0    1150.0    9100.0    1146.0    9250.0    1150.0    9340.0
GR  1150.0    9650.0    1145.0    9850.0    1145.0   10370.0    1155.0   10430.0    1158.0   10500.0
GR  1162.0   11450.0    1160.0   11620.0    1160.0   12230.0    1165.0   12480.0    1170.0   12570.0
  Rural Road Bridge

Rural Road Bridge

X1  22.662      16    9050.0   10480.0     130.0     130.0     130.0       1.0       0.0         0
X3      10       0.0       0.0       0.0       0.0       0.0       0.0    1165.0    1165.0
GR  1165.0    6770.0    1164.0    6930.0    1163.5    7490.0    1162.5    8000.0    1160.9    8560.0
GR  1165.0    8850.0    1172.0    9050.0    1145.5    9145.0    1145.5   10398.0    1172.0   10480.0
GR  1165.0   10690.0    1160.0   10950.0    1160.0   11340.0    1162.0   11590.0    1162.0   12300.0
GR  1165.0   12640.0

SB     1.2       1.6       2.5       0.0    1253.0     100.0   24000.0      0.45    1145.5    1145.4
X1  22.681         0       0.0       0.0     100.0     100.0     100.0       1.0       0.0         0
X2     0.0       0.0         1    1165.0    1163.0       0.0         0       0.0       0.0
X3      10       0.0       0.0       0.0       0.0       0.0       0.0    1160.9    1160.9
BT     -16    6770.0    1165.0       0.0    6930.0    1164.0       0.0    7490.0    1163.5       0.0
BT            8000.0    1162.5       0.0    8560.0    1160.9       0.0    8850.0    1165.0       0.0
BT            9050.0    1172.0       0.0    9051.0    1172.0    1165.0   10480.0    1172.0    1165.0
BT           10481.0    1172.0       0.0   10690.0    1165.0       0.0   10950.0    1160.0       0.0
BT           11340.0    1160.0       0.0   11590.0    1162.0       0.0   12300.0    1162.0       0.0
BT           12640.0    1165.0       0.0

X1  22.799      27    9050.0   10655.0     640.0     590.0     625.0       1.0       0.0         0
GR  1165.0    6760.0    1161.5    7440.0    1161.5    7441.0    1161.5    7442.0    1161.5    7443.0
GR  1162.5    8755.0    1160.0    8880.0    1160.5    8930.0    1160.0    9000.0    1160.0    9050.0
GR  1155.0    9065.0    1152.5    9330.0    1150.0    9500.0    1146.0    9620.0    1146.0   10430.0
GR  1150.0   10470.0    1160.0   10500.0    1162.5   10655.0    1160.0   10900.0    1157.0   10930.0
GR  1160.0   10950.0    1163.0   11450.0    1165.0   11750.0    1168.0   12200.0    1168.0   12650.0
GR  1170.0   12690.0    1173.5   12950.0

NC    0.05      0.05     0.035       0.1       0.3
X1  23.000      27    8725.0   10920.0    1040.0    1065.0    1060.0       1.0       0.0         0
X3      10       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
GR  1167.0    8500.0    1167.0    8501.0    1167.0    8502.0    1167.0    8503.0    1167.0    8504.0
GR  1165.0    8725.0    1164.0    8780.0    1160.0    8850.0    1160.0    9050.0    1155.0    9060.0
GR  1150.0    9110.0    1150.0    9295.0    1150.0    9490.0    1155.0    9940.0    1150.0   10045.0
GR  1147.0   10330.0    1150.0   10355.0    1155.0   10445.0    1155.0   10765.0    1160.0   10795.0
GR  1165.0   10820.0    1167.0   10920.0    1167.0   11260.0    1165.0   11500.0    1168.0   12040.0
GR  1170.0   12350.0    1174.0   12820.0

X1  23.199      22    9270.0   10810.0    1040.0    1060.0    1050.0       1.0       0.0         0
X3      10       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
GR  1167.0    8660.0    1165.0    8810.0    1164.0    8975.0    1165.0    9040.0    1165.0    9270.0
GR  1160.0    9320.0    1155.0    9340.0    1150.0    9380.0    1150.0    9480.0    1155.0    9660.0
GR  1155.0    9965.0    1153.0   10265.0    1155.0   10580.0    1160.0   10660.0    1165.0   10690.0
GR  1170.0   10810.0    1170.0   12000.0    1173.0   12250.0    1170.0   12460.0    1170.0   12550.0
GR  1175.0   12620.0    1178.0   12705.0
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X1   23.398       27    9315.0   10770.0    1175.0     915.0    1052.0       1.0       0.0         0
X3      10      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
GR   1171.0    8500.0   1170.0    8600.0   1170.0    9315.0    1165.0    9400.0    1160.0    9470.0
GR   1151.0    9610.0   1151.0    9810.0   1155.0    9925.0    1155.0   10130.0    1157.0   10290.0
GR   1155.0   10470.0   1155.0   10690.0   1160.0   10750.0    1165.0   10770.0    1165.0   10860.0
GR   1160.0   10920.0   1165.0   10955.0   1166.5   11050.0    1165.0   11130.0    1165.0   11190.0
GR   1170.0   11270.0   1173.0   11300.0   1170.0   11330.0    1171.0   11660.0    1173.0   11955.0
GR   1175.0   12235.0   1177.0   12410.0

X1   23.597       26    8920.0   11050.0    1047.0    1052.0    1050.0       1.0       0.0         0
X3      10      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
GR   1172.0    8245.0   1170.0    8580.0   1170.0    8775.0    1174.5    8920.0    1170.0    9005.0
GR   1165.0    9025.0   1165.0    9180.0   1166.0    9360.0    1165.0    9550.0    1160.0    9620.0
GR   1155.0    9640.0   1152.0    9710.0   1152.0   10135.0    1155.0   10260.0    1160.0   10390.0
GR   1162.0   10595.0   1164.5   10800.0   1165.0   10950.0    1170.0   11040.0    1173.0   11050.0
GR   1170.0   11060.0   1170.0   11450.0   1173.0   11790.0    1175.0   12050.0    1175.0   12310.0
GR   1176.0   12365.0
  McClintock Drive Bridge
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McClintock Drive Bridge

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X1   23.649        8    9320.0   10510.0     200.0     340.0     270.0       1.0       0.0         0
X3      10      0.0       0.0       0.0       0.0       0.0       0.0    1175.0    1175.0
GR   1173.0    8200.0   1170.0    8640.0   1182.0    9320.0    1150.0    9410.0    1150.0   10420.0
GR   1182.0   10510.0   1170.0   11370.0   1175.0   11970.0

SB    1.05       1.6       2.5       0.0    1044.0      90.0   25600.0       2.5    1150.1    1150.0
X1   23.658        0       0.0       0.0      45.0      45.0      45.0       1.0       0.0         0
X2     0.0      0.0         1    1175.0    1170.0       0.0         0       0.0       0.0
X3      10      0.0       0.0       0.0       0.0       0.0       0.0    1182.0    1182.0
BT      -7    8200.0    1173.0       0.0    8640.0    1170.0       0.0    9320.0    1182.0       0.0
BT            9320.0    1182.0    1175.0   10510.0    1182.0    1175.0   11370.0    1170.0       0.0
BT           11970.0    1175.0       0.0

X1   23.667        6    9320.0   10510.0      45.0      45.0      45.0       1.0       0.0         0
X3      10      0.0       0.0       0.0       0.0       0.0       0.0    1175.0    1175.0
GR   1173.0    8200.0   1170.0    8640.0   1182.0    9320.0    1150.1    9410.0    1150.1   10420.0
GR   1182.0   10510.0
```

STATUS: Analyzing profile 1.

Contraction Coefficient (CCHV) .100

Expansion Coefficient (CEHV) .300

STATUS: Analyzing cross-section reach 21.725.

