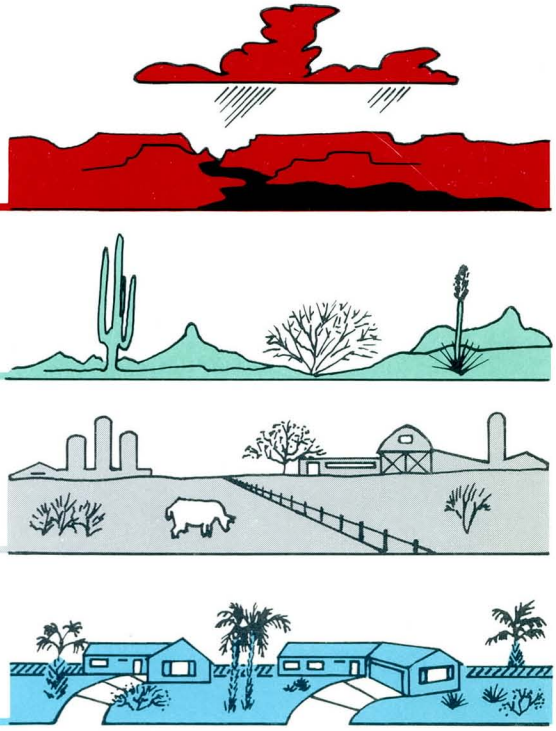

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MARICOPA FLOODWAY
from
Guadalupe Road to Broadway Road

FLOOD CONTROL DISTRICT OF MARICOPA

Property of
Flood Control District of MC Library
Please Return to
2801 W. Durango
Phoenix, AZ 85009

Property of
Flood Control District of MC Library
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Phoenix, AZ 85009

EAST MARICOPA FLOODWAY

The Flood Control District
of
Maricopa County

September 1991

EAST MARICOPA FLOODWAY
from
Guadalupe Road to Broadway Road

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I. INTRODUCTION

LETTER OF MAP REVISION
FOR
EAST MARICOPA FLOODWAY

INTRODUCTION

The purpose of this study was to investigate the flood hazard for the East Maricopa Floodway (EMF) from Guadalupe Road to Broadway Road and to provide continuity to the approved map revision of August 28, 1989 for all completed reaches, one through six of the EMF. The current flood hazard for reaches one through six indicate that the 100-Year design flow is conveyed in the channel and no ponding occurs against the east bank of the EMF.

The EMF is a joint effort between the U.S. Department of Agriculture Soil Conservation Service (SCS) and the Flood Control District of Mariocpa County. The District will operate and maintain this structure to SCS guidelines as specified in the operational manual for the structure.

II. DOCUMENTATION ABSTRACTS

SECTION 1: GENERAL INFORMATION

SECTION 1: GENERAL INFORMATION

1A The study area is located within Maricopa County, Town of Gilbert, and City of Mesa.

1B NFIP Maricopa County 040037
NFIP Town of Gilbert 040044
NFIP City of Mesa 040048

1C Study area is located within Maricopa County.

1D Study area is located within the State of Arizona.

1E Study is under review by FEMA.

1F Study Contractor: The Flood Control District of Maricopa County
3335 West Durango
Phoenix, AZ 85009
(602) 262-1501

Contact person: Jan Opstein

1G FEMA Technical reviewer: Michael Baker Jr., Inc.
1420 King Street
Sixth Floor
Alexandria, VA 22314-2788
(703) 838-0400

1H FEMA Regional reviewer:
FEMA Region IX
Presidio of San Francisco
Building 105
San Francisco, CA 94129
(202) 646-2767

1I State reviewer: Jim Morris
Arizona Dept. of Water Resources
15 South 15th Avenue
Phoenix, AZ
(602) 542-1553

1J County reviewer: Joe Tram
The Flood Control District of Maricopa County
3335 West Durango
Phoenix, AZ 85009
(602) 262-1501

1K East Maricopa Floodway (EMF) is the watercourse studied.

SECTION 1: GENERAL INFORMATION

1L The study area for the EMF starts at Guadalupe Road and extends north three miles to Broadway Road. Federal Insurance Rate Maps to be revised are Panels 2215 and 2680 of 4250.

1M A subcritical flow analysis was completed along this reach of the EMF. The defined reach are two continuing golf courses, Superstition Springs at the lower reach and Leisure World at the upper reach.

SECTION 2: MAPPING INFORMATION

SECTION 2: MAPPING INFORMATION

2A USGS Quadrangles (7.5') maps which cover the study area:

Higley, Arizona; 1956, Photorevised 1973
Buckhorn, Arizona; 1956

2B Hydrology was based on design flows for the EMF, prepared by the Soil Conservation Service. Therefore hydrologic maps are not applicable for this study.

2C Topography maps were prepared at a scale of 1" = 100' with a contour interval of 2 feet to analysis the hydraulic portion of the study area. Cooper Aerial prepared the maps for The Flood Control District of Maricopa County. Map date is July 7, 1990 and aerial topography date is July 7, 1990.

SECTION 3: HYDROLOGY

SECTION 3: HYDROLOGY

Flood delineation was based on the 100-Year hydrology prepared by the Soil Conservation Service, for the EMF. Therefore, no new hydrology was prepared for this study.

The Soil Conservation Service has reviewed the hydraulics and concurs with the discharge used to prepare the flood delineation, see Section 1: General Documentation and Correspondence.

SECTION 4: HYDRAULICS

SECTION 4: HYDRAULICS

4A The Department of Army, Corps of Engineers HEC-2 Water Surface Profiles computer program, version 4.6, vender Dodson & Associates Inc., Hydrologists and Civil Engineers, was used to determine the hydraulic characteristics and flood boundaries for the study area.

4B Flow regime through out the study area is subcritical.

4C Flood boundaries were determined using the 100-Year design discharge as determined by the Soil Conservation Service. The area is mapped as a Zone A, such that no base flood elevations or depths are shown within the study area.

4D No floodway was determined for the study area.

4E No unique conditions occurred through the model, although the HEC-2 warning message, "Conveyance change outside acceptable range" occurs in all cross sections due to the variability of the channel corridor typical of a golf course.

SECTION 5: ADDITIONAL STUDY INFORMATION

SECTION 5: ADDITIONAL STUDY INFORMATION

All elevations used were tied into the original Soil Conservation Service survey for the construction of the EMF. Starting water surface elevation was matched with EMF Reach 5, backwater analysis.

IV. DOCUMENTATION INDEX NUMBERING SYSTEM

SECTION 1:

GENERAL DOCUMENTATION AND CORRESPONDENCE

FLOOD CONTROL DISTRICT
of
Maricopa County

3335 West Durango Street • Phoenix, Arizona 85009
Telephone (602) 262-1501

D. E. Sagramoso, P.E., Chief Engineer and General Manager

BOARD OF DIRECTORS
Betsey Bayless
James D. Bruner
Carole Carpenter
Tom Freestone
Ed Pastor

Mr. Donald W. Gohmert
State Conservationist
Soil Conservation Service
201 East Indianola Avenue
Suite 200
Phoenix, Arizona 85012

SUBJECT: East Maricopa Floodway
Guadalupe and Broadway Roads

Dear Mr. Gohmert:

The Flood Control District of Maricopa has redelineated the flood hazard area within the East Maricopa Floodway (EMF), from Guadalupe to Broadway Roads. This area is better known as the Superstition Springs and Leisure World Golf Courses.

The flood hazard area mapped for this reach of the floodway was based on the Soil Conservation Service's (SCS) design discharge for the EMF. As part of our submittal to the Federal Emergency Management Agency (FEMA) for adoption of the federal insurance rate maps, FEMA requires a letter from the SCS stating that they are in agreement with the flood hazard mapping prepared by our office.

We are requesting that you review the enclosed hydraulics and mapping for continuity of the original design of the EMF. Please submit a letter of concurrence which will then be forwarded to FEMA.

If you should have any questions or comments, please call Jan Opstein of my staff at 262-1501.

Sincerely,

STANLEY L. SMITH JR., P.E
DEPUTY CHIEF ENGINEER
D. E. Sagramoso, P.E.

Enclosures (5)

Copy to: Jim Morris, P.E., ADWR

DES/JMO/ag

COORD: JMT, DR, SLS 7/16

INFO: RGN, SRY, SRY, MMP

FILE: Hydrology
Upper East Maricopa Floodway

MFR: This letter is written to request review of the hydraulic analysis for continuity of the EMF.

FLOOD CONTROL DISTRICT
of
Maricopa County

3335 West Durango Street • Phoenix, Arizona 85009
Telephone (602) 262-1501

D. E. Sagramoso, P.E., Chief Engineer and General Manager

BOARD OF DIRECTORS

Betsey Bayless
James D. Bruner
Carole Carpenter
Tom Freestone
Ed Pastor

JUL 16 1991

Mr. Harry Kent, P.E.
City Engineer
City of Mesa
P. O. Box 1466
Mesa, Arizona 85211-1466

SUBJECT: Flood Insurance Study
EMF--Leisure World and Superstition Springs Golf Courses
From Guadalupe to Broadway Roads

Dear Mr. Kent:

Enclosed is the preliminary Flood Insurance Study for the flood hazard delineation on the East Maricopa Floodway (EMF), extending from Guadalupe to Broadway Roads. This area has been designated as a Zone A flood hazard.

A portion of the delineated flood hazard area is located within the city limits of Mesa. Consequently, we are requesting that you review this study for concurrence and forward any comments back to us, prior to our submittal of it to FEMA.

If you should have any questions, please call me 262-1501.

Sincerely,

JMO

Jan M. Opstein
Hydrologist

Enclosure

Copy to: Jim Morris, P.E., ADWR

COORD: JJ, ~~DRK~~

INFO: ~~RGN~~, ~~SRY~~, MWR

FILE: Hydrology
Upper East Maricopa Floodway

United States
Department of
Agriculture

Soil
Conservation
Service

201 E. Indianola Ave.
Suite 200
Phoenix, AZ 85012

July 26, 1991

Dan Sagramaso, P.E.
Chief Engineer and General Manager
Flood Control District of
Maricopa County
3335 West Durango Street
Phoenix, Arizona 85009

Dear Dan:

SUBJECT: East Maricopa Floodway
Guadalupe and Broadway Roads

We have reviewed and are in agreement with the flood hazard delineation area for the East Maricopa Floodway between Guadalupe and Broadway Roads as requested in your transmittal of July 16, 1991.

Sincerely,

Donald W. Gohmert

DONALD W. GOHMERT
State Conservationist

cc:
Ralph M. Arrington, State Conservation Engineer, SCS, Phoenix, AZ
Harry C. Millsaps, Hydraulic Engineer, SCS, Phoenix, AZ
Jan Opstein, Hydrologist, FCDMC, Phoenix, AZ

FLOOD CONTROL DISTRICT
RECEIVED
JUL 31 1991
CH ENG | P & PM
2 | HYDRO
ADMIN | LMGT
FINANCE | FILE
CC
3

CITY OF
MESA

July 30, 1991

Jan Opstein
Flood Control District of Maricopa County
3335 West Durango Street
Phoenix, Arizona 85009

Subject: Flood Insurance Study
EMF-Leisure World and
Superstition Springs Golf
Courses from Guadalupe to
Broadway Roads.

Dear Ms. Opstein:

We have reviewed the referenced preliminary Flood Insurance Study and concur with its results. All of the indicated zone A within Mesa is within the existing E.M.F. channel so should have no impact on the City of Mesa.

Thank you for the opportunity to review this study prior to your submittal to F.E.M.A.

Sincerely,

Harry Kent

HARRY KENT, P.E.
City Engineer

FLOOD CONTROL DISTRICT
RECEIVED
AUG 01 1991

	CHIEFS		P & PM
			HYDRO
			CMCT
	FINANCE		FILE
	O & O		JAID
	ENGR		E

REMARKS

MAS

Engineering
20 East Main Street • P.O. Box 1466 • Mesa, Arizona 85211-1466 • (602) 644-2251

Town of Gilbert, Arizona
A Bicentennial Community
Community Development
459 North Gilbert Road
Gilbert, Arizona 85234

FLOOD CONTROL DIST
RECEIVED
JUL 25 1991

	CH ENG		P & PM
	DEP		HYDRO
	ADMIN		LMGT
	FINANCE		FILE
	C & O	/	JMO
	ENG		E
M			

July 24, 1991

Jan Opstein
Maricopa County
Flood Control District
3335 West Durango
Phoenix, Arizona 85009

RE: East Maricopa Floodway Flood Delineation (Preliminary)
Sheets 1-4

Dear Jan:

Thank you for the opportunity to review the area of this study within the Town's boundaries.

I concur with the information presented and the delineation shown on sheets 1-4.

Sincerely,

Lonnie K. Frost

Lonnie K. Frost
Floodplain Administrator

jad

Gilbertson Associates, Inc.
Consulting Civil Engineers & Land Surveyors
(602) 585-6464
Facsimile (602) 585-6422

April 22, 1991

Ms. Jan Opstein
Maricopa County Flood Control
3335 West Durango
Phoenix, AZ 85009

RE: EMF - Leisure World and Superstition Springs Golf Course

Dear Ms. Opstein;

I, Richard D. Tabor, hereby certify that the photo ground control and subsequent field checking of the finished mapping for the above noted project was done under my direction during the month of July, 1990.