STATUS: (3495) Overbank area assumed noneffective.

Left Overbank Elevation (ft, XLBEL) 1163.00
Right Overbank Elevation (ft, RBEL) 1163.00

Cross Section Number SECNO	Left Overbank Manning XNL	Channel Manning n XNCH	Right Overbank Manning XNR	Flow Depth DEPTH (ft)	Water Surface Elevation CWSEL (ft MSL)	Critical W. S. Elevation CRIWS (ft MSL)	Known W. S. Elevation WSELK (ft MSL)
Energy Gradient SLOPE (ft/ft)	Left Overbank Length XLOBL (ft)	Channel Length XLCH (ft)	Right Overbank Length XLOBR (ft)	Energy Gradient Elevation EG (ft MSL)	Weighted Velocity Head HV (ft)	Friction Energy Loss HL (ft)	Other Energy Loss OLOSS (ft)
Cummul-ative Volume VOL (acre-ft)	Left Overbank Area ALOB (sq ft)	Channel Area ACH (sq ft)	Right Overbank Area AROB (sq ft)	Bridge Deck Area CORAR (sq ft)	Left Bank Elevation LTBNK (ft MSL)	Right Bank Elevation RTBNK (ft MSL)	Number of Balance Trials ITRIAL
Total Flow Q (cfs)	Left Overbank Flow QLOB (cfs)	Channel Flow QCH (cfs)	Right Overbank Flow QROB (cfs)	Computed W. S. Top Width TOPWD (ft)	Left W. S. Station SSTA (ft)	Right W. S. Station ENDST (ft)	Number of Crit Dpth Trials IDC
Flow Travel Time TIME (hrs)	Left Overbank Velocity VLOB (ft/s)	Channel Mean Velocity VCH (ft/s)	Right Overbank Velocity VROB (ft/s)	Length Weighted Manning n WTN	Cummul. Surface Area TWA (acres)	Minimum C. S. Elevation ELMIN (ft MSL)	Number of Other Trials ICONT
21.725	.000	.035	.000	19.40	1155.00	.00	1155.00
.001647	0	0	0	1156.65	1.65	.00	.00
.00	0	20854	0	.00	1167.00	1170.00	0
215000	0	215000	0	1423.5	9346.47	10770.00	0
.00	.00	10.31	.00	.000	.0	1135.60	0

STATUS: Analyzing cross-section reach 21.795.

STATUS: (3495) Overbank area assumed noneffective.

Left Overbank Elevation (ft, XLBEL) 1169.00
Right Overbank Elevation (ft, RBEL) 1169.00

Mill Avenue Bridge

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
21.795	.000	.035	.000	20.14	1155.84	.00	.00
.001252	560	370	110	1157.21	1.36	.53	.03
186.02	0	22945	0	.00	1174.00	1175.00	2
215000	0	215000	0	1471.6	9366.89	10838.45	0
.01	.00	9.37	.00	.000	12.3	1135.70	0

STATUS: Special bridge analysis being performed.

BRIDGE DESCRIPTION :

Bridge Total Loss Coefficient (XKOR)		1.18
Bridge Opening Total Area (sq ft, BAREA)		44704.00
Bridge Opening Bottom Width (ft, BWC)		1460.00
Bridge Opening Side Slope (SS)	1 :	.00
Bridge Opening Upstream Invert (ft MSL, ELCHU)		1137.00
Bridge Opening Downstream Invert (ft MSL, ELCHD)		1136.80
Bridge Skew Factor (BSQ)		1.00
Roadway Length (ft, RDLEN)		.00
Roadway Weir Flow Discharge Coefficient (COFQ)		2.50
Pier Width (ft, BWP)		63.00
Pier Loss Drag Coefficient (CMOM)		2.00
Pier Shape Coefficient (XK)		1.05

STATUS: Analyzing cross-section reach 21.809.

STATUS: Class A low flow.

STATUS: (3420) Bridge computation results:

Bridge Water-Surface Elevation (ft MSL, WSBR)	1155.85
Bridge Flow Velocity (ft/s, VBR)	8.12
Calculated Channel Area (sq ft, TRAPER)	26331.

BRIDGE ANALYSIS RESULTS :

Pressure Flow Energy Grade Line Elevation (ft MSL, EGPRS)	.00
Low Flow Energy Grade Line Elevation (ft MSL, EGLWC)	1157.33
Low Flow Water Surface Drop Through Bridge (ft, H3)	.14
Total Weir Flow (cfs, QWEIR)	0.
Bridge Discharge as Orifice or Low Flow (cfs, QLOW)	215000.
Actual Bridge Opening Area (sq ft, BAREA)	44704.
Trapezoidal Approx. Opening Area less Pier Area (sq ft, TAREA)	44704.
Bridge Low Chord Elevation (ft MSL, ELLC)	1169.00
Top of Roadway Elevation (ft MSL, ELTRD)	1175.00
Roadway Weir Length (ft, WEIRLN)	.0

STATUS: (3495) Overbank area assumed noneffective.

Left Overbank Elevation (ft, XLBEL)	1175.00
Right Overbank Elevation (ft, RBEL)	1175.00

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
21.809	.000	.035	.000	20.29	1155.99	.00	.00
.001216	70	70	70	1157.33	1.34	.12	.00
223.06	0	23156	0	.00	1174.00	1175.00	0
215000	0	215000	0	1473.5	9366.36	10839.89	0
.01	.00	9.28	.00	.000	14.7	1135.70	0

Contraction Coefficient (CCHV) .100

Expansion Coefficient (CEHV) .300

STATUS: Analyzing cross-section reach 21.837.

STATUS: (3470) Encroachment computation information follows:

Left Encroachment Station (ft, STENCL)	9400.00
Right Encroachment Station (ft, STENCR)	11250.00
Encroachment Method (TYPE)	1
Width or Percent Target	-9400.000

21.837	.000	.030	.040	19.97	1155.97	.00	.00
.001319	100	150	200	1157.61	1.63	.19	.09
300.36	0	20653	812	.00	1150.00	1155.00	2
215000	0	212757	2242	1777.6	9400.00	11177.63	0
.02	.00	10.30	2.76	.000	20.4	1136.00	0

Contraction Coefficient (CCHV) .100

Expansion Coefficient (CEHV) .300

STATUS: Analyzing cross-section reach 21.937.

STATUS: (3301) The velocity head difference for current and previous cross-sections exceeded the allowable specified by HVINS.

21.937	.040	.030	.040	18.36	1156.36	.00	.00
.001473	330	528	860	1158.49	2.13	.74	.15
551.12	1200	17737	559	.00	1150.00	1155.00	2
215000	4203	210075	721	2097.8	9033.95	11131.80	0
.03	3.50	11.84	1.29	.000	46.7	1138.00	0

STATUS: Analyzing cross-section reach 22.037.

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
22.037	.040	.030	.040	18.48	1157.48	.00	.00
.001330	470	528	565	1159.26	1.78	.74	.03
796.07	530	19524	948	.00	1155.00	1155.00	2
215000	1635	211012	2351	1898.1	9025.47	10923.55	0
.04	3.08	10.81	2.48	.000	71.1	1139.00	0

STATUS: Analyzing cross-section reach 22.137.

STATUS: (3495) Overbank area assumed noneffective.

Left Overbank Elevation (ft, XLBEL) 1161.00
Right Overbank Elevation (ft, RBEL) 1155.00

22.137	.000	.030	.040	18.34	1158.34	.00	.00
.001184	510	528	540	1159.94	1.60	.66	.02
1057.26	0	20530	1525	.00	1161.00	1155.00	2
215000	0	210666	4333	1848.9	9164.51	11013.36	0
.06	.00	10.26	2.84	.000	93.8	1140.00	0

STATUS: Analyzing cross-section reach 22.237.