Sincerely,

Richard D. Tabor, R.L.S.

RDT/fh

CC: Jeff Cooper, Cooper Aerial

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
19857
RICHARD D.
TABOR
Date Signed 4/23/91
ARIZONA U.S.A.

FLOOD CONTROL DISTRICT
RECEIVED
APR 25 1991

	CH ENG		P & PM
	DEP	/	HYDRO
	ADMIN		LMGT
	FINANCE		FILE
	C & O	2	JMO
	ENGR		

REMARKS

ARIZONA
DEPARTMENT
OF WATER
RESOURCES

Rose Mofford, Governor
N. W. Plummer
Director

15 South 15th Avenue
Phoenix, Arizona 85007

August 30, 1990

Dear Floodplain Administrator:

Under the authority of ARS 48-3605 (A), the Director of the Arizona Department of Water Resources is responsible for setting criteria for the delineation of 100-year floodplains. For this purpose the Department has created the State Standards Workgroup whose mission it is to suggest technical standards that should be used to delineate 100-year floodplains in Arizona.

The workgroup recommends specific standards to ADWR which are then sent to all floodplain administrators in the State and the Arizona Floodplain Management Association for review. After review comments have been incorporated, the standard will then be adopted by the Department as a state requirement.

Attached is State Standard 90-1 which is the first standard to be adopted by the Department following the procedure described above. It requires that all flood studies submitted to the Department or to the Federal Emergency Management Agency meet certain minimum technical documentation guidelines. The purpose of this requirement is to ensure that technical documentation materials will be available in the future that adequately describe past flood studies. This will prevent the loss of this material as well as ensuring that sufficient documentation is available for adequate review.

Questions or comments on the Standard or its implementation should be directed to Jim Morris, Chief, Flood Management Section at (602) 542-1541.

Sincerely,

N.W. Plummer
Director

NWP/JRM/tb

Enclosure

U.S. DEPARTMENT OF AGRICULTURE **SPEED MEMO**

PART NUMBER 1

DATE 12/30/88

TO JAN FARMER
Flood Control District

SUBJECT EAST MARICOPA FLOODWAY

FROM Don Paulus
Soil Conservation Service

MESSAGE (WRITE CONCISE MESSAGE SIGN AND FORWARD PARTS 1 AND 3 TO ADDRESSEE RETAIN PART 2.)

As requested, attached are the discharge rates for the subject project.

NOTE that the Queen Creek & Powerline Flwy. discharges that I gave you over the phone were incorrect. From design calc. these rates are shown to be:

Queen Ck. 3300 cfs
Powerline Flwy 3140 cfs

FLOOD CONTROL DISTRICT
RECEIVED
DEC 30 '88
JMF
REMARKS

SIGNATURE Donald E Paulus

REPLY (USE THIS SPACE FOR REPLY. SIGN AND DATE. RETURN PART 3 TO SENDER. RETAIN PART 1.)

SIGNATURE DATE

FORM AD-311 (REV 5-8?)

ARIZONA RWCO FLOODWAY

RMcArthur 4/26/77

LISTING OF DESIGN FLOWS 1 2

FLOODWAY REACH		DISCHARGE RATE		RATIO OF
FR	TO	100-YR (q_{100})	10-YR (q_{10})	q_{10}/q_{100}
1459+12 (RD-1)	996+00 (RD-36)	8700	2200	0.253
996+00 (RD-36)	853+80 (RD-48)	8100	1980	0.244
853+80 (RD-48)	595+00 (RD-71)	6900	1670	0.242
595+00 (RD-71)	491+69 (RD-85)	6500	1620	0.235
491+69 (RD-85)	459+40 (RD-88)	5900		
459+40 (RD-88)	407+40 (RD-92)	5300	1290	0.243
407+40 (RD-92)	354+40 (RD-95)	5100		
354+40 (RD-95)	289+40 (RD-106)	4900		
289+40 (RD-106)	214+40 (RD-116)	4800	1170	0.243
214+40 (RD-116)	197+40 (RD-124)	3500	850	0.243
197+40 RD-124	157+40 (RD-126)	3100	750	0.242

2 2

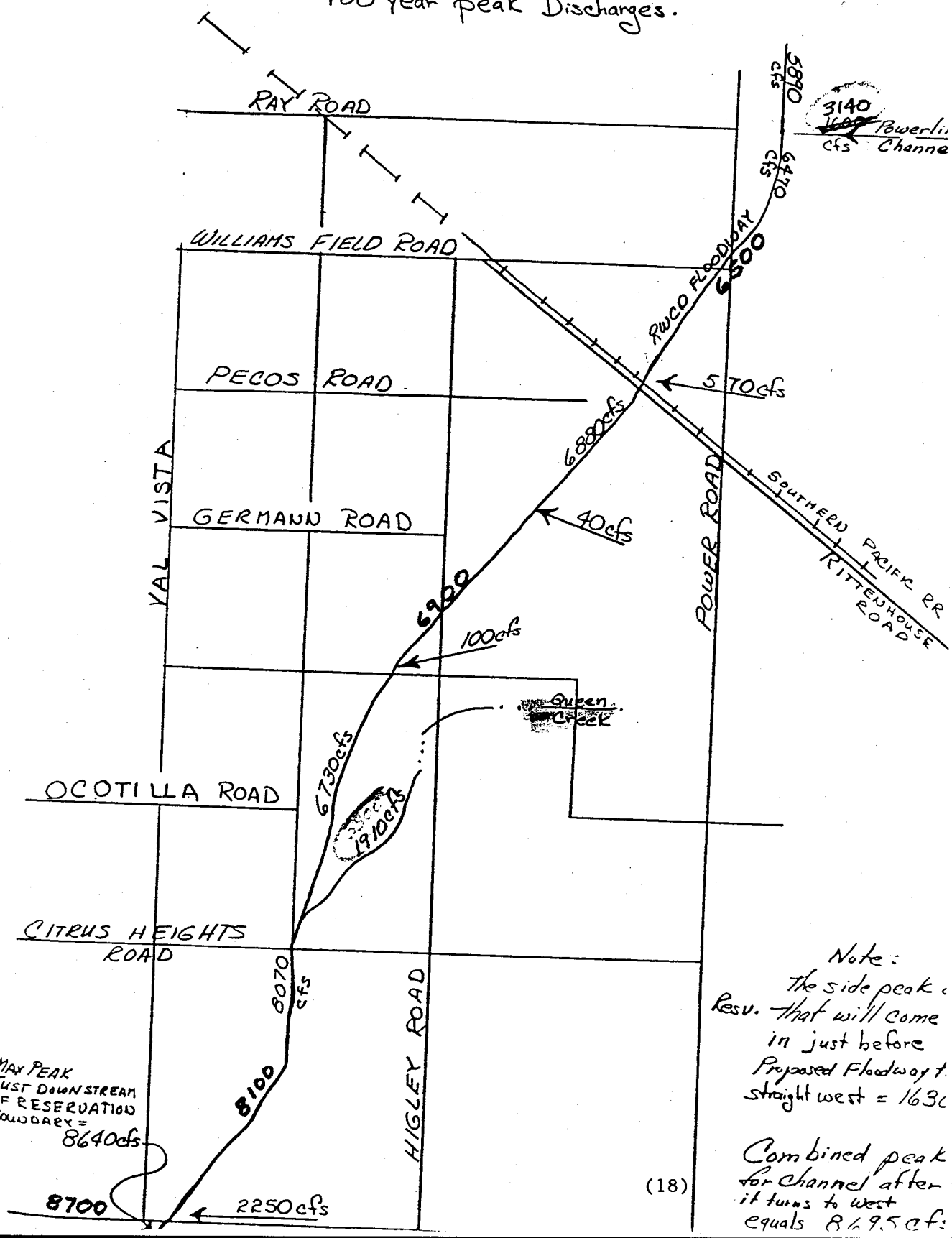
FLOODWAY REACH		DISCHARGE RATE (cfs)		RATIO OF
FR	TO	100-YR (Q_{100})	10-YR (Q_{10})	Q_{10}/Q_{100}
157+40 (RD-126)	110+47 (RD-139)	2300	570	0.248
110+47 (RD-139)	79+40 (RD-141)	2000	480	0.240
79+40 (RD-141)	19+90 (RD-148)	1200	280	0.233
19+90 (RD-148)	19+10 (RD-141)	~~500~~ 900	140	0.280
				Avg=0.246

$12{,}000/8100 = 1.48$

ARIZONA RWCD

RM BARTELS Sept 11, 74

Summary of Alternate 3
100 year peak Discharges.



Note:
The side peak
Resv. that will come
in just before
Proposed Floodway
straight west = 163

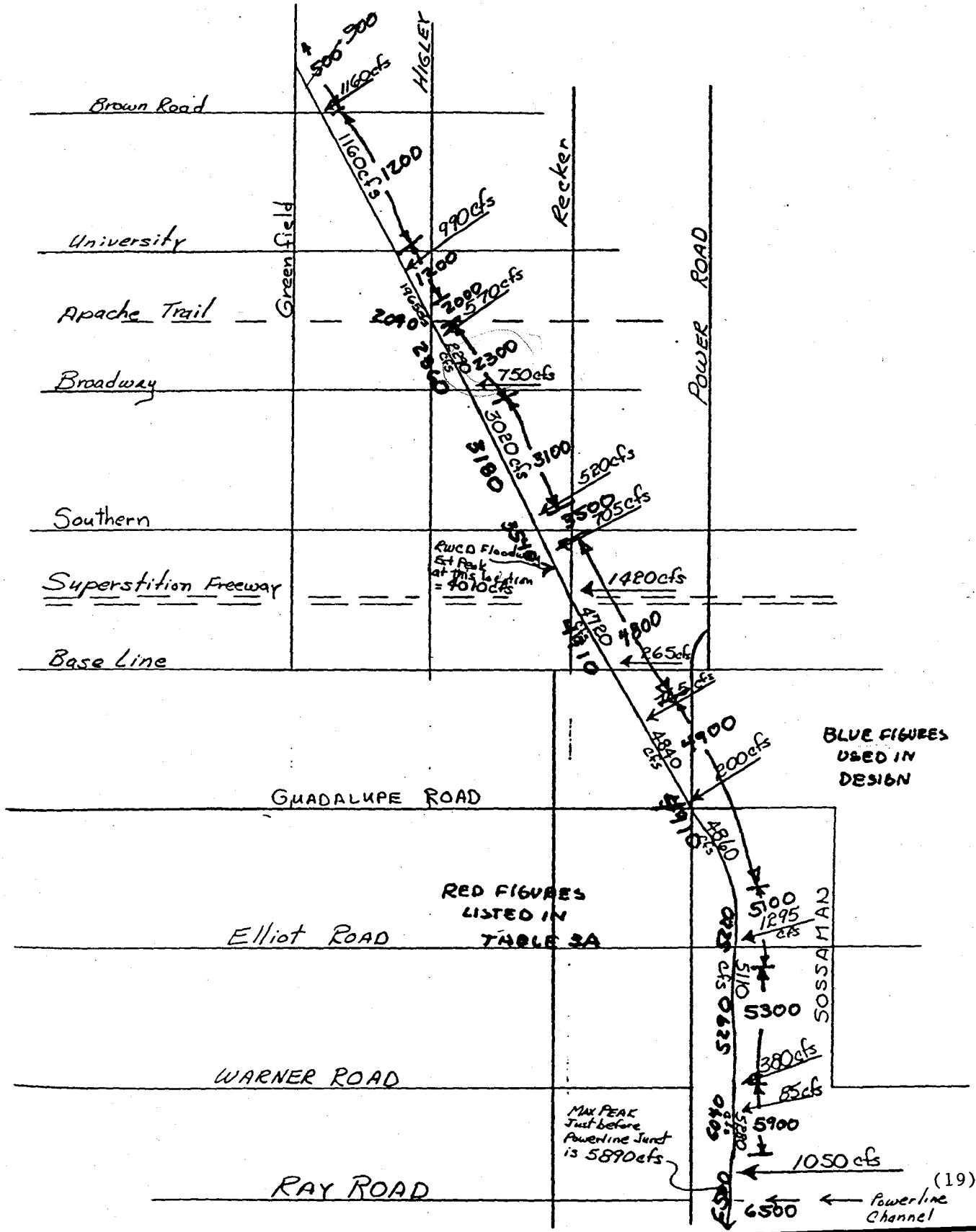
Combined peak
for channel after
it turns to west
equals 8695 cfs

ARIZONA RWCD

R.M. BARTELS Sept 10, 74

Summary of Design Peaks (Alt 3) 1 2

100 year Storm



SECTION 2: MAPPING AND SURVEY INFORMATION

SECTION 2: MAPPING AND SURVEY INFORMATION

2.1 Topography mapping was completedin July 1990, for the study area, which extends three miles from Gauadalupe Road north to Broadway Road. Map control was tied in to the Soil Conservaiton Service original design and construction plans.