STATUS: (3301) The velocity head difference for current and previous cross-sections exceeded the allowable specified by HVINS.

STATUS: (3495) Overbank area assumed noneffective.

Left Overbank Elevation (ft, XLBEL) 1161.00
Right Overbank Elevation (ft, RBEL) 1155.00

22.237	.000	.030	.040	18.56	1159.56	.00	.00
.000765	520	528	535	1160.51	.95	.50	.07
1369.32	0	23964	5377	.00	1161.00	1155.00	2
215000	0	194827	20172	2442.1	8894.41	11336.48	0
.08	.00	8.13	3.75	.000	119.9	1141.00	0

STATUS: Analyzing cross-section reach 22.337.

22.337	.040	.030	.040	17.74	1159.74	.00	.00
.001182	520	528	540	1161.14	1.40	.50	.14
1695.58	359	21316	2637	.00	1155.00	1155.00	2
215000	814	206460	7725	2515.4	8798.42	11313.86	0
.09	2.27	9.69	2.93	.000	150.2	1142.00	0

STATUS: Analyzing cross-section reach 22.437.

STATUS: (3265) Divided flow.

STATUS: (3301) The velocity head difference for current and previous cross-sections exceeded the allowable specified by HVINS.

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
22.437	.040	.030	.040	17.02	1160.02	.00	.00
.001792	550	528	500	1162.10	2.08	.76	.20
1957.57	681	18328	0	.00	1155.00	1160.00	2
215000	1986	213013	0	1690.9	8698.05	11520.71	0
.11	2.91	11.62	.07	.000	175.5	1143.00	0

STATUS: Analyzing cross-section reach 22.537.

STATUS: (3301) The velocity head difference for current and previous cross-sections exceeded the allowable specified by HVINS.

22.537	.040	.030	.040	17.70	1161.70	.00	.00
.001328	540	528	510	1162.99	1.29	.81	.08
2248.73	3234	19237	6699	.00	1160.00	1160.00	3
215000	6778	186662	21558	5201.0	7116.01	12317.00	0
.12	2.10	9.70	3.22	.000	217.2	1144.00	0

Contraction Coefficient (CCHV) .300

Expansion Coefficient (CEHV) .500

STATUS: Analyzing cross-section reach 22.637.

22.637	.040	.030	.040	17.37	1162.37	.00	.00
.001012	510	528	540	1163.61	1.24	.61	.01
2603.97	3827	21534	4077	.00	1155.00	1158.00	2
215000	7193	199488	8317	5674.5	6674.20	12348.70	0
.14	1.88	9.26	2.04	.000	282.8	1145.00	0

STATUS: Analyzing cross-section reach 22.662.

STATUS: (3495) Overbank area assumed noneffective.

Left Overbank Elevation (ft, XLBEL) 1165.00
Right Overbank Elevation (ft, RBEL) 1165.00

Rural Road Bridge

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
22.662	.000	.030	.000	16.89	1162.39	.00	.00
.000945	130	130	130	1163.85	1.47	.13	.11
2680.90	0	22111	0	.00	1172.00	1172.00	2
215000	0	215000	0	1365.8	9084.46	10450.25	0
.14	.00	9.72	.00	.000	293.3	1145.50	0

STATUS: Special bridge analysis being performed.

BRIDGE DESCRIPTION :

Bridge Total Loss Coefficient (XKOR)		1.60
Bridge Opening Total Area (sq ft, BAREA)		24000.00
Bridge Opening Bottom Width (ft, BWC)		1253.00
Bridge Opening Side Slope (SS)	1 :	.45
Bridge Opening Upstream Invert (ft MSL, ELCHU)		1145.50
Bridge Opening Downstream Invert (ft MSL, ELCHD)		1145.40
Bridge Skew Factor (BSQ)		1.00
Roadway Length (ft, RDLEN)		.00
Roadway Weir Flow Discharge Coefficient (COFQ)		2.50
Pier Width (ft, BWP)		100.00
Pier Loss Drag Coefficient (CMOM)		2.00
Pier Shape Coefficient (XK)		1.20

STATUS: Analyzing cross-section reach 22.681.

STATUS: (6840) Flow is by weir and low flow.

STATUS: (3265) Divided flow.

STATUS: (3420) Bridge computation results:

Bridge Water-Surface Elevation (ft MSL, WSBR)	1162.67
Bridge Flow Velocity (ft/s, VBR)	9.47
Calculated Channel Area (sq ft, TRAPER)	19925.

BRIDGE ANALYSIS RESULTS :

Pressure Flow Energy Grade Line Elevation (ft MSL, EGPRS)	1165.00
Low Flow Energy Grade Line Elevation (ft MSL, EGLWC)	1164.06
Low Flow Water Surface Drop Through Bridge (ft, H3)	.28
Total Weir Flow (cfs, QWEIR)	26471.
Bridge Discharge as Orifice or Low Flow (cfs, QLOW)	189150.
Actual Bridge Opening Area (sq ft, BAREA)	24000.
Trapezoidal Approx. Opening Area less Pier Area (sq ft, TAREA)	22655.
Bridge Low Chord Elevation (ft MSL, ELLC)	1165.00
Top of Roadway Elevation (ft MSL, ELTRD)	1163.00
Roadway Weir Length (ft, WEIRLN)	3656.5

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
22.681	.040	.030	.040	17.24	1162.74	.00	.00
.000844	100	100	100	1164.06	1.32	.20	.00
2735.66	722	22604	2266	.00	1172.00	1172.00	2
215000	780	210516	3703	3762.5	7873.93	12384.68	0
.15	1.08	9.31	1.63	.000	299.2	1145.50	2

STATUS: Analyzing cross-section reach 22.799.

22.799	.040	.030	.040	17.33	1163.33	.00	.00
.001138	640	625	590	1164.68	1.34	.61	.01
3107.03	2880	21748	1677	.00	1160.00	1162.50	2
215000	5037	206331	3631	4416.5	7083.64	11500.13	0
.16	1.75	9.49	2.16	.000	357.3	1146.00	0

Contraction Coefficient (CCHV) .100

Expansion Coefficient (CEHV) .300

STATUS: Analyzing cross-section reach 23.000.

STATUS: (3495) Overbank area assumed noneffective.

Left Overbank Elevation (ft, XLBEL) 1165.00
Right Overbank Elevation (ft, RBEL) 1167.00

23.000	.000	.035	.000	17.91	1164.91	.00	.00
.001695	1040	1060	1065	1166.15	1.23	1.46	.01
3719.91	0	24111	0	.00	1165.00	1167.00	2
215000	0	215000	0	2089.5	8730.03	10819.54	0
.20	.00	8.92	.00	.000	436.1	1147.00	0

STATUS: Analyzing cross-section reach 23.199.

STATUS: (3301) The velocity head difference for current and previous cross-sections exceeded the allowable specified by HVINS.

STATUS: (3495) Overbank area assumed noneffective.

Left Overbank Elevation (ft, XLBEL) 1165.00
Right Overbank Elevation (ft, RBEL) 1170.00

23.199	.050	.035	.000	16.50	1166.50	.00	.00
.003182	1040	1050	1060	1168.86	2.37	2.38	.34
4228.05	888	17170	0	.00	1165.00	1170.00	2
215000	2096	212903	0	2028.4	8697.60	10725.97	0
.22	2.36	12.40	.00	.000	485.7	1150.00	0

STATUS: Analyzing cross-section reach 23.398.

STATUS: (3301) The velocity head difference for current and previous cross-sections exceeded the allowable specified by HVINS.

STATUS: (3495) Overbank area assumed noneffective.

Left Overbank Elevation (ft, XLBEL) 1170.00
Right Overbank Elevation (ft, RBEL) 1165.00

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
23.398	.000	.035	.050	18.78	1169.78	.00	.00
.001724	1175	1052	915	1171.35	1.56	2.40	.08
4715.98	0	20244	2299	.00	1170.00	1165.00	2
215000	0	206676	8323	1947.9	9318.66	11266.56	0
.25	.00	10.21	3.62	.000	533.7	1151.00	0

STATUS: Analyzing cross-section reach 23.597.

STATUS: (3495) Overbank area assumed noneffective.

Left Overbank Elevation (ft, XLBEL) 1174.50
Right Overbank Elevation (ft, RBEL) 1173.00

23.597	.000	.035	.000	19.93	1171.93	.00	.00
.001713	1047	1050	1052	1173.18	1.25	1.80	.03
5276.71	0	23976	0	.00	1174.50	1173.00	2
215000	0	214999	0	2078.0	8968.47	11046.45	0
.28	.00	8.97	.00	.000	582.2	1152.00	0

STATUS: Analyzing cross-section reach 23.649.

WARNING: (3302) Conveyance change is outside of acceptable range.

Upstream to Downstream Conveyance Ratio (KRATIO) 1.48

STATUS: (3495) Overbank area assumed noneffective.

Left Overbank Elevation (ft, XLBEL) 1175.00
Right Overbank Elevation (ft, RBEL) 1175.00

McClintock Drive Bridge

SECNO	XNL	XNCH	XNR	DEPTH	CWSEL	CRIWS	WSELK
SLOPE	XLOBL	XLCH	XLOBR	EG	HV	HL	OLOSS
VOL	ALOB	ACH	AROB	CORAR	LTBNK	RTBNK	ITRIAL
Q	QLOB	QCH	QROB	TOPWD	SSTA	ENDST	IDC
TIME	VLOB	VCH	VROB	WTN	TWA	ELMIN	ICONT
23.649	.000	.035	.000	22.22	1172.22	.00	.00
.000786	200	270	340	1173.49	1.26	.30	.00
5424.88	0	23832	0	.00	1182.00	1182.00	2
215000	0	215000	0	1135.0	9347.50	10482.50	0
.29	.00	9.02	.00	.000	592.2	1150.00	0

STATUS: Special bridge analysis being performed.

BRIDGE DESCRIPTION :

Bridge Total Loss Coefficient (XKOR)		1.60
Bridge Opening Total Area (sq ft, BAREA)		25600.00
Bridge Opening Bottom Width (ft, BWC)		1044.00
Bridge Opening Side Slope (SS)	1 :	2.50
Bridge Opening Upstream Invert (ft MSL, ELCHU)		1150.10
Bridge Opening Downstream Invert (ft MSL, ELCHD)		1150.00
Bridge Skew Factor (BSQ)		1.00
Roadway Length (ft, RDLEN)		.00
Roadway Weir Flow Discharge Coefficient (COFQ)		2.50
Pier Width (ft, BWP)		90.00
Pier Loss Drag Coefficient (CMOM)		2.00
Pier Shape Coefficient (XK)		1.05

STATUS: Analyzing cross-section reach 23.658.

STATUS: (6840) Flow is by weir and low flow.

STATUS: (3420) Bridge computation results:

Bridge Water-Surface Elevation (ft MSL, WSBR)	1172.42
Bridge Flow Velocity (ft/s, VBR)	9.18
Calculated Channel Area (sq ft, TRAPER)	22537.

BRIDGE ANALYSIS RESULTS :

Pressure Flow Energy Grade Line Elevation (ft MSL, EGPRS)	1175.00
Low Flow Energy Grade Line Elevation (ft MSL, EGLWC)	1173.73
Low Flow Water Surface Drop Through Bridge (ft, H3)	.19
Total Weir Flow (cfs, QWEIR)	9550.
Bridge Discharge as Orifice or Low Flow (cfs, QLOW)	207485.
Actual Bridge Opening Area (sq ft, BAREA)	25600.
Trapezoidal Approx. Opening Area less Pier Area (sq ft, TAREA)	25305.
Bridge Low Chord Elevation (ft MSL, ELLC)	1175.00
Top of Roadway Elevation (ft MSL, ELTRD)	1170.00
Roadway Weir Length (ft, WEIRLN)	1365.9

STATUS: (3495) Overbank area assumed noneffective.

Left Overbank Elevation (ft, XLBEL)	1182.00
Right Overbank Elevation (ft, RBEL)	1182.00

SECNO SLOPE VOL Q TIME	XNL XLOBL ALOB QLOB VLOB	XNCH XLCH ACH QCH VCH	XNR XLOBR AROB QROB VROB	DEPTH EG CORAR TOPWD WTN	CWSEL HV LTBNK SSTA TWA	CRIWS HL RTBNK ENDST ELMIN	WSELK OLOSS ITRIAL IDC ICONT
23.658	.000	.035	.000	22.50	1172.50	.00	.00
.000753	45	45	45	1173.73	1.23	.24	.00
5449.66	0	24152	0	.00	1182.00	1182.00	2
215000	0	215000	0	1136.6	9346.71	10483.29	0
.29	.00	8.90	.00	.000	593.4	1150.00	2

STATUS: Analyzing cross-section reach 23.667.

STATUS: (3495) Overbank area assumed noneffective.

Left Overbank Elevation (ft, XLBEL) 1175.00
Right Overbank Elevation (ft, RBEL) 1175.00

23.667	.000	.035	.000	22.43	1172.53	.00	.00
.000761	45	45	45	1173.76	1.24	.03	.00
5474.57	0	24076	0	.00	1182.00	1182.00	0
215000	0	215000	0	1136.6	9346.71	10483.29	0
.29	.00	8.93	.00	.000	594.5	1150.10	0

SPECIAL NOTE :

An asterisk (*) to the left of the cross-section number indicates a special note is present in the SUMMARY OF WARNING AND STATUS MESSAGES section.

SUMMARY PRINTOUT : CORP OF ENGINEERS DATA
100-YEAR FLOODPLAIN
SALT RIVER FLOOD INSUR. STUDY 1983-1984

Cross-Section Number SECNO	Minimum C. S. Elevation (ft MSL) ELMIN	Channel Reach Length (ft) XLCH	Discharge Flow (cfs) Q	Computed W. S. Elevation (ft MSL) CWSEL	Energy Gradient Elevation (ft MSL) EG	Cross-Section Area (sq ft) AREA	Water Surface Top Width (ft) TOPWID	Energy Gradient Slope * 10,000 10K*S
21.725	1135.60	.00	215000.00	1155.00	1156.65	20854.84	1423.53	16.47
21.795	1135.70	370.00	215000.00	1155.84	1157.21	22945.44	1471.57	12.52
21.809	1135.70	70.00	215000.00	1155.99	1157.33	23156.83	1473.53	12.16
21.837	1136.00	150.00	215000.00	1155.97	1157.61	21466.15	1777.63	13.19
21.937	1138.00	528.00	215000.00	1156.36	1158.49	19497.57	2097.85	14.73
22.037	1139.00	528.00	215000.00	1157.48	1159.26	21003.32	1898.08	13.30

	Cross-Section Number SECNO	Minimum C. S. Elevation (ft MSL) ELMIN	Channel Reach Length (ft) XLCH	Discharge Flow (cfs) Q	Computed W. S. Elevation (ft MSL) CWSEL	Energy Gradient Elevation (ft MSL) EG	Cross-Section Area (sq ft) AREA	Water Surface Top Width (ft) TOPWID	Energy Gradient Slope * 10,000 10K*S
	22.137	1140.00	528.00	215000.00	1158.34	1159.94	22055.55	1848.85	11.84
	22.237	1141.00	528.00	215000.00	1159.56	1160.51	29342.40	2442.07	7.65
	22.337	1142.00	528.00	215000.00	1159.74	1161.14	24313.87	2515.44	11.82
	22.437	1143.00	528.00	215000.00	1160.02	1162.10	19010.00	1690.92	17.92
	22.537	1144.00	528.00	215000.00	1161.70	1162.99	29171.19	5200.99	13.28
	22.637	1145.00	528.00	215000.00	1162.37	1163.61	29440.18	5674.50	10.12
	22.662	1145.50	130.00	215000.00	1162.39	1163.85	22111.23	1365.79	9.45
	22.681	1145.50	100.00	215000.00	1162.74	1164.06	25593.40	3762.46	8.44
	22.799	1146.00	625.00	215000.00	1163.33	1164.68	26306.96	4416.50	11.38
	23.000	1147.00	1060.00	215000.00	1164.91	1166.15	24111.21	2089.51	16.95
	23.199	1150.00	1050.00	215000.00	1166.50	1168.86	18058.65	2028.37	31.82
	23.398	1151.00	1052.00	215000.00	1169.78	1171.35	22544.02	1947.90	17.24
	23.597	1152.00	1050.00	215000.00	1171.93	1173.18	23976.17	2077.98	17.13
*	23.649	1150.00	270.00	215000.00	1172.22	1173.49	23832.86	1135.00	7.86
	23.658	1150.00	45.00	215000.00	1172.50	1173.73	24152.85	1136.58	7.53
	23.667	1150.10	45.00	215000.00	1172.53	1173.76	24076.55	1136.58	7.61

SUMMARY OF WARNING AND STATUS MESSAGES :

Section 23.649, profile 1, conveyance change outside acceptable range.