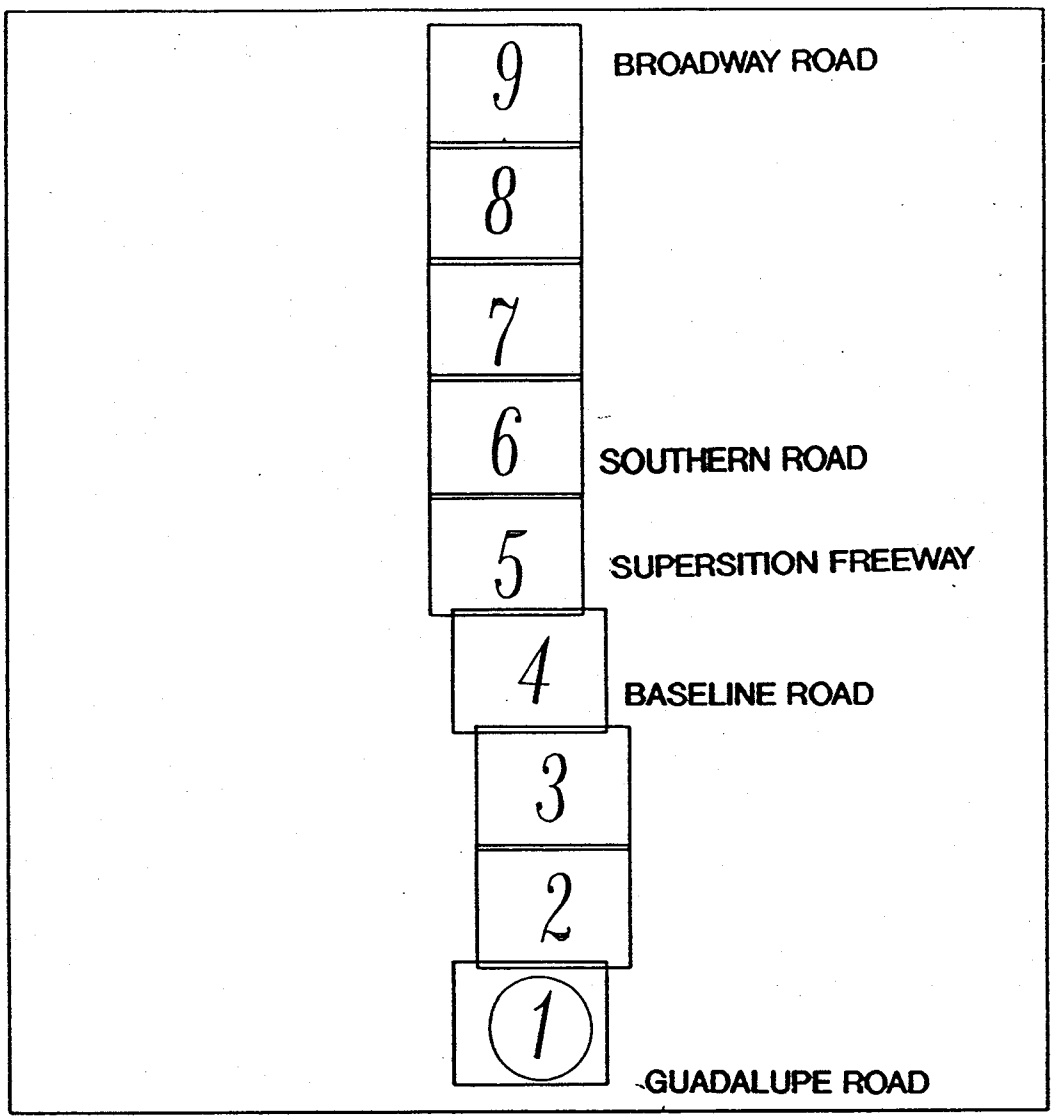
2.2 INDEX OF MAPS - see figure 1.

2.3 Datum used for the mapping of the study area was Soil Conservation Service. Gibertson Associates, Inc., Consulting Civil Engineers completed the the survey in July of 1990.

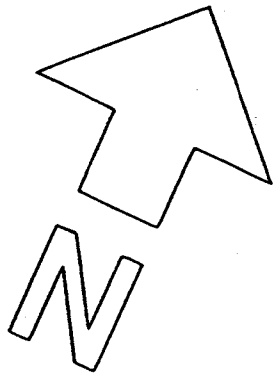
2.5 Hydraulic Analysis maps are enclosed under seperate cover.

2.7 Community maps see figure 2 and 3.

INDEX MAP



SCALE: 1"=100' CONTOUR INTERVAL: 2'



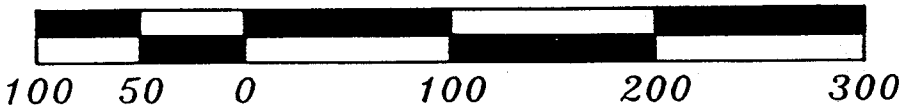


Figure 1

```
Raw Data:  HA 250^37'35"  ZA 095^48'40"  SD 00088.140 ft
140        866755.227     567985.478     1347.922        NG
Rod Height changed to 10.68

-----------------------------------------------------------------
Data Collection
Single Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD    Descriptor

Raw Data:  HA 250^43'55"  ZA 092^12'45"  SD 00194.090 ft
141        866696.552     567896.888     1344.714        NG
Raw Data:  HA 250^36'55"  ZA 091^49'00"  SD 00294.570 ft
142        866640.443     567813.536     1342.880        NG
Raw Data:  HA 250^41'25"  ZA 091^06'15"  SD 00401.460 ft
143        866581.500     567724.278     1344.494        NG
Raw Data:  HA 250^44'15"  ZA 092^18'10"  SD 00487.560 ft
144        866534.305     567652.644     1332.649        NG
Rod Height changed to 20.37

-----------------------------------------------------------------
Data Collection
Single Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD    Descriptor

-----------------------------------------------------------------
Data Collection
Single Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD    Descriptor

Raw Data:  HA 250^44'00"  ZA 092^17'15"  584.33
145        866480.759     567572.124     1319.238        NG
Raw Data:  HA 250^44'00"  ZA 091^50'55"  689.01
146        866422.766     567484.848     1320.348        NG
Raw Data:  HA 250^44'00"  ZA 091^50'55"  SD 0689..01 ft
147        866422.772     567484.856     1320.348        NO SHOT
Rod Height changed to 6.03

-----------------------------------------------------------------
Data Collection
Single Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD    Descriptor

Raw Data:  HA 250^42'55"  ZA 091^17'00"  SD 00786.040 ft
148        866368.771     567404.035     1339.322        NG
Raw Data:  HA 250^42'55"  ZA 090^35'15"  SD 00843.480 ft
149        866336.883     567356.078     1348.285        NG
-----------------------------------------------------------------
NEW SET UP 10/22/90   Time 11:22:13
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                 ZA 088^33'00"
Raw Data:                 ZA 271^27'40"
Zenith Angle Correction:  359^59'40.0"
-----------------------------------------------------------------
Instrument over Point 149  Backsight Point 44
Instrument Height 5.15  Rod Height 6.03

Point #    Northing/HA    Easting/ZA     Elevation/SD    Descriptor
149        866336.883     567356.078     1348.285        Control Pt
```

Pts 141 T
154 For

```
44          866803.892      568058.422      1357.608          Control Pt
Raw Data:   HA 000^00'00"   ZA 089^49'15"   0
Rod Height changed to 6.03

-----------------------------------------------------------------------
Data Collection
Single Observations
Point #     Northing/HA     Easting/ZA      Elevation/SD      Descriptor

Raw Data:   HA 179^49'05"   ZA 098^51'05"   104.96
150         866279.184      567269.898      1331.265          CART PATH
Raw Data:   HA 179^49'05"   ZA 096^20'45"   SD 00205.430 ft
151         866223.293      567186.418      1324.720          NG
Raw Data:   HA 179^49'05"   ZA 092^44'40"   SD 00306.510 ft
152         866166.554      567101.672      1332.761          NG
Raw Data:   HA 179^48'25"   ZA 091^36'25"   SD 00407.910 ft
153         866109.969      567017.299      1336.009          NG
Raw Data:   HA 179^49'40"   ZA 091^22'35"   SD 00493.010 ft
154         866062.750      566946.479      1335.616          NG
-----------------------------------------------------------------------
NEW SET UP 10/22/90   Time 11:52:00
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                   ZA 090^37'20"
Raw Data:                   ZA 269^23'25"
Zenith Angle Correction:    359^59'37.5"
-----------------------------------------------------------------------
Instrument over Point 21  Backsight Point 42
Instrument Height 5.26  Rod Height 0.00

Point #     Northing/HA     Easting/ZA      Elevation/SD      Descriptor
21          868420.407      565597.412      1339.234          Control Pt
42          868659.442      566981.315      1345.111          Control Pt
-----------------------------------------------------------------------
Instrument over Point 21  Backsight Point 20
Instrument Height 5.26  Rod Height 4.66

Point #     Northing/HA     Easting/ZA      Elevation/SD      Descriptor
21          868420.407      565597.412      1339.234          Control Pt
20          868498.534      565624.792      1339.007          Control Pt
Raw Data:   HA 000^00'00"   ZA 090^35'25"   SD 00082.800 ft
Rod Height changed to 15.52

-----------------------------------------------------------------------
Data Collection
Single Observations
Point #     Northing/HA     Easting/ZA      Elevation/SD      Descriptor

-----------------------------------------------------------------------
Data Collection
Single Observations
Point #     Northing/HA     Easting/ZA      Elevation/SD      Descriptor

Raw Data:   HA 060^53'20"   ZA 089^20'50"   1404.29
155         868659.366      566981.126      1345.166          PANNEL 10
Raw Data:   HA 060^54'40"   ZA 089^20'10"   SD 01293.540 ft
156         868640.026      566872.082      1344.137          NG
Raw Data:   HA 060^51'50"   ZA 089^18'50"   SD 01197.630 ft
157         868624.714      566777.397      1343.475          NG
```

```
Raw Data:  HA 060^51'50"  ZA 089^16'00"  SD 01091.850 ft
158        868606.667     566673.165     1343.092          NG
Raw Data:  HA 060^51'50"  ZA 089^14'35"  SD 00985.690 ft
159        868588.556     566568.565     1342.123          NG
Raw Data:  HA 060^50'50"  ZA 089^21'30"  SD 00876.980 ft
160        868570.266     566461.436     1338.906          NG
Rod Height changed to 10.59

-----------------------------------------------------------------------
Data Collection
Single Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Raw Data:  HA 060^50'45"  ZA 090^16'30"  774.38
161        868552.759     566360.389     1330.284          NG
Raw Data:  HA 060^50'45"  ZA 090^16'30"  SD 0774..38 ft
162        868552.694     566360.015     1330.286          NO
Rod Height changed to 13.52

-----------------------------------------------------------------------
Data Collection
Single Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Raw Data:  HA 060^50'00"  ZA 090^08'45"  661.91
163        868533.680     566249.556     1329.370          NG
Raw Data:  HA 060^50'00"  ZA 090^08'45"  SD 0661..91 ft
164        868533.524     566248.659     1329.372          NO SHOT
Rod Height changed to 12.52

-----------------------------------------------------------------------
Data Collection
Single Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Raw Data:  HA 060^49'25"  ZA 090^07'25"  552.34
165        868515.022     566141.587     1330.849          NG
Raw Data:  HA 060^49'25"  ZA 090^07'25"  SD 0552..34 ft
166        868514.963     566141.252     1330.849          NO SHOT
Rod Height changed to 10.59

-----------------------------------------------------------------------
Data Collection
Single Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Raw Data:  HA 060^51'25"  ZA 089^20'20"  SD 00454.460 ft
167        868497.989     566045.170     1339.201          NG
Raw Data:  HA 060^53'45"  ZA 090^44'15"  SD 00359.120 ft
168        868481.473     565951.273     1329.323          NG
Rod Height changed to 15.52

-----------------------------------------------------------------------
Data Collection
Single Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Raw Data:  HA 060^54'15"  ZA 090^13'55"  SD 00254.380 ft
169        868463.629     565848.091     1327.973          NG
Rod Height changed to 6.03
```

Data Collection
Single Observations

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor
Raw Data:	HA 060^57'25"	ZA 089^13'15"	SD 00147.340 ft	
170	868445.306	565742.619	1340.484	NG
Raw Data:	HA 060^54'55"	ZA 089^45'40"	SD 00064.790 ft	
171	868431.404	565661.261	1338.741	NG

NEW SET UP 10/22/90 Time 12:46:06
File Name: F19601
Instrument Used: LIETZBOX
Ground to Grid Factor is 1
Raw Data: ZA 088^41'05"
Raw Data: ZA 271^19'40"
Zenith Angle Correction: 359^59'37.5"

Instrument over Point 35 Backsight Point 36
Instrument Height 5.06 Rod Height 4.83

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor
35	874013.132	563865.176	1351.511	Control Pt
36	872155.578	563960.070	1339.738	Control Pt
Raw Data:	HA 000^00'05"	ZA 090^22'50"	SD 01859.970 ft	

Rod Height changed to 4.83

Instrument over Point 35 Backsight Point 36
Instrument Height 5.06 Rod Height 4.83

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor
35	874013.132	563865.176	1351.570	Control Pt
36	872155.578	563960.070	1339.738	Control Pt
Raw Data:	HA 000^00'05"	ZA 090^22'55"	1859.97	

Rod Height changed to ~~4.85~~
6.03

Radial Stake Out

Raw Data: HA 000^00'05" ZA 090^22'55" SD 01859..97 ft

Data Collection
Single Observations

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor
Raw Data:	HA 130^05'10"	ZA 097^18'40"	SD 00106.850 ft	
172	874077.150	563780.713	1338.394	NG
Raw Data:	HA 130^05'10"	ZA 093^27'15"	SD 00206.770 ft	
173	874137.805	563700.689	1339.545	NG
Raw Data:	HA 130^05'10"	ZA 093^29'25"	SD 00314.490 ft	
174	874202.748	563615.007	1332.870	NG
Raw Data:	HA 130^05'10"	ZA 092^44'45"	SD 00414.700 ft	
175	874263.344	563535.059	1332.162	NG
Raw Data:	HA 130^04'25"	ZA 092^12'40"	SD 00518.020 ft	
176	874325.719	563452.578	1332.056	NG
Raw Data:	HA 130^03'15"	ZA 092^02'15"	SD 00622.520 ft	
177	874388.651	563369.161	1329.923	NG
Raw Data:	HA 310^08'50"	ZA 089^21'55"	101.60	

```
178          873951.678      563946.075      1353.117          NG
Raw Data:    HA 310^12'10"   ZA 089^56'45"   SD 00201.040 ft
179          873891.368      564025.147      1352.193          NG
Raw Data:    HA 302^36'45"   ZA 090^02'45"   SD 00451.870 ft
180          873789.340      564257.736      1351.672          TOPO PT
Rod Height changed to EXIT

-----------------------------------------------------------------------
Begin Calculations 13:33:15
Finish Calculations 13:35:44
-----------------------------------------------------------------------
NEW SET UP 10/22/90   Time 13:37:04
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                    ZA 083^04'45"
Raw Data:                    ZA 276^56'15"
Zenith Angle Correction:     359^59'30.0"
-----------------------------------------------------------------------
Instrument over Point 180  Backsight Point 35
Instrument Height 5.10  Rod Height 6.03

Point #      Northing/HA     Easting/ZA      Elevation/SD      Descriptor
180          873789.340      564257.736      1350.292          Control Pt
35           874013.132      563865.176      1351.570          Control Pt
Raw Data:    HA 000^00'00"   ZA 089^43'20"   SD 00451.900 ft
Rod Height changed to 6.03

-----------------------------------------------------------------------
Radial Stake Out

Raw Data:    HA 000^00'00"   ZA 089^43'20"   0
Raw Data:    HA 209^34'20"   ZA 090^18'45"   SD 00163.220 ft
Raw Data:    HA 208^34'20"   ZA 090^18'45"   SD 00163.970 ft
Rod Height changed to 6.03

-----------------------------------------------------------------------
Data Collection
Single Observations
Point #      Northing/HA     Easting/ZA      Elevation/SD      Descriptor

Raw Data:    HA 208^34'10"   ZA 089^49'10"   SD 00163.960 ft
181          873649.908      564343.999      1349.903          NG
-----------------------------------------------------------------------
NEW SET UP 10/22/90   Time 13:54:25
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                    ZA 091^41'10"
Raw Data:                    ZA 268^19'25"
Zenith Angle Correction:     359^59'42.5"
-----------------------------------------------------------------------
Instrument over Point 181  Backsight Point 180
Instrument Height 5.20  Rod Height 6.03

Point #      Northing/HA     Easting/ZA      Elevation/SD      Descriptor
181          873649.908      564343.999      1349.903          Control Pt
180          873789.340      564257.736      1350.292          Control Pt
Raw Data:    HA 000^00'00"   ZA 091^43'05"   0
Rod Height changed to 6.03
```

```
-----------------------------------------------------------------------
Radial Stake Out

-----------------------------------------------------------------------
Data Collection
Single Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

-----------------------------------------------------------------------
Data Collection
Single Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Raw Data:  HA 338^52'55"  ZA 089^56'45"  99.70
182        873710.101     564264.520     1349.176         NG
Raw Data:  HA 338^52'55"  ZA 089^41'50"  SD 00201.090 ft
183        873771.312     564183.696     1350.154         NG
-----------------------------------------------------------------------
Radial Stake Out

-----------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 338^52'55"  ZA 089^41'50"  0
-----------------------------------------------------------------------
Data Collection
Single Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Raw Data:  HA 158^53'00"  ZA 093^04'20"  SD 00095.970 ft
184        873592.048     564420.394     1343.938         NG
Raw Data:  HA 158^53'00"  ZA 091^35'05"  SD 00202.470 ft
185        873527.712     564505.340     1343.492         NG
Raw Data:  HA 158^53'00"  ZA 090^39'30"  SD 00307.370 ft
186        873464.343     564589.009     1345.569         NG
Rod Height changed to 5.57

-----------------------------------------------------------------------
Data Collection
Single Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Raw Data:  HA 158^52'45"  ZA 090^14'50"  SD 00410.930 ft
187        873401.832     564671.595     1347.798         NG
-----------------------------------------------------------------------
Data Collection
Single Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

-----------------------------------------------------------------------
NEW SET UP 10/22/90   Time 14:16:40
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                 ZA 091^13'10"
Raw Data:                 ZA 268^47'30"
Zenith Angle Correction:  359^59'40.0"
-----------------------------------------------------------------------
Instrument over Point 37  Backsight Point 36
```

```
Instrument Height 5.22  Rod Height 6.03

Point #     Northing/HA     Easting/ZA      Elevation/SD      Descriptor
37          873242.374      564882.053      1346.970          Control Pt
36          872155.578      563960.070      1339.738          Control Pt
Raw Data:   HA 000^00'00"   ZA 090^26'45"   0
Rod Height changed to 6.03

-----------------------------------------------------------------------
Data Collection
Single Observations
Point #     Northing/HA     Easting/ZA      Elevation/SD      Descriptor

-----------------------------------------------------------------------
Radial Stake Out

Raw Data:   HA 086^51'05"   ZA 089^46'00"   SD 00100.790 ft
-----------------------------------------------------------------------
Data Collection
Single Observations
Point #     Northing/HA     Easting/ZA      Elevation/SD      Descriptor

Raw Data:   HA 086^51'05"   ZA 089^46'00"   100.79
188         873303.257      564801.730      1346.580          NG
Raw Data:   HA 086^49'50"   ZA 089^28'20"   SD 00177.610 ft
189         873349.605      564740.475      1347.814          NG
End of File
End of Report 06:04:54 10/23/90
```

DAC 12

NEW SET UP 07/07/90 Time 21:35:23
File Name: F19601
Instrument Used: LIETZBOX
Ground to Grid Factor is 1
Zenith Angle Correction: 0^0'0.0"

Begin Calculations 21:35:38
Finish Calculations 21:42:22

Instrument Off Point
First Point Shot 11 Second Point Shot 10
Glass Height Pt 11 is 5.00 Glass Height Pt 10 is 5.00
Rod Height 5.00

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor
11	860352.742	567538.775	0.000	Control Pt
10	860378.240	570141.000	0.000	Control Pt
Raw Data:	HA 193^41'25"	ZA 090^26'55"	SD 02347.370 ft	
Raw Data:	HA 000^00'00"	ZA 090^15'45"	SD 00261.750 ft	
Inst Pt	860319.860	569885.846	7.910	Control Pt
12	860319.860	569885.846	2.910	PP # 3

Base Line Precision 1:1487763 / Elevaton Check: 17.07

Instrument over Point 12 Backsight Point 11
Instrument Height 5.29 Rod Height 5.00

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor
12	860319.860	569885.846	1337.970	Control Pt
11	860352.742	567538.775	0.000	Control Pt
Raw Data:	HA 000^00'00"	ZA 090^26'40"	SD 02347.370 ft	

Rod Height changed to 5.00

Radial Stake Out

Raw Data: HA 166^18'35" ZA 090^15'45" SD 00261.760 ft

Station/OS	Stake Elev	Design Elev	Cut/Fill	Dist Out/X-Sec
FD BC @ POWER&GUA	1337.06	0.00	C 1337.06	_____

Set Date-Time	Point	Northing (Y)	Easting (X)	
07/07/90-21:49:09	# 10	860378.240	570141.000	Design
Code: 10		860378.242	570141.010	Staked

Raw Data: HA 359^59'50" ZA 090^27'05" SD 02347.370 ft

Station/OS	Stake Elev	Design Elev	Cut/Fill	Dist Out/X-Sec
FD BC	1319.88	0.00	C 1319.88	_____

Set Date-Time	Point	Northing (Y)	Easting (X)	
07/07/90-21:51:03	# 11	860352.742	567538.775	Design
Code: 11		860352.629	567538.776	Staked