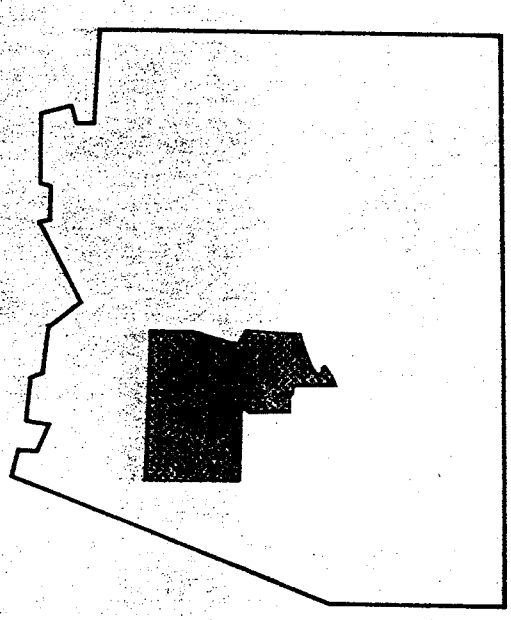
1 Warning and status message(s) generated

END OF OUTPUT

Item 5. Marked-up FIS profile

FLOOD INSURANCE STUDY

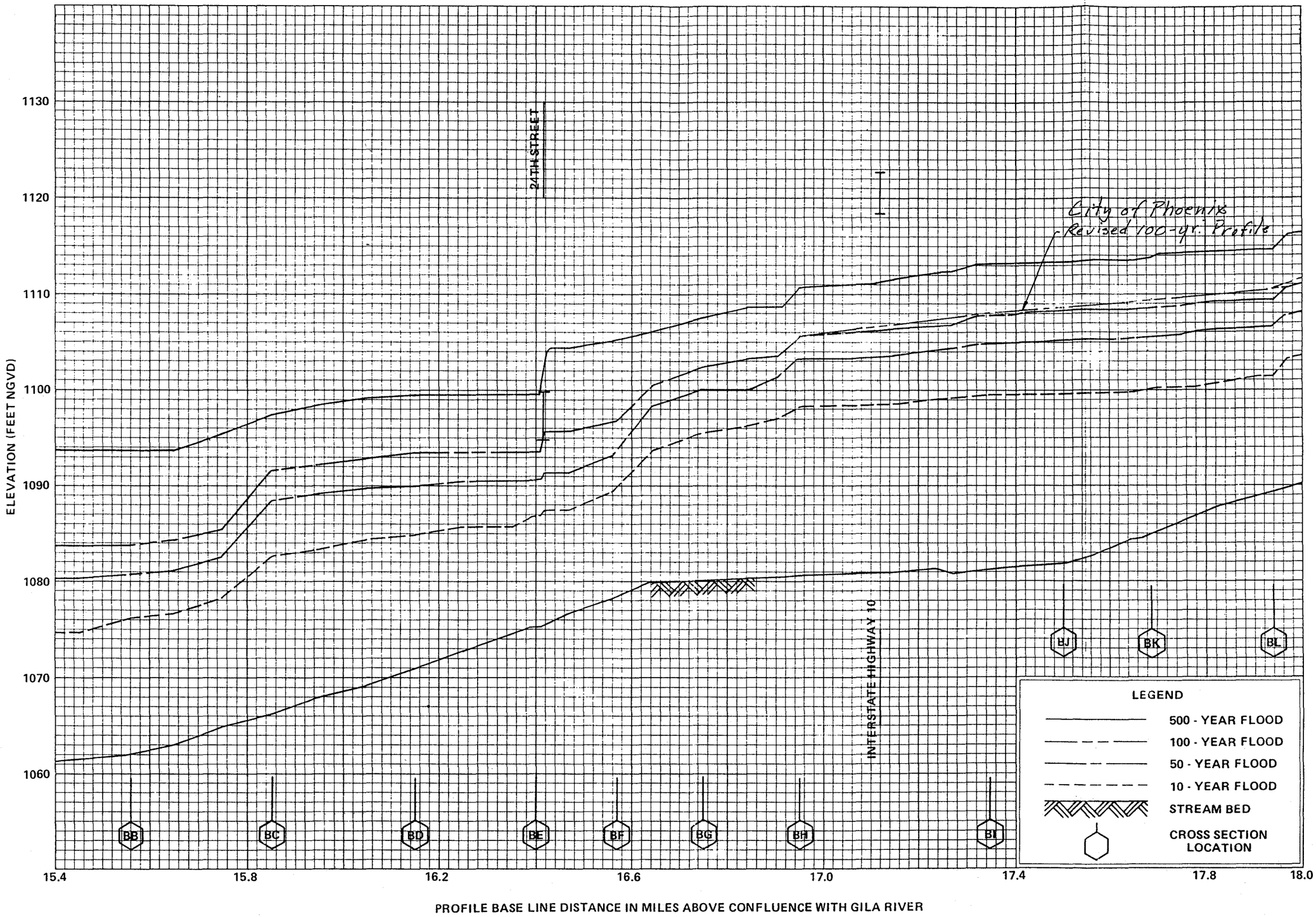
MARICOPA COUNTY, ARIZONA
AND INCORPORATED AREAS
VOLUME 2 OF 7



COMMUNITY NAME	COMMUNITY NUMBER
AVONDALE, CITY OF	040038
BUCKEYE, TOWN OF	040039
CAREFREE, TOWN OF	040126
CAVE CREEK, TOWN OF	040129
CHANDLER, CITY OF	040040
EL MIRAGE, TOWN OF	040041
GILA BEND, TOWN OF	040043
GILBERT, TOWN OF	040044
GLENDALE, CITY OF	040045
GOODYEAR, TOWN OF	040046
GUADALUPE, TOWN OF	040111
LITCHFIELD PARK, CITY OF	040128
MARICOPA COUNTY UNINCORPORATED AREAS	040037
MESA, CITY OF	040048
PARADISE VALLEY, TOWN OF	040049
PEORIA, CITY OF	040050
PHOENIX, CITY OF	040051
QUEEN CREEK, TOWN OF	040132
SCOTTSDALE, CITY OF	045012
SURPRISE, TOWN OF	045053
TEMPE, CITY OF	040054
TOLLESON, CITY OF	040055
WICKENBURG, TOWN OF	040056
YOUNGSTOWN, TOWN OF	040057

REVISED: SEPTEMBER 4, 1991

Federal Emergency Management Agency



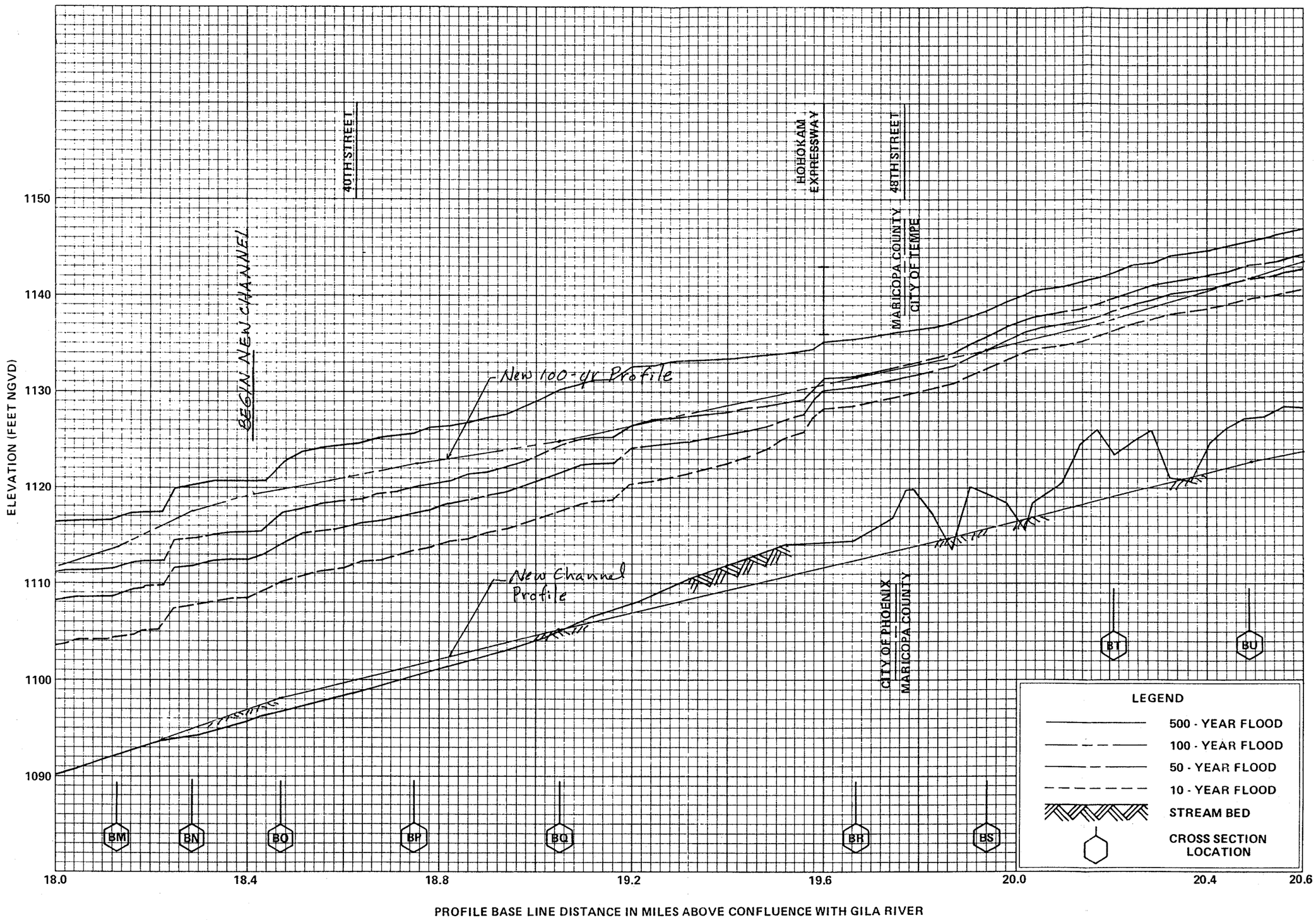
FLOOD PROFILES

SALT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

282P

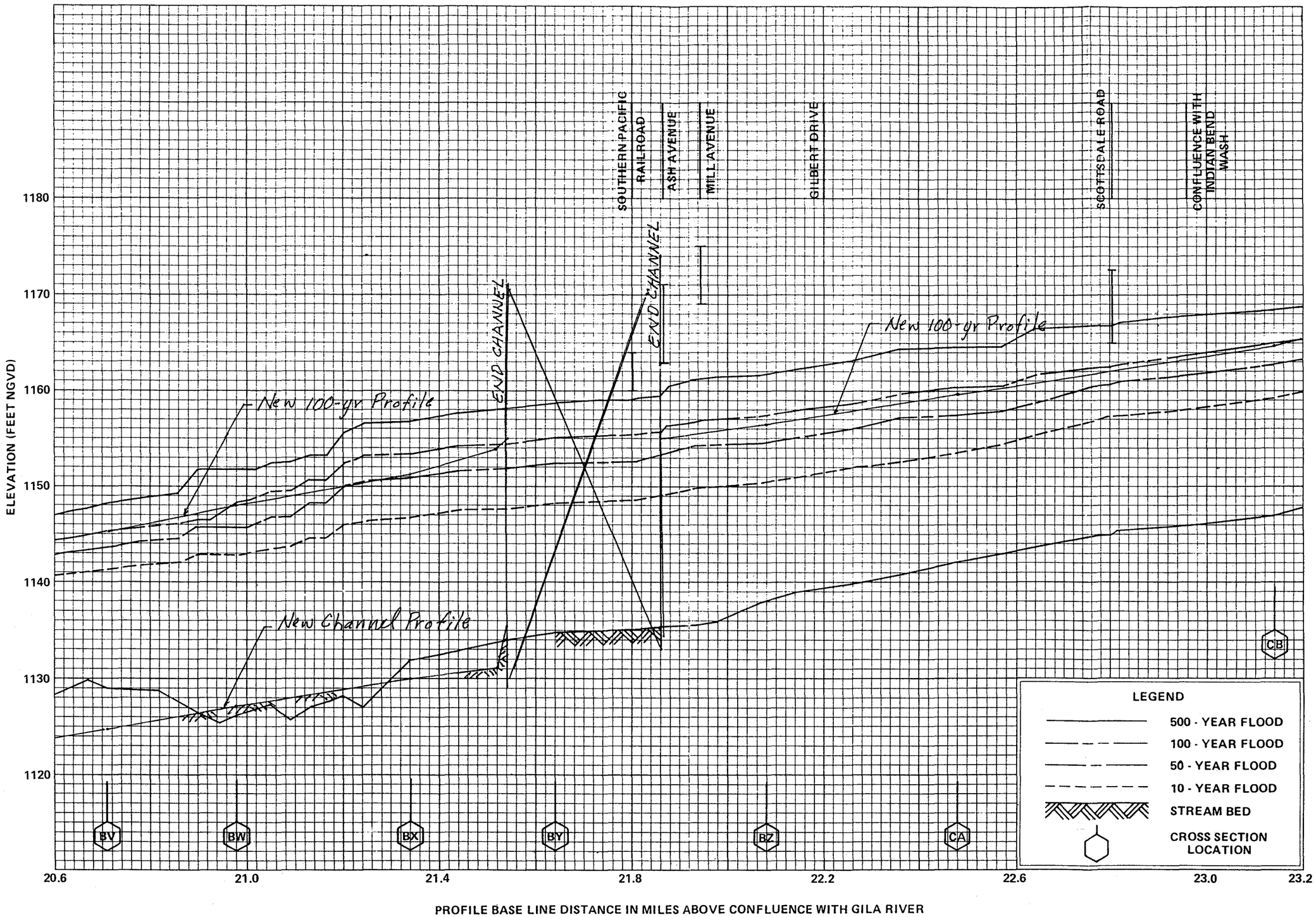


FLOOD PROFILES

SALT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS



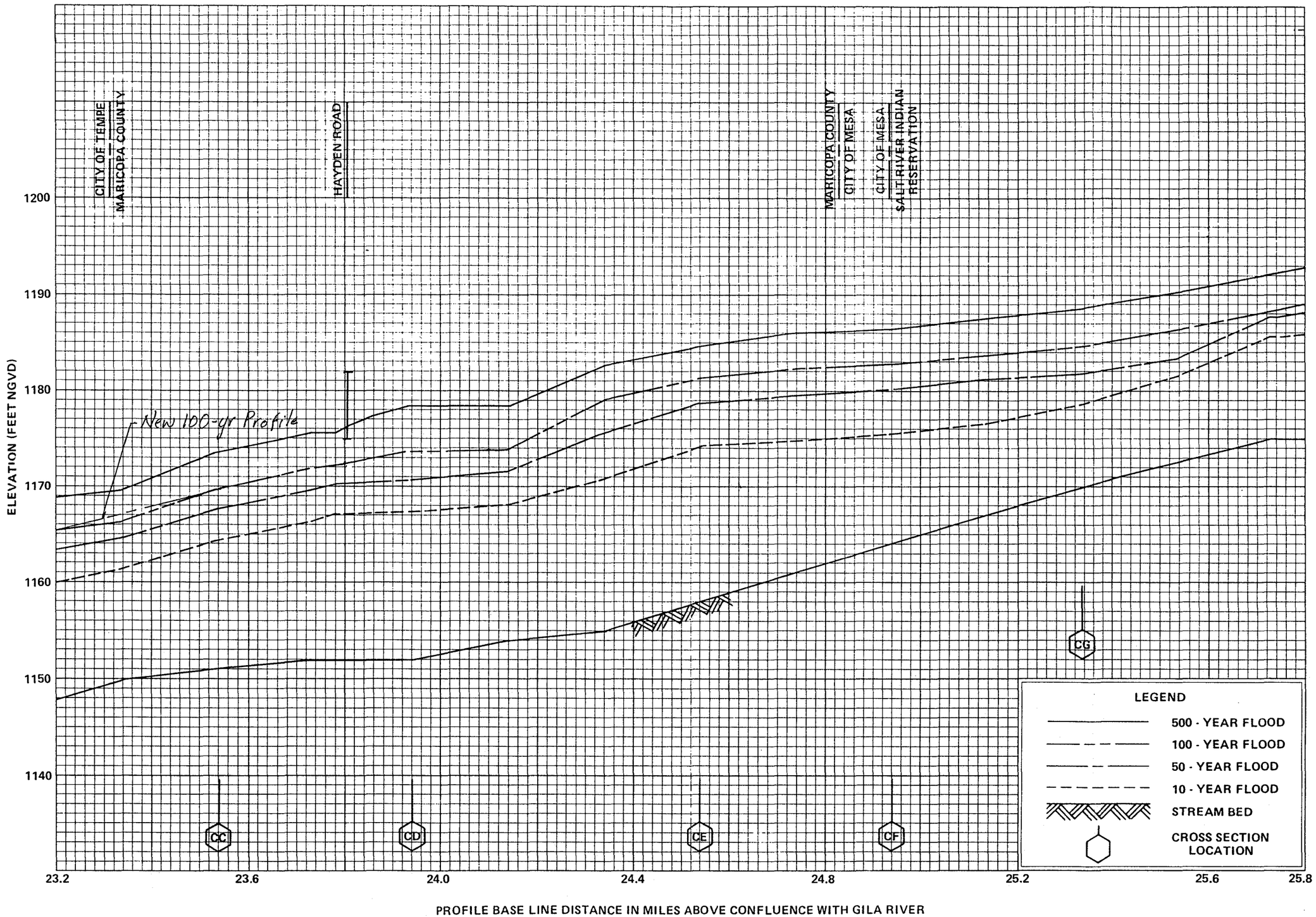
FLOOD PROFILES