Rod Height changed to 5.00

Data Collection
Multiple Observations

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor

```
Backsight: HA 000^00'00"
Foresight: HA 254^40'45"  ZA 090^29'50"  SD 00645.110 ft
Backsight: HA 179^59'50"
Foresight: HA 074^40'40"  ZA 269^30'45"  SD 00645.110 ft
Raw Data:  HA 254^40'47.5"ZA 90^29'32.5" SD 645.110
13         859695.370     570047.553     1332.725         PP#1
Rod Height changed to 5.00

-----------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 254^40'40"  ZA 090^29'55"  645.11

Station/OS          Stake Elev     Design Elev    Cut/Fill       Dist Out/X-Sec
PP#1                1332.65        1332.72        F 0.07         ______________

Set Date-Time       Point          Northing (Y)   Easting (X)
07/07/90-22:02:25   # 13           859695.370     570047.553     Design
Code: 13                           859695.377     570047.576     Staked
-----------------------------------------------------------------
-----------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Rod Height changed to 6.00

-----------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 218^34'15"  ZA 090^11'10"  SD 01034.590 ft
Backsight: HA 179^59'55"
Foresight: HA 038^34'20"  ZA 269^49'45"  SD 01034.590 ft
Raw Data:  HA 218^34'20.0"ZA 90^10'42.5" SD 1034.590
14         859663.528     570685.593     1334.059         PP#2
-----------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 218^34'25"  ZA 090^11'10"  1034.59

Station/OS          Stake Elev     Design Elev    Cut/Fill       Dist Out/X-Sec
PP#2                1333.92        1334.06        F 0.14         ______________

Set Date-Time       Point          Northing (Y)   Easting (X)
07/07/90-22:11:41   # 14           859663.528     570685.593     Design
Code: 14                           859663.509     570685.576     Staked
-----------------------------------------------------------------
Rod Height changed to 5.00

-----------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 066^36'35"  ZA 090^03'25"  SD 01855.000 ft
```

```
Backsight: HA 179^59'55"
Foresight: HA 246^36'30"  ZA 269^57'35"  SD 01854.990 ft
Backsight: HA 000^00'00"
Foresight: HA 066^36'30"  ZA 090^03'25"  SD 01855.010 ft
Backsight: HA 179^59'50"
Foresight: HA 246^36'15"  ZA 269^57'30"  SD 01854.990 ft
Raw Data:  HA 66^36'31.3" ZA 90^2'56.3"  SD 1854.998
15         862032.554     569173.319     1336.745         PP#4
-----------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 066^36'40"  ZA 090^03'25"  1854.99
-----------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 066^36'40"  ZA 090^03'25"  1854.99

Station/OS          Stake Elev     Design Elev    Cut/Fill       Dist Out/X-Sec
PP#4                1336.49        1336.75        F 0.26         ______________

Set Date-Time       Point          Northing (Y)   Easting (X)
07/07/90-22:35:30   # 15           862032.554     569173.319     Design
Code: 15                           862032.576     569173.394     Staked
-----------------------------------------------------------------
-----------------------------------------------------------------
NEW SET UP 07/07/90   Time 22:49:19
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                  ZA 089^58'25"
Raw Data:                  ZA 270^02'20"
Zenith Angle Correction:   359^59'37.5"
-----------------------------------------------------------------
Instrument over Point 15  Backsight Point 12
Instrument Height 5.23  Rod Height 5.14

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
15         862032.554     569173.319     1336.745         Control Pt
12         860319.860     569885.846     1337.970         Control Pt
Raw Data:  HA 000^00'00"  ZA 089^58'50"  1854.98
Rod Height changed to 5.00

-----------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 182^27'50"  ZA 089^59'05"  SD 01347.130 ft
Backsight: HA 179^59'50"
Foresight: HA 002^27'45"  ZA 270^01'55"  SD 01347.120 ft
Backsight: HA 000^00'00"
Foresight: HA 182^27'50"  ZA 089^59'00"  SD 01347.130 ft
Backsight: HA 179^59'50"
-----------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'05"
```

```
Foresight: HA 182^27'45"  ZA 089^59'00"  SD 01347.130 ft
Backsight: HA 179^59'55"
Foresight: HA 002^27'45"  ZA 270^01'55"  SD 01347.110 ft
Backsight: HA 000^00'05"
Foresight: HA 182^27'55"  ZA 089^59'10"  SD 01347.130 ft
Backsight: HA 179^59'50"
Foresight: HA 002^27'45"  ZA 270^02'00"  SD 01347.120 ft
Raw Data:  HA 182^27'48.8"ZA 89^58'56.2" SD 1347.123
16         863297.426     568709.813     1337.576         TRAV BUM
-----------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 182^27'55"  ZA 089^59'00"  1347.12

Station/OS          Stake Elev     Design Elev    Cut/Fill       Dist Out/X-Sec
TRAV BUM            1337.55        1337.58        F 0.02         ______________

Set Date-Time       Point          Northing (Y)   Easting (X)
07/07/90-23:06:28   # 16           863297.426     568709.813     Design
Code: 16                           863297.437     568709.852     Staked
-----------------------------------------------------------------------
-----------------------------------------------------------------------
NEW SET UP 07/07/90   Time 23:14:02
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                 ZA 090^03'50"
Raw Data:                 ZA 269^57'25"
Zenith Angle Correction:  359^59'22.5"
-----------------------------------------------------------------------
Instrument over Point 16  Backsight Point 15
Instrument Height 5.23  Rod Height 4.96

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
16         863297.426     568709.813     1337.576         Control Pt
15         862032.554     569173.319     1336.745         Control Pt
Raw Data:  HA 359^59'55"  ZA 090^03'55"  SD 01347.110 ft
Rod Height changed to 5.00

-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 156^40'30"  ZA 090^02'10"  SD 01731.660 ft
Backsight: HA 179^59'45"
Foresight: HA 336^40'25"  ZA 269^59'05"  SD 01731.650 ft
Backsight: HA 359^59'55"
Foresight: HA 156^40'30"  ZA 090^02'10"  SD 01731.660 ft
Backsight: HA 179^59'45"
Foresight: HA 336^40'25"  ZA 269^59'00"  SD 01731.670 ft
Raw Data:  HA 156^40'31.2"ZA 90^2'11.2"  SD 1731.660
17         864554.602     567518.949     1337.081         TRAV PP#5
-----------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 156^40'30"  ZA 090^02'00"  1731.67

Station/OS          Stake Elev     Design Elev    Cut/Fill       Dist Out/X-Sec
```

```
TRAV PP#5            1337.17        1337.08        C 0.09
```

```
Set Date-Time        Point          Northing (Y)   Easting (X)
07/07/90-23:23:18    # 17           864554.602     567518.949     Design
Code: 17                            864554.602     567518.935     Staked
-----------------------------------------------------------------
-----------------------------------------------------------------
NEW SET UP 07/07/90   Time 23:30:32
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                  ZA 089^59'40"
Raw Data:                  ZA 270^01'15"
Zenith Angle Correction:  359^59'32.5"
-----------------------------------------------------------------
Instrument over Point 17  Backsight Point 16
Instrument Height 5.08  Rod Height 5.21

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
17         864554.602     567518.949     1337.081         Control Pt
16         863297.426     568709.813     1337.576         Control Pt
Raw Data:  HA 000^00'00"  ZA 089^59'45"  SD 01731.650 ft
Rod Height changed to 5.00

-----------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 203^59'20"  ZA 089^58'00"  SD 01431.810 ft
Backsight: HA 179^59'45"
Foresight: HA 023^59'15"  ZA 270^03'15"  SD 01431.800 ft
Backsight: HA 359^59'55"
Foresight: HA 203^59'10"  ZA 089^58'00"  SD 01431.810 ft
Backsight: HA 179^59'45"
Foresight: HA 023^59'15"  ZA 270^03'10"  SD 01431.800 ft
Raw Data:  HA 203^59'23.8"ZA 89^57'51.2" SD 1431.805
18         865904.626     567041.983     1338.288         TRAV SLOW
-----------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 203^59'25"  ZA 089^57'55"  1431.80
```

```
Station/OS           Stake Elev     Design Elev    Cut/Fill       Dist Out/X-Sec
TRAV SLOW            1338.26        1338.29        F 0.03
```

```
Set Date-Time        Point          Northing (Y)   Easting (X)
07/07/90-23:39:42    # 18           865904.626     567041.983     Design
Code: 18                            865904.625     567041.992     Staked
-----------------------------------------------------------------
End of File
End of Report 00:43:13 07/08/90
```

```
---------------------------------------------------------------------
NEW SET UP 07/08/90   Time 17:17:10
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                    ZA 089^54'00"
Raw Data:                    ZA 270^06'40"
Zenith Angle Correction:  359^59'40.0"
---------------------------------------------------------------------
Instrument over Point 18  Backsight Point 17
Instrument Height 5.40  Rod Height 5.16

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
18         865904.626     567041.983     1338.288         Control Pt
17         864554.602     567518.949     1337.081         Control Pt
Raw Data:  HA 000^00'00"  ZA 090^00'40"  1
Rod Height changed to 5.00

---------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
---------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 170^40'50"  ZA 090^01'35"  SD 01564.460 ft
Backsight: HA 170^40'50"
Foresight: HA 341^21'40"  ZA 090^01'40"  SD 01564.460 ft
Backsight: HA 341^21'40"
Foresight: HA 152^02'30"  ZA 269^59'00"  SD 01564.460 ft
Backsight: HA 152^02'30"
Foresight: HA 322^43'20"  ZA 269^59'05"  SD 01564.460 ft
Raw Data:  HA 170^40'50.0"ZA 90^1'37.5"  SD 1564.460
19         867275.864     566288.828     1338.150         CITRUS
---------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 170^40'50"  ZA 090^01'40"  SD 01564.460 ft

Station/OS          Stake Elev     Design Elev    Cut/Fill       Dist Out/X-Sec
CITRUS              1338.13        1338.15        F 0.02         ______________

Set Date-Time       Point          Northing (Y)   Easting (X)
07/08/90-17:34:07   # 19           867275.864     566288.828     Design
Code: 19                           867275.864     566288.828     Staked
---------------------------------------------------------------------
---------------------------------------------------------------------
NEW SET UP 07/08/90   Time 17:43:06
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                    ZA 089^32'30"
Raw Data:                    ZA 270^28'10"
Zenith Angle Correction:  359^59'40.0"
---------------------------------------------------------------------
```

```
Instrument over Point 19  Backsight Point 18
Instrument Height 5.22  Rod Height 5.07

Point #     Northing/HA     Easting/ZA      Elevation/SD     Descriptor
19          867275.864      566288.828      1338.150         Control Pt
18          865904.626      567041.983      1338.288         Control Pt
Raw Data:   HA 000^00'00"   ZA 090^00'20"   SD 01564.470 ft
Rod Height changed to 5.00

-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #     Northing/HA     Easting/ZA      Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 180^16'05"   ZA 089^55'25"   SD 01391.390 ft
Backsight: HA 180^16'05"
Foresight: HA 000^32'05"   ZA 089^55'25"   SD 01391.400 ft
Backsight: HA 000^32'05"
Foresight: HA 180^48'20"   ZA 270^05'10"   SD 01391.400 ft
Backsight: HA 180^48'20"
Foresight: HA 001^04'20"   ZA 270^05'10"   SD 01391.400 ft
Raw Data:  HA 180^16'5.0" ZA 89^55'27.5" SD 1391.398
20          868498.533      565624.701      1340.383         FREEWAY
-----------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 180^16'05"   ZA 089^55'20"   SD 01391.400 ft

Station/OS          Stake Elev      Design Elev     Cut/Fill        Dist Out/X-Sec
FREEWAY             1340.43         1340.38         C 0.05          ______________

Set Date-Time       Point           Northing (Y)    Easting (X)
07/08/90-17:52:12   # 20            868498.533      565624.701      Design
Code: 20                            868498.535      565624.701      Staked
-----------------------------------------------------------------------
-----------------------------------------------------------------------
NEW SET UP 07/08/90   Time 18:02:29
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                  ZA 086^03'25"
Raw Data:                  ZA 273^57'00"
Zenith Angle Correction:   359^59'47.5"
-----------------------------------------------------------------------
Instrument over Point 20  Backsight Point 19
Instrument Height 5.33  Rod Height 5.08

Point #     Northing/HA     Easting/ZA      Elevation/SD     Descriptor
20          868498.533      565624.701      1340.383         Control Pt
19          867275.864      566288.828      1338.150         Control Pt
Raw Data:   HA 000^00'00"   ZA 090^06'25"   SD 01391.390 ft
Rod Height changed to 5.00

-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #     Northing/HA     Easting/ZA      Elevation/SD     Descriptor

Backsight: HA 000^00'00"
```

```
Foresight: HA 047^49'20"  ZA 090^04'20"  SD 00082.780 ft
Backsight: HA 047^49'20"
Foresight: HA 095^38'30"  ZA 269^55'55"  SD 00082.790 ft
Raw Data:  HA 47^49'15.0" ZA 90^4'25.0"  SD 82.785
21         868420.406     565597.325     1340.612         PP #9
Backsight: HA 000^00'00"
Foresight: HA 196^41'30"  ZA 089^59'50"  SD 01259.060 ft
Backsight: HA 196^41'30"
Foresight: HA 033^23'00"  ZA 089^59'45"  1259.06
Backsight: HA 033^23'00"
Foresight: HA 230^04'40"  ZA 270^00'50"  SD 01259.060 ft
Backsight: HA 230^04'40"
Foresight: HA 066^46'15"  ZA 270^00'55"  SD 01259.060 ft
Raw Data:  HA 196^41'33.7"ZA 89^59'40.0" SD 1259.060
22         869730.909     565366.860     1340.944         YARD
-----------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 196^41'30"  ZA 089^59'45"  SD 01259.070 ft

Station/OS          Stake Elev     Design Elev    Cut/Fill       Dist Out/X-Sec
YARD                1340.91        1340.94        F 0.03         ______________

Set Date-Time       Point          Northing (Y)   Easting (X)
07/08/90-18:18:31   # 22           869730.909     565366.860     Design
Code: 22                           869730.914     565366.836     Staked
-----------------------------------------------------------------
-----------------------------------------------------------------
NEW SET UP 07/08/90   Time 18:28:28
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                 ZA 088^12'45"
Raw Data:                 ZA 271^47'45"
Zenith Angle Correction:  359^59'45.0"
-----------------------------------------------------------------
Instrument over Point 22  Backsight Point 20
Instrument Height 5.32  Rod Height 5.11

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
22         869730.909     565366.860     1340.944         Control Pt
20         868498.533     565624.701     1340.383         Control Pt
Raw Data:  HA 000^00'00"  ZA 090^02'40"  SD 01259.080 ft
Rod Height changed to 5.00

-----------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 144^44'15"  ZA 089^56'40"  SD 01088.950 ft
Backsight: HA 144^44'15"
Foresight: HA 289^28'30"  ZA 089^56'40"  SD 01088.950 ft
Backsight: HA 289^28'30"
Foresight: HA 074^12'50"  ZA 270^03'50"  SD 01088.950 ft
Backsight: HA 074^12'50"
Foresight: HA 218^57'05"  ZA 270^03'50"  SD 01088.950 ft
Raw Data:  HA 144^44'16.2"ZA 89^56'40.0" SD 1088.950
23         870472.468     564569.426     1342.423         POWERPLAY
```

Radial Stake Out

Raw Data: HA 144^44'15" ZA 089^56'45" SD 01088.940 ft

Station/OS	Stake Elev	Design Elev	Cut/Fill	Dist Out/X-Sec
POWERPLAY	1342.40	1342.42	F 0.03	

Set Date-Time	Point	Northing (Y)	Easting (X)	
07/08/90-18:35:58	# 23	870472.468	564569.426	Design
Code: 23		870472.457	564569.429	Staked

NEW SET UP 07/08/90 Time 18:45:30
File Name: F19601
Instrument Used: LIETZBOX
Ground to Grid Factor is 1
Raw Data: ZA 089^33'25"
Raw Data: ZA 270^27'15"
Zenith Angle Correction: 359^59'40.0"

Instrument over Point 23 Backsight Point 22
Instrument Height 5.45 Rod Height 5.17

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor
23	870472.468	564569.426	1342.423	Control Pt
22	869730.909	565366.860	1340.944	Control Pt

Raw Data: HA 000^00'05" ZA 090^06'05" SD 01088.930 ft
Rod Height changed to 5.00

Data Collection
Multiple Observations

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor

Backsight: HA 000^00'05"
Foresight: HA 199^25'10" ZA 089^56'40" SD 01374.250 ft
Backsight: HA 199^25'10"
Foresight: HA 038^50'20" ZA 089^56'35" SD 01374.250 ft
Backsight: HA 038^50'20"
Foresight: HA 238^15'35" ZA 270^04'10" SD 01374.260 ft
Backsight: HA 238^15'35"
Foresight: HA 077^40'40" ZA 270^04'05" SD 01374.250 ft
Raw Data: HA 199^25'13.7" ZA 89^56'35.0" SD 1374.253

24	871689.666	563931.462	1344.411	JOGGERS

Radial Stake Out

Raw Data: HA 199^25'10" ZA 270^04'00" SD 01374.260 ft
Raw Data: HA 199^25'10" ZA 270^04'00" SD 01374.250 ft
Raw Data: HA 199^25'15" ZA 270^04'00" 1374.25

Data Collection
Single Observations

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor

Raw Data: HA 000^00'00" ZA 269^54'50" SD 01088.930 ft

24	871213.994	563771.989	1341.156	JOGGERS

Data Collection

```
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 199^25'05"  ZA 270^04'05"  SD 01374.250 ft
Backsight: HA 199^25'05"
Foresight: HA 038^50'20"  ZA 270^04'05"  SD 01374.250 ft
Backsight: HA 038^50'20"
Foresight: HA 238^15'40"  ZA 089^56'40"  SD 01374.250 ft
Backsight: HA 238^15'40"
Foresight: HA 077^40'50"  ZA 089^56'40"  SD 01374.250 ft
Raw Data:  HA 199^25'17.5"ZA 89^56'37.5" SD 1374.250
24         871689.675     563931.485     1344.395         JOGGERS
-----------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 199^25'05"  ZA 089^56'30"  SD 01374.250 ft
-----------------------------------------------------------------------
NEW SET UP 07/08/90   Time 19:21:33
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                 ZA 090^14'10"
Raw Data:                 ZA 269^46'30"
Zenith Angle Correction:  359^59'40.0"
-----------------------------------------------------------------------
Instrument over Point 24  Backsight Point 23
Instrument Height 5.23  Rod Height 5.17

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
24         871689.675     563931.485     1344.395         Control Pt
23         870472.468     564569.426     1342.423         Control Pt
Raw Data:  HA 000^00'00"  ZA 090^05'50"  SD 01374.240 ft
Rod Height changed to 5.00

-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 178^44'35"  ZA 090^05'45"  SD 01040.050 ft
Backsight: HA 178^44'35"
Foresight: HA 357^29'10"  ZA 090^05'40"  SD 01040.050 ft
Backsight: HA 357^29'10"
Foresight: HA 176^13'45"  ZA 269^55'00"  SD 01040.050 ft
Backsight: HA 176^13'45"
Foresight: HA 354^58'25"  ZA 269^55'05"  SD 01040.050 ft
Raw Data:  HA 178^44'36.3"ZA 90^5'40.0"  SD 1040.050
25         872600.063     563428.598     1343.033         PP #13
-----------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 178^44'35"  ZA 090^05'50"  SD 01040.050 ft
-----------------------------------------------------------------------
NEW SET UP 07/08/90   Time 19:55:48
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                 ZA 089^53'40"
```

```
Raw Data:                    ZA 270^07'00"
Zenith Angle Correction:     359^59'40.0"
-----------------------------------------------------------------------
Instrument over Point 25  Backsight Point 24
Instrument Height 5.23  Rod Height 4.88

Point #     Northing/HA     Easting/ZA      Elevation/SD      Descriptor
25          872600.063      563428.598      1343.033          Control Pt
24          871689.675      563931.485      1344.395          Control Pt
Raw Data:   HA 000^00'00"   ZA 089^57'05"   SD 01040.050 ft
Rod Height changed to 5.00

-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #     Northing/HA     Easting/ZA      Elevation/SD      Descriptor

Backsight: HA 000^00'00"
Foresight: HA 196^01'50"   ZA 090^02'10"   SD 01654.560 ft
Backsight: HA 196^01'50"
Foresight: HA 032^03'45"   ZA 090^02'05"   SD 01654.560 ft
Backsight: HA 032^03'45"
Foresight: HA 228^05'55"   ZA 269^58'45"   SD 01654.560 ft
Backsight: HA 228^05'55"
Foresight: HA 064^08'00"   ZA 269^58'45"   SD 01654.560 ft
Raw Data:  HA 196^1'60.0"  ZA 90^2'1.3"    SD 1654.560
26          874212.977      563059.713      1342.507          BACKYARD
-----------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 196^01'55"   ZA 090^02'05"   SD 01654.560 ft
-----------------------------------------------------------------------
NEW SET UP 07/08/90   Time 20:27:47
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                    ZA 090^07'00"
Raw Data:                    ZA 269^53'40"
Zenith Angle Correction:     359^59'40.0"
-----------------------------------------------------------------------
Instrument over Point 26  Backsight Point 25
Instrument Height 5.40  Rod Height 5.31

Point #     Northing/HA     Easting/ZA      Elevation/SD      Descriptor
26          874212.977      563059.713      1342.507          Control Pt
25          872600.063      563428.598      1343.033          Control Pt
Raw Data:   HA 000^00'00"   ZA 089^59'35"   SD 01654.590 ft
Rod Height changed to 5.00

-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #     Northing/HA     Easting/ZA      Elevation/SD      Descriptor

Backsight: HA 000^00'00"
Foresight: HA 179^37'20"   ZA 089^59'00"   SD 01132.560 ft
Backsight: HA 179^37'20"
Foresight: HA 359^14'30"   ZA 089^59'05"   SD 01132.570 ft
Backsight: HA 359^14'30"
Foresight: HA 178^51'55"   ZA 270^01'45"   SD 01132.560 ft
```

```
Backsight: HA 178^52'00"
Foresight: HA 358^29'30"  ZA 270^01'40"  SD 01132.560 ft
Raw Data:  HA 179^37'21.2"ZA 89^59'0.0"  SD 1132.563
27         875315.345     562799.940     1343.372         PUMP
-----------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 179^37'15"  ZA 089^59'00"  SD 01132.560 ft
-----------------------------------------------------------------
NEW SET UP 07/08/90   Time 20:48:50
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                 ZA 090^42'45"
Raw Data:                 ZA 269^17'50"
Zenith Angle Correction:  359^59'42.5"
-----------------------------------------------------------------
Instrument over Point 27  Backsight Point 26
Instrument Height 5.37  Rod Height 5.21

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
27         875315.345     562799.940     1343.372         Control Pt
26         874212.977     563059.713     1342.507         Control Pt
Raw Data:  HA 000^00'00"  ZA 090^04'00"  SD 01132.560 ft
Rod Height changed to 5.00

-----------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 158^40'15"  ZA 089^52'55"  SD 00953.850 ft
Backsight: HA 158^40'15"
Foresight: HA 317^20'30"  ZA 089^52'45"  SD 00953.850 ft
Backsight: HA 317^20'30"
Foresight: HA 116^00'45"  ZA 270^07'55"  SD 00953.860 ft
Backsight: HA 116^00'45"
Foresight: HA 274^41'00"  ZA 270^08'00"  SD 00953.860 ft
Raw Data:  HA 158^40'15.0"ZA 89^52'43.7" SD 953.855
28         876100.600     562258.451     1345.860         BROADWAY
-----------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 158^40'20"  ZA 089^52'50"  SD 00953.860 ft
-----------------------------------------------------------------
NEW SET UP 07/08/90   Time 21:08:46
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                 ZA 089^17'00"
Raw Data:                 ZA 270^43'50"
Zenith Angle Correction:  359^59'35.0"
-----------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

-----------------------------------------------------------------
Instrument over Point 28  Backsight Point 29
```

```
Instrument Height 5.36  Rod Height 5.10

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
28         876100.600     562258.451     1345.860         Control Pt
-----------------------------------------------------------------------
Instrument over Point 28  Backsight Point 27
Instrument Height 5.37  Rod Height 5.10

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
28         876100.600     562258.451     1345.860         Control Pt
27         875315.345     562799.940     1343.372         Control Pt
Raw Data:  HA 000^00'00"  ZA 090^10'30"  SD 00953.850 ft
Rod Height changed to 5.00

-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 131^22'55"  ZA 090^44'10"  SD 00643.040 ft
Backsight: HA 131^22'55"
Foresight: HA 262^46'05"  ZA 269^16'40"  SD 00643.040 ft
Raw Data:  HA 131^23'2.5" ZA 90^44'10.0" SD 643.040
29         876176.677     561619.979     1338.055         PP #17
Backsight: HA 000^00'00"
Foresight: HA 125^05'35"  ZA 269^32'00"  SD 01805.860 ft
Backsight: HA 125^05'35"
Foresight: HA 250^11'00"  ZA 269^32'10"  SD 01805.860 ft
-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 125^05'35"  ZA 090^28'50"  SD 01805.860 ft
Backsight: HA 125^05'35"
Foresight: HA 250^11'15"  ZA 090^28'50"  SD 01805.860 ft
Backsight: HA 250^11'15"
Foresight: HA 015^16'40"  ZA 269^32'05"  SD 01805.860 ft
Backsight: HA 015^16'40"
Foresight: HA 140^22'10"  ZA 269^32'20"  SD 01805.860 ft
Raw Data:  HA 125^5'32.5" ZA 90^28'43.7" SD 1805.860
30         876116.464     560452.721     1331.425         FND BC SEC COR
-----------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 125^05'35"  ZA 090^28'55"  SD 01805.860 ft
-----------------------------------------------------------------------
NEW SET UP 07/08/90   Time 21:42:17
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                 ZA 089^13'10"
Raw Data:                 ZA 270^47'40"
Zenith Angle Correction:  359^59'35.0"
-----------------------------------------------------------------------
Instrument over Point 30  Backsight Point 28
Instrument Height 6.02  Rod Height 5.30
```

```
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
30         876116.464     560452.721     1331.425         Control Pt
28         876100.600     562258.451     1345.860         Control Pt
Raw Data:  HA 000^00'05"  ZA 089^34'40"  SD 01805.860 ft
Rod Height changed to 5.00

-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'05"
Foresight: HA 357^24'40"  ZA 089^35'35"  SD 01761.840 ft
Backsight: HA 357^24'40"
Foresight: HA 354^49'25"  ZA 089^35'35"  SD 01761.850 ft
Backsight: HA 354^49'25"
Foresight: HA 352^13'55"  ZA 270^25'10"  SD 01761.850 ft
Backsight: HA 352^13'55"
Foresight: HA 349^38'25"  ZA 270^25'00"  SD 01761.840 ft
Raw Data:  HA 357^24'40.0"ZA 89^35'40.0" SD 1761.845
31         876180.621     562213.351     1345.193         BRIDGE
-----------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 357^24'35"  ZA 089^35'30"  SD 01761.840 ft
-----------------------------------------------------------------------
NEW SET UP 07/08/90   Time 22:06:02
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                 ZA 089^56'15"
Raw Data:                 ZA 270^04'25"
Zenith Angle Correction:  359^59'40.0"
-----------------------------------------------------------------------
Instrument over Point 31  Backsight Point 30
Instrument Height 5.30  Rod Height 7.00

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
31         876180.621     562213.351     1345.193         Control Pt
30         876116.464     560452.721     1331.425         Control Pt
Raw Data:  HA 000^00'00"  ZA 090^24'25"  SD 01761.870 ft
Rod Height changed to 5.23

-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 233^56'20"  ZA 090^05'50"  SD 01044.790 ft
Backsight: HA 233^56'15"
Foresight: HA 107^52'40"  ZA 090^05'55"  SD 01044.790 ft
Backsight: HA 107^52'40"
Foresight: HA 341^48'45"  ZA 269^55'05"  SD 01044.790 ft
Backsight: HA 341^48'45"
Foresight: HA 215^45'15"  ZA 269^55'00"  SD 01044.800 ft
Raw Data:  HA 233^56'20.0"ZA 90^5'45.0"  SD 1044.793
33         875358.979     562858.714     1343.639         BANK
-----------------------------------------------------------------------
Radial Stake Out
```

```
Raw Data:  HA 233^57'00"  ZA 090^05'55"  1044.79
-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

-----------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 233^56'20"  ZA 090^05'45"  SD 01044.790 ft
-----------------------------------------------------------------------
NEW SET UP 07/09/90   Time 21:20:05
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                 ZA 090^32'35"
Raw Data:                 ZA 269^28'05"
Zenith Angle Correction:  359^59'40.0"
-----------------------------------------------------------------------
Instrument over Point 33  Backsight Point 32
Instrument Height 5.35  Rod Height 5.00

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
33         875358.979     562858.714     1343.639         Control Pt
-----------------------------------------------------------------------
Instrument over Point 33  Backsight Point 32
Instrument Height 5.35  Rod Height 5.00

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
33         875358.979     562858.714     1343.639         Control Pt
-----------------------------------------------------------------------
Instrument over Point 33  Backsight Point 31
Instrument Height 5.35  Rod Height 5.00

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
33         875358.979     562858.714     1343.639         Control Pt
31         876180.621     562213.351     1345.193         Control Pt
Raw Data:  HA 359^59'55"  ZA 089^56'50"  SD 01044.830 ft
Rod Height changed to 5.65

-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 359^59'55"
Foresight: HA 167^43'40"  ZA 089^53'35"  SD 00531.830 ft
Backsight: HA 167^43'40"
Foresight: HA 335^27'15"  ZA 270^07'35"  SD 00531.850 ft
Raw Data:  HA 167^43'35.0"ZA 89^53'20.0" SD 531.840
34         875020.117     563268.623     1344.427         PP #16
-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 359^59'55"
Foresight: HA 055^13'15"  ZA 270^14'05"  1306.29
Backsight: HA 055^13'15"
```

```
Foresight: HA 110^26'20"  ZA 089^56'45"  1306.29
Raw Data:  HA 55^13'7.5"  ZA 89^51'40.0" SD 1306.290
32         876607.704     563242.207     1346.667         PP #18
Rod Height changed to 5.30

-----------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 181^21'30"  ZA 089^42'40"  SD 01680.300 ft