SALT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

284P



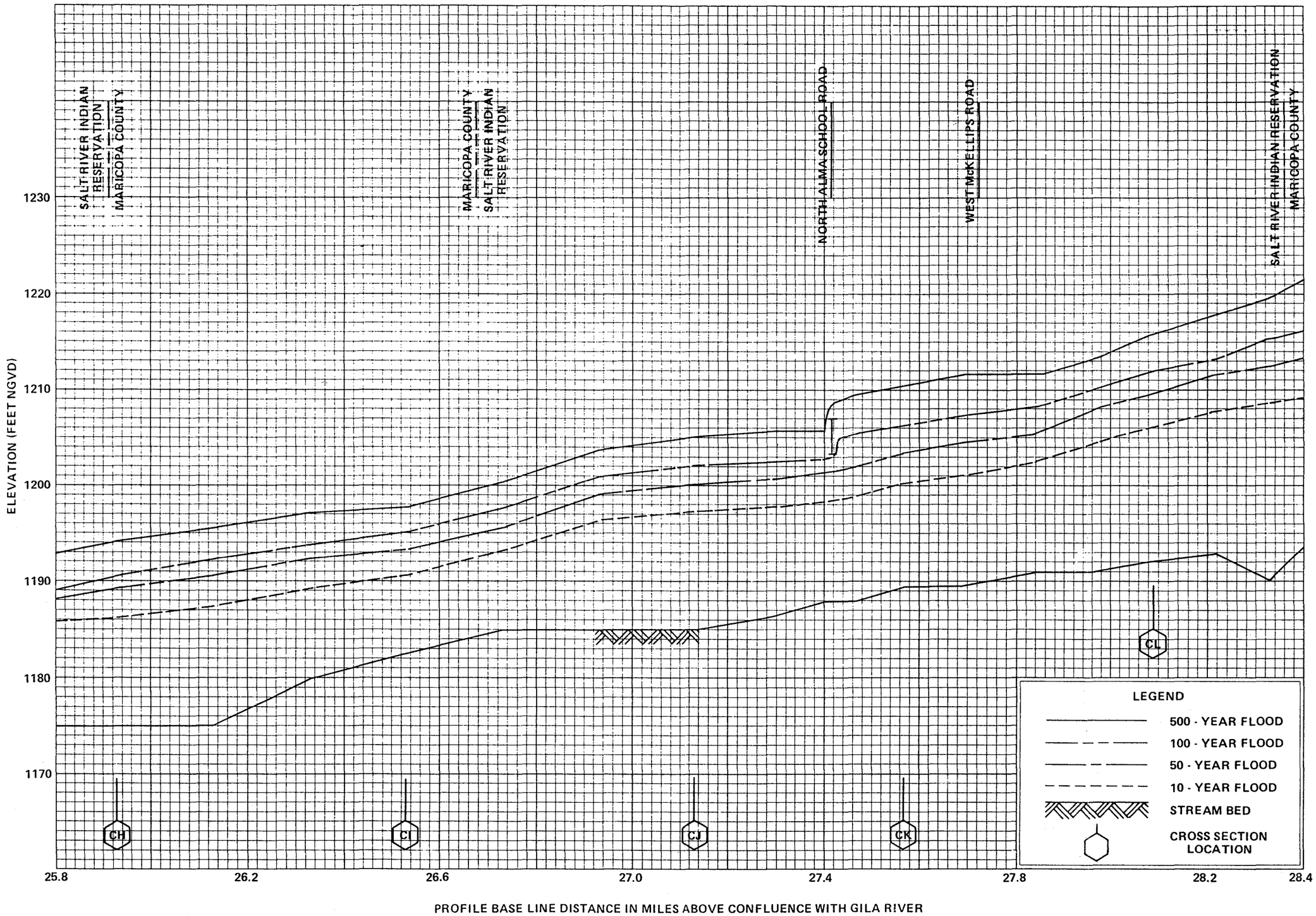
FLOOD PROFILES

SALT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

285P



FLOOD PROFILES

SALT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

Item 6b. RevisedTable 3
Levee Penetration Data

The profile of the roadway for the western levee penetration is set above the elevation of 100-year water surface elevation so that flood water is contained by the levee and roadway embankments. Between the levee penetrations, Rio Salado Parkway is located on a terraced area of channel which is set at the elevation of the 10-year flood stage.