Backsight: HA 181^21'35"
Foresight: HA 002^43'10"  ZA 089^42'40"  SD 01680.300 ft
Backsight: HA 002^43'10"
Foresight: HA 184^04'45"  ZA 270^18'20"  1680.30
Backsight: HA 184^04'45"
Foresight: HA 005^26'15"  ZA 270^18'15"  SD 01680.290 ft
Raw Data:  HA 181^21'27.5"ZA 89^42'31.3" SD 1680.298
35         874013.337     563864.980     1352.453         PP #15
-----------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 181^21'25"  ZA 089^42'40"  SD 01680.290 ft
-----------------------------------------------------------------
NEW SET UP 07/09/90   Time 22:10:54
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Zenith Angle Correction:  0^0'0.0"
-----------------------------------------------------------------
Instrument over Point 35  Backsight Point 33
Instrument Height 5.31  Rod Height 5.00

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
35         874013.337     563864.980     1352.453         Control Pt
33         875358.979     562858.714     1343.639         Control Pt
Raw Data:  HA 000^00'00"  ZA 090^22'15"  1
Rod Height changed to 5.00

-----------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 213^51'10"  ZA 090^23'10"  SD 01859.980 ft
Backsight: HA 213^51'10"
Foresight: HA 067^42'10"  ZA 090^22'55"  SD 01859.980 ft
Backsight: HA 067^42'10"
Foresight: HA 281^33'25"  ZA 269^38'05"  SD 01859.980 ft
Backsight: HA 281^33'25"
Foresight: HA 135^24'40"  ZA 269^38'05"  SD 01859.980 ft
Raw Data:  HA 213^51'10.0"ZA 90^22'28.8" SD 1859.980
36         872155.837     563960.254     1340.671         BARRICADE
-----------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 213^51'05"  ZA 090^23'00"  SD 01859.980 ft
-----------------------------------------------------------------
```

```
NEW SET UP 07/09/90   Time 22:22:44
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                    ZA ^'"
-----------------------------------------------------------------------
NEW SET UP 07/09/90   Time 22:24:06
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                    ZA 089^32'50"
Raw Data:                    ZA 270^28'00"
Zenith Angle Correction:  359^59'35.0"
-----------------------------------------------------------------------
Instrument over Point 35  Backsight Point 33
Instrument Height 5.32  Rod Height 5.00

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
35         874013.337     563864.980     1352.453         Control Pt
33         875358.979     562858.714     1343.639         Control Pt
Raw Data:  HA 000^00'00"  ZA 090^21'45"  1
Rod Height changed to 5.00

-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 213^51'00"  ZA 090^23'00"  SD 01859.990 ft
Backsight: HA 213^51'05"
Foresight: HA 067^42'15"  ZA 090^23'00"  SD 01859.980 ft
Backsight: HA 067^42'15"
Foresight: HA 281^33'25"  ZA 269^37'50"  SD 01859.980 ft
Backsight: HA 281^33'25"
Foresight: HA 135^24'35"  ZA 269^37'50"  SD 01859.990 ft
Raw Data:  HA 213^51'7.5" ZA 90^22'60.0" SD 1859.985
36         872155.834     563960.277     1340.625         BARRICADE
-----------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 213^51'05"  ZA 090^22'55"  SD 01859.980 ft
End of File
End of Report 17:41:29 07/10/90
```

```
---------------------------------------------------------------------
NEW SET UP 07/10/90   Time 17:54:25
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                  ZA 088^27'55"
Raw Data:                  ZA 271^32'50"
Zenith Angle Correction:  359^59'37.5"
---------------------------------------------------------------------
Instrument over Point 36  Backsight Point 35
Instrument Height 5.40  Rod Height 4.99

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
36         872155.834     563960.277     1340.625         Control Pt
35         874013.337     563864.980     1352.453         Control Pt
Raw Data:  HA 359^59'55"  ZA 089^39'25"  SD 01859.970 ft
Rod Height changed to 5.00

---------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 359^59'55"
Foresight: HA 043^14'10"  ZA 089^43'50"  SD 01425.220 ft
Backsight: HA 043^14'10"
Foresight: HA 086^28'10"  ZA 270^16'35"  SD 01425.200 ft
Raw Data:  HA 43^14'2.5"  ZA 89^44'0.0"  SD 1425.210
37         873242.808     564882.049     1347.855         PP #14
Backsight: HA 000^00'00"
Foresight: HA 109^15'00"  ZA 270^28'20"  SD 00648.900 ft
Backsight: HA 109^15'00"
Foresight: HA 218^30'05"  ZA 089^32'40"  SD 00648.910 ft
Raw Data:  HA 109^14'57.5"ZA 89^32'32.5" SD 648.905
38         871973.564     564583.035     1346.287         PP #12
Backsight: HA 000^00'00"
Foresight: HA 118^15'00"  ZA 089^47'00"  SD 01853.690 ft
Backsight: HA 118^15'00"
Foresight: HA 236^29'55"  ZA 089^47'00"  SD 01853.690 ft
Backsight: HA 236^29'55"
Foresight: HA 354^44'55"  ZA 270^13'40"  SD 01853.700 ft
Backsight: HA 354^44'55"
Foresight: HA 112^59'50"  ZA 270^13'40"  SD 01853.700 ft
Raw Data:  HA 118^14'52.5"ZA 89^47'2.5"  SD 1853.695
39         871363.287     565635.986     1348.285         EXIT
---------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 118^14'55"  ZA 089^47'00"  SD 01853.700 ft
---------------------------------------------------------------------
NEW SET UP 07/10/90   Time 18:33:31
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                  ZA 089^30'20"
Raw Data:                  ZA 270^30'10"
Zenith Angle Correction:  359^59'45.0"
---------------------------------------------------------------------
Instrument over Point 39  Backsight Point 36
Instrument Height 5.32  Rod Height 5.15
```

```
Point #     Northing/HA     Easting/ZA      Elevation/SD      Descriptor
39          871363.287      565635.986      1348.285          Control Pt
36          872155.834      563960.277      1340.625          Control Pt
Raw Data:   HA 000^00'00"   ZA 090^14'55"   SD 01853.700 ft
Rod Height changed to 5.00

-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #     Northing/HA     Easting/ZA      Elevation/SD      Descriptor

Backsight:  HA 000^00'00"
Foresight:  HA 231^54'00"   ZA 090^08'10"   SD 01373.260 ft
Backsight:  HA 231^54'00"
Foresight:  HA 103^48'00"   ZA 090^08'15"   SD 01373.260 ft
Backsight:  HA 103^48'00"
Foresight:  HA 335^42'05"   ZA 269^52'30"   1373.26
Backsight:  HA 335^42'05"
Foresight:  HA 207^36'10"   ZA 269^52'30"   SD 01373.250 ft
Raw Data:   HA 231^54'2.5"  ZA 90^8'6.3"    SD 1373.258
40          870024.089      565939.923      1345.506          PP #11
-----------------------------------------------------------------------
Radial Stake Out

Raw Data:   HA 231^54'00"   ZA 090^08'15"   SD 01373.260 ft
-----------------------------------------------------------------------
NEW SET UP 07/10/90   Time 18:55:43
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                   ZA 089^36'50"
Raw Data:                   ZA 270^23'55"
Zenith Angle Correction:    359^59'37.5"
-----------------------------------------------------------------------
Instrument over Point 40  Backsight Point 39
Instrument Height 5.32  Rod Height 5.32

Point #     Northing/HA     Easting/ZA      Elevation/SD      Descriptor
40          870024.089      565939.923      1345.506          Control Pt
39          871363.287      565635.986      1348.285          Control Pt
Raw Data:   HA 000^00'00"   ZA 089^53'40"   SD 01373.250 ft
Rod Height changed to 6.00

-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #     Northing/HA     Easting/ZA      Elevation/SD      Descriptor

Backsight:  HA 000^00'00"
Foresight:  HA 255^41'45"   ZA 090^23'55"   SD 00642.450 ft
Backsight:  HA 255^41'45"
Foresight:  HA 151^23'40"   ZA 269^36'50"   SD 00642.450 ft
Raw Data:   HA 255^41'50.0"ZA 90^23'55.0"   SD 642.450
41          869731.534      565367.966      1340.435          PT.22 YARD
-----------------------------------------------------------------------
Radial Stake Out

Raw Data:   HA 255^41'40"   ZA 269^36'50"   SD 00642.430 ft
Raw Data:   HA 255^41'40"   ZA 269^36'55"   642.43
```

```
Raw Data:  HA 255^41'45"  ZA 090^23'55"  SD 00642.440 ft
-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 000^00'00"  ZA 090^23'55"  SD 01373.250 ft
Raw Data:  HA 0^0'0.0"    ZA 90^23'55.0" SD 1373.250
42         871363.251     565635.994     1335.461         NG
Rod Height changed to 5.00

-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 155^23'25"  ZA 089^59'55"  SD 01716.480 ft
Backsight: HA 155^23'25"
Foresight: HA 310^46'55"  ZA 270^00'45"  SD 01716.490 ft
Raw Data:  HA 155^23'27.5"ZA 89^59'57.5" SD 1716.485
42         868660.415     566982.378     1346.094         PP #10
Backsight: HA 000^00'00"
Foresight: HA 142^23'00"  ZA 270^01'35"  SD 02134.270 ft
Backsight: HA 142^23'00"
Foresight: HA 284^46'00"  ZA 270^01'45"  SD 02134.270 ft
Backsight: HA 284^46'00"
Foresight: HA 067^09'00"  ZA 089^59'20"  SD 02134.270 ft
Backsight: HA 067^09'00"
Foresight: HA 209^32'10"  ZA 089^59'20"  SD 02134.270 ft
Raw Data:  HA 142^23'2.5" ZA 89^59'12.5" SD 2134.270
43         868663.737     567584.475     1346.644         ONRAMP
-----------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 000^00'05"  ZA 089^52'45"  0
Raw Data:  HA 142^23'05"  ZA 089^59'25"  SD 02134.270 ft
-----------------------------------------------------------------------
NEW SET UP 07/10/90   Time 19:38:33
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                 ZA 088^21'30"
Raw Data:                 ZA 271^39'20"
Zenith Angle Correction:  359^59'35.0"
-----------------------------------------------------------------------
Instrument over Point 43  Backsight Point 40
Instrument Height 5.40  Rod Height 5.14

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
43         868663.737     567584.475     1346.644         Control Pt
40         870024.089     565939.923     1345.506         Control Pt
Raw Data:  HA 000^00'00"  ZA 090^03'15"  SD 02134.280 ft
Rod Height changed to 5.00

-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
```

```
Backsight: HA 000^00'00"
Foresight: HA 216^02'55"  ZA 089^40'30"  SD 01918.460 ft
Backsight: HA 216^03'00"
Foresight: HA 072^06'10"  ZA 089^40'30"  SD 01918.470 ft
Backsight: HA 072^06'10"
Foresight: HA 288^09'25"  ZA 270^20'30"  SD 01918.470 ft
Backsight: HA 288^09'30"
Foresight: HA 144^12'30"  ZA 270^20'30"  SD 01918.480 ft
Raw Data:  HA 216^3'5.0"  ZA 89^40'25.0" SD 1918.470
44         866805.169     568059.998     1358.280         PP #8
-----------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 216^03'00"  ZA 089^40'30"  SD 01918.450 ft
-----------------------------------------------------------------------
NEW SET UP 07/10/90   Time 20:12:22
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                 ZA 091^58'30"
Raw Data:                 ZA 268^02'15"
Zenith Angle Correction:  359^59'37.5"
-----------------------------------------------------------------------
Instrument over Point 44  Backsight Point 43
Instrument Height 5.09  Rod Height 5.09

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
44         866805.169     568059.998     1358.280         Control Pt
43         868663.737     567584.475     1346.644         Control Pt
Raw Data:  HA 000^00'00"  ZA 090^21'40"  SD 01918.470 ft
Rod Height changed to 5.00

-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 143^18'10"  ZA 090^22'40"  SD 01698.470 ft
Backsight: HA 143^18'15"
Foresight: HA 286^36'25"  ZA 090^22'50"  SD 01698.470 ft
Backsight: HA 286^36'25"
Foresight: HA 069^54'30"  ZA 269^38'10"  SD 01698.480 ft
Backsight: HA 069^54'30"
Foresight: HA 213^12'40"  ZA 269^38'05"  SD 01698.480 ft
Raw Data:  HA 143^18'8.8" ZA 90^22'41.2" SD 1698.475
45         865737.437     569380.848     1347.406         CLUBHOUSE
-----------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 143^18'10"  ZA 090^22'50"  SD 01698.470 ft
-----------------------------------------------------------------------
NEW SET UP 07/10/90   Time 20:48:04
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                 ZA 090^12'55"
Raw Data:                 ZA 269^48'00"
Zenith Angle Correction:  359^59'32.5"
```

```
-----------------------------------------------------------------------
Instrument over Point 45  Backsight Point 44
Instrument Height 5.30  Rod Height 4.89

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
45         865737.437     569380.848     1347.406         Control Pt
44         866805.169     568059.998     1358.280         Control Pt
Raw Data:  HA 000^00'00"  ZA 089^39'30"  SD 01698.470 ft
Rod Height changed to 5.00

-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 265^00'15"  ZA 090^10'40"  SD 00348.400 ft
Backsight: HA 265^00'15"
Foresight: HA 170^00'30"  ZA 269^50'30"  SD 00348.390 ft
Raw Data:  HA 265^0'15.0" ZA 90^10'32.5" SD 348.395
46         865448.453     569186.256     1346.687         PP #7
Backsight: HA 359^59'55"
Foresight: HA 230^26'40"  ZA 269^48'20"  SD 01429.160 ft
Backsight: HA 230^26'40"
Foresight: HA 100^53'25"  ZA 269^48'20"  SD 01429.170 ft
Backsight: HA 100^53'25"
Foresight: HA 331^20'10"  ZA 090^12'35"  SD 01429.170 ft
Backsight: HA 331^20'10"
Foresight: HA 201^47'00"  ZA 090^12'30"  SD 01429.160 ft
Raw Data:  HA 230^26'46.2"ZA 90^12'33.8" SD 1429.165
47         864308.359     569395.886     1342.716         VOLCANO
-----------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 230^26'50"  ZA 090^12'30"  SD 01429.160 ft
-----------------------------------------------------------------------
NEW SET UP 07/10/90   Time 21:28:58
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                 ZA 089^07'25"
Raw Data:                 ZA 270^53'35"
Zenith Angle Correction:  359^59'30.0"
-----------------------------------------------------------------------
NEW SET UP 07/10/90   Time 21:30:06
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                 ZA 089^13'35"
Raw Data:                 ZA 270^47'15"
Zenith Angle Correction:  359^59'35.0"
-----------------------------------------------------------------------
Instrument over Point 47  Backsight Point 45
Instrument Height 5.26  Rod Height 5.37

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
47         864308.359     569395.886     1342.716         Control Pt
45         865737.437     569380.848     1347.406         Control Pt
Raw Data:  HA 000^00'00"  ZA 089^49'30"  SD 01429.180 ft
Rod Height changed to 5.00
```

```
-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #     Northing/HA     Easting/ZA      Elevation/SD      Descriptor

Backsight: HA 000^00'00"
Foresight: HA 214^42'05"   ZA 090^18'55"   SD 01219.050 ft
Backsight: HA 214^42'05"
Foresight: HA 069^24'05"   ZA 269^42'05"   SD 01219.050 ft
Raw Data:  HA 214^42'2.5"  ZA 90^18'50.0"  SD 1219.050
48          863298.900      568712.488      1336.476          PT #16
-----------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 214^41'55"   ZA 090^18'30"   SD 01219.040 ft
-----------------------------------------------------------------------
Data Collection
Single Observations
Point #     Northing/HA     Easting/ZA      Elevation/SD      Descriptor

Raw Data:  HA 000^00'00"   ZA 089^49'40"   SD 01429.170 ft
49          865737.443      569380.848      1347.487          NG
-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #     Northing/HA     Easting/ZA      Elevation/SD      Descriptor

Backsight: HA 000^00'00"
Foresight: HA 088^15'55"   ZA 089^46'50"   SD 00599.110 ft
Backsight: HA 088^15'55"
Foresight: HA 176^31'35"   ZA 270^14'25"   SD 00599.080 ft
Raw Data:  HA 88^15'47.5"  ZA 89^46'37.5"  SD 599.095
49          864332.817      569994.477      1345.387          PP #6
Backsight: HA 000^00'00"
Foresight: HA 171^13'45"   ZA 269^57'10"   1556.72
Backsight: HA 171^13'45"
Foresight: HA 342^27'20"   ZA 269^57'25"   SD 01556.730 ft
Backsight: HA 342^27'20"
Foresight: HA 153^40'50"   ZA 090^03'40"   SD 01556.730 ft
Backsight: HA 153^40'50"
Foresight: HA 324^54'15"   ZA 090^03'40"   SD 01556.730 ft
Raw Data:  HA 171^13'33.8"ZA 90^3'36.2"   SD 1556.728
50          862772.433      569649.520      1341.582          PALMS
-----------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 171^13'35"   ZA 090^03'45"   SD 01556.730 ft
-----------------------------------------------------------------------
NEW SET UP 07/10/90   Time 22:10:28
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                  ZA ^'"
-----------------------------------------------------------------------
NEW SET UP 07/10/90   Time 22:11:23
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                  ZA 083^38'00"
```

```
Raw Data:                    ZA 276^22'50"
Zenith Angle Correction:  359^59'35.0"
-----------------------------------------------------------------------
Instrument over Point 50  Backsight Point 47
Instrument Height 5.31  Rod Height 5.07

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
50         862772.433     569649.520     1341.582         Control Pt
47         864308.359     569395.886     1342.716         Control Pt
Raw Data:  HA 000^00'00"  ZA 089^58'55"  SD 01556.740 ft
Rod Height changed to 5.00

-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 173^19'20"  ZA 090^02'40"  SD 01461.880 ft
Backsight: HA 173^19'20"
Foresight: HA 346^38'50"  ZA 090^02'30"  SD 01461.890 ft
Backsight: HA 346^38'50"
Foresight: HA 159^58'10"  ZA 269^58'40"  SD 01461.890 ft
Backsight: HA 159^58'10"
Foresight: HA 333^17'50"  ZA 269^58'40"  SD 01461.890 ft
Raw Data:  HA 173^19'27.5"ZA 90^2'22.5"  SD 1461.888
51         861367.546     570053.759     1341.104         ROADSIDE
-----------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 173^19'30"  ZA 090^02'35"  SD 01461.890 ft
-----------------------------------------------------------------------
NEW SET UP 07/10/90   Time 22:25:55
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                    ZA 089^33'20"
Raw Data:                    ZA 270^27'35"
Zenith Angle Correction:  359^59'32.5"
-----------------------------------------------------------------------
Instrument over Point 51  Backsight Point 50
Instrument Height 5.28  Rod Height 4.99

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
51         861367.546     570053.759     1341.104         Control Pt
50         862772.433     569649.520     1341.582         Control Pt
Raw Data:  HA 000^00'00"  ZA 090^00'35"  SD 01461.900 ft
Rod Height changed to 5.00

-----------------------------------------------------------------------
Data Collection
Single Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

-----------------------------------------------------------------------
Data Collection
Single Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

-----------------------------------------------------------------------
```

```
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 359^59'55"
Foresight: HA 204^59'05"  ZA 090^15'35"  SD 01058.670 ft
Backsight: HA 204^59'05"
Foresight: HA 049^58'15"  ZA 090^15'30"  SD 01058.670 ft
Backsight: HA 049^58'15"
Foresight: HA 254^57'30"  ZA 269^45'30"  SD 01058.680 ft
Backsight: HA 254^57'30"
Foresight: HA 099^56'50"  ZA 269^45'30"  SD 01058.680 ft
Raw Data:  HA 204^59'13.8"ZA 90^15'28.7" SD 1058.675
52         860321.727     569889.340     1336.781         PP #3 POB
-----------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 204^59'10"  ZA 090^15'30"  SD 01058.670 ft
-----------------------------------------------------------------------
NEW SET UP 07/10/90   Time 22:42:14
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                 ZA 089^52'10"
Raw Data:                 ZA ^'"
-----------------------------------------------------------------------
NEW SET UP 07/10/90   Time 22:43:39
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                 ZA 089^52'15"
Raw Data:                 ZA 270^08'50"
Zenith Angle Correction:  359^59'27.5"
-----------------------------------------------------------------------
Instrument over Point 52  Backsight Point 51
Instrument Height 5.30  Rod Height 4.99

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
52         860321.727     569889.340     1336.781         Control Pt
51         861367.546     570053.759     1341.104         Control Pt
Raw Data:  HA 359^59'55"  ZA 089^47'40"  SD 01058.680 ft
Rod Height changed to 5.00

-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 359^59'55"
Foresight: HA 261^51'00"  ZA 090^27'50"  SD 02347.360 ft
Backsight: HA 261^51'00"
Foresight: HA 163^42'00"  ZA 269^33'10"  SD 02347.350 ft
Raw Data:  HA 261^50'57.5"ZA 90^27'52.5" SD 2347.355
53         860353.899     567542.278     1318.531         MCHD BC
-----------------------------------------------------------------------
Begin Calculations 22:50:15
Finish Calculations 22:52:25
End of File
End of Report 23:46:16 07/10/90
```

```
---------------------------------------------------------------------
NEW SET UP 07/18/90   Time 06:37:30
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Zenith Angle Correction:  0^0'0.0"
---------------------------------------------------------------------
Begin Calculations 06:39:25
Finish Calculations 06:41:08
---------------------------------------------------------------------
NEW SET UP 07/18/90   Time 06:49:55
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                  ZA 089^53'05"
Raw Data:                  ZA 270^07'55"
Zenith Angle Correction:  359^59'30.0"
---------------------------------------------------------------------
Instrument over Point 12  Backsight Point 15
Instrument Height 5.35  Rod Height 4.52

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
12         860319.860     569885.846     1337.970         Control Pt
15         862032.530     569173.295     1336.800         Control Pt
Raw Data:  HA 000^00'00"  ZA 090^04'30"  SD 01854.990 ft
Rod Height changed to 5.00

---------------------------------------------------------------------
Data Collection
Single Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Raw Data:  HA 099^42'20"  ZA 090^11'45"  SD 00261.820 ft
54         860378.240     570141.073     1337.465         P @ Pt.10
---------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'00"
Foresight: HA 174^10'45"  ZA 089^53'10"  SD 00651.990 ft
Backsight: HA 174^10'45"
Foresight: HA 348^21'30"  ZA 270^07'55"  SD 00651.980 ft
Raw Data:  HA 174^10'45.0"ZA 89^53'7.5"  SD 651.985
55         859746.400     570196.050     1339.727         CANAL BRIDGE
---------------------------------------------------------------------
NEW SET UP 07/18/90   Time 07:49:43
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                  ZA 090^25'00"
Raw Data:                  ZA 269^35'50"
Zenith Angle Correction:  359^59'35.0"
---------------------------------------------------------------------
Instrument over Point 55  Backsight Point 53
Instrument Height 5.32  Rod Height 5.10

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
55         859746.400     570196.050     1339.727         Control Pt
53         860353.899     567542.278     1318.531         Control Pt
```

```
Raw Data:  HA 000^00'00"  ZA 090^11'15"  SD 00651.970 ft
Rod Height changed to 5.10

-----------------------------------------------------------------------
Instrument over Point 55  Backsight Point 12
Instrument Height 5.32  Rod Height 5.10

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
55         859746.400     570196.050     1339.727         Control Pt
12         860319.860     569885.846     1337.970         Control Pt
Raw Data:  HA 000^00'00"  ZA 090^11'20"  SD 00651.970 ft
Rod Height changed to 5.00

-----------------------------------------------------------------------
Data Collection
Single Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

-----------------------------------------------------------------------
Data Collection
Single Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Raw Data:  HA 026^34'00"  ZA 089^59'40"  SD 03264.060 ft
56         863008.770     570091.031     1340.978         FND MCHD BC IN HH
Raw Data:  HA 103^56'20"  ZA 089^51'50"  SD 02566.800 ft
57         860387.840     572681.401     1346.591         FND NAIL
Raw Data:  HA 208^31'15"  ZA 090^23'45"  SD 01999.010 ft
58         857747.439     570192.198     1326.561         FND MCHD BC IN HH
-----------------------------------------------------------------------
NEW SET UP 07/18/90   Time 09:07:52
File Name:  F19601
Instrument Used:  LIETZBOX
Ground to Grid Factor is 1
Raw Data:                 ZA 089^22'45"
Raw Data:                 ZA 270^38'10"
Zenith Angle Correction:  359^59'32.5"
-----------------------------------------------------------------------
Instrument over Point 30  Backsight Point 31
Instrument Height 6.03  Rod Height 5.09

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
30         876116.918     560453.394     1332.001         Control Pt
31         876180.759     562213.994     1345.821         Control Pt
Raw Data:  HA 000^00'00"  ZA 089^35'30"  SD 01761.840 ft
Rod Height changed to 5.00

-----------------------------------------------------------------------
Data Collection
Single Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Raw Data:  HA 092^21'40"  ZA 090^12'55"  SD 02649.130 ft
59         873467.837     560440.244     1323.575         COM BC IN HH
Raw Data:  HA 181^26'20"  ZA 090^22'15"  SD 02631.940 ft
60         876087.621     557821.668     1316.490         COTTON PICKER -.2
Raw Data:  HA 272^01'45"  ZA 089^43'30"  SD 02633.520 ft
61         878750.404     560451.209     1346.165         FND PIPE IN HH
-----------------------------------------------------------------------
Begin Calculations 09:35:30
```

```
Finish Calculations 09:43:05
-----------------------------------------------------------------------
Instrument over Point 28  Backsight Point 31
Instrument Height 5.30  Rod Height 5.09

Point #     Northing/HA     Easting/ZA      Elevation/SD      Descriptor
28          876100.812      562259.163      1346.383          Control Pt
31          876180.759      562213.994      1345.821          Control Pt
Raw Data:   HA 000^00'00"   ZA 090^26'25"   SD 00091.780 ft
Rod Height changed to 5.00

-----------------------------------------------------------------------
Radial Stake Out

-----------------------------------------------------------------------
Radial Stake Out

-----------------------------------------------------------------------
Begin Calculations