The following tabulation summarizes design information for each of the levee penetrations.

Table 3
Levee Penetration Design Information

Location	Type	Size	Invert Elevation	Top of Levee Elevation	Rim Elev at Inlet
148+89±(NB)	RCBC	1-8'x4"	1109.7	1134.6	1135.0
175+26±(NB)	RCBC	3-16'x14'	1117.9	1140.6	1145.0*
209+70±(NB)	RCP	96"	1127.0	1147.9	1150.0
210+30±(SB)	RCP	96"	1128.8	1148.3	1149.8
218+16±(SB)	RCP	24"	1131.5	1150.5	1149.9
221+00±(NB)	RCP	36"	1140.1	1151.2	1149.3
222+12±(SB)	RCP	36"	1133.3	1151.4	1153.0
238+82±(NB)	RCP	102"	1132.9	1155.4	1154.0
410+00 (SB)	RDWY	--	1154.2**	1157.0	--
411+50 (SB)	RCP	72"	1135.0	1156.4	1154.0
14+00 (NB)	RCP	66"	1138.0	1158.1	1157.0

* ground elevation north of Grand Canal
** gutter flowline elevation

Levee Termination:

The project levees terminate at the abutment of the Southern Pacific Railroad bridge. At the south levee termination, the levee embankment ties directly to the existing approach embankment for the railroad bridge. At the north levee termination, the levee embankment is offset 120 feet from the railroad abutment. A supplemental embankment, constructed perpendicular to the levee (Station 14+00 NB), provides closure at the north levee termination.

City of Phoenix
STREET TRANSPORTATION DEPARTMENT

CITY OF TEMPE
ENGINEERING

July 15, 1992

Mr. James E. Bond, P.E.
Senior Civil Engineer
City of Tempe
P. O. Box 5002
Tempe, Arizona 85280

Dear Jim:

RE: CONDITIONAL LETTER OF MAP REVISION (CLOMR) SALT RIVER CHANNELIZATION, FEMA # 92-09-042R.

Thank you for the copy of the proposed revised FIRM, panel 2165. We assume that the areas to the south of the new channel will become a shaded X zone and no longer part of the Special Flood Hazard Area (SFHA). The areas above the channel will remain in a floodplain due to water back flowing from the Salt River through the Cross Cut Canal box culverts.

The purpose of this letter is to satisfy Item 4, on FEMA's letter dated June 12, 1992 concerning subject Conditional Letter of Map Revision. This is to confirm that the City of Phoenix is aware of this request for a Conditional Letter of Map Revision and has no objection to it. We are also aware of the proposed floodway revision, and have no objection to this revision.

If we can be of further assistance in this matter, please contact us at 262-4960.

Sincerely,

James H. Matteson, P.E.
Street Transportation Director

Paul E. Kienow, P.E.
Floodplain Management Engineer

JHM/PEK/aff/920715a

c: FEMA - (316 AD)
Mr. Van Skike
Mr. Carroll

125 East Washington Street, Phoenix, Arizona 85004 602-262-6284

City of Phoenix
STREET TRANSPORTATION DEPARTMENT

July 28, 1992

Mr. James E. Bond, P.E.
Senior Civil Engineer
City of Tempe
P. O. Box 5002
Tempe, Arizona 85280

Dear Jim:

RE: CONDITIONAL LETTER OF MAP REVISION FOR SALT RIVER CHANNELIZATION, FEMA # 92-09-042R

This is in response to your letter dated July 21, 1992 concerning subject Conditional Letter of Map Revision. The City of Phoenix does not have any funds budgeted for the delineation or redelineation of floodplains. Therefore, it may be necessary for your Conditional Letter of Map Revision to not change the floodplain along the north side of the channel.

It would seem to me that ADOT should be funding the Letter of Map Revision since A.R.S. Section 48-3609, paragraph I states that "the agency responsible for the installation of a flood control project should provide the governing bodies of all jurisdictions a new delineation of the floodplain within 120 days." To my knowledge, ADOT has never funded or provided for any redelineation of the floodplains after they have constructed various projects within the City of Phoenix boundaries. A.R.S. Section 48-3613 paragraph B (1) excludes the construction of bridges, etc. from the jurisdiction of the Floodplain Management Program. Consequently, I have never had the opportunity to review an ADOT project in the floodplains within the City of Phoenix. Most recently ADOT constructed a bridge, channel, and retention basin along Scatter Wash which is a designated floodplain, and the plans were never submitted to Floodplain Management for review, nor, has the floodplain been redelineated. At any rate, it is my opinion that ADOT should fund the redelineation both in the City of Phoenix and the City of Tempe according to State Statute.

125 East Washington Street, Phoenix, Arizona 85004 602-262-6284

If ADOT is unwilling to fund the Letter of Map Revision, the City of Phoenix is not in a position to fund this redelineation. If you have any further questions or comments, please do not hesitate to contact me.

Sincerely,

James H. Matteson, P.E.
Street Transportation Director

Paul

Paul E. Kienow, P.E.
Floodplain Management Engineer

JHM/PEK/aff/920728b

c: FEMA (316AD)
Mr. Carroll
Mr. Van Skike
Mr. Bortfeld
Ms. Miller, ADWR

City of Tempe
P.O. Box 5002
31 East Fifth Street
Tempe, AZ 85280
602-350-8371

Tempe

Public Works
Department

September 15, 1992

FLOOD CONTROL DISTRICT
RECEIVED
SEP 17 1992
CH ENG
P & PM
FILE

Michael Baker Jr., Inc.
3601 Eisenhower Avenue, Suite 600
Alexandria, VA 22304

Attn: Ms. Michele C. Monde, P.E.

Re: 316 AD
Case No.: 92-09-042R
Community: City of Tempe, Arizona
Community No.: 040054
City of Tempe Project No. 906345B

Dear Ms. Monde:

Enclosed is the additional information that FEMA requested for the review of the application for a Conditional Letter of Map Revision. Please refer to Mr. William R. Locke's letter dated June 12, 1992. The response items should be referenced to the item numbers in your letter.

Items 1,2,3,5 and 6b are addressed by the consultant, CRSS Civil Engineers, Inc., in the bound volume titled Additional Data, Salt River Channelization, 48th Street to Southern Pacific Railroad Salt River Bridge.

A copy of the letter from the City of Phoenix dated July 15, 1992 is included to satisfy Item 4.

A slope stability evaluation was performed by Thomas-Hartig and Associates, Inc. to satisfy Item 6a. A copy is included for your review.

Item 6c involves an area in the City of Phoenix that is outside the jurisdictional boundaries of the City of Tempe. A request was made to the City of Phoenix to participate in the floodplain delineation in this area and a copy of their response letter is included in this package. Since Tempe cannot justify spending Tempe funds for an area outside Tempe and since Phoenix does not currently have the funding for the delineation the only alternative is to leave this area as delineated on the current FIRM and Floodway Maps.

Copies of this package are also being submitted to the Maricopa County Flood Control District and the City of Phoenix. For additional information, please contact George Cotton of CRSS Civil Engineers, Inc. at (602) 263-5309 or Jim Bond of the City of Tempe at (602) 350-8897.

Sincerely,

CITY OF TEMPE

Lee M. Quaas, P.E.
Floodplain Administrator

cc: D.E. Sagramoso (MCFCD) w/attachments
Paul Kienow (City of Phoenix) w/attachments
George Cotton (CRSS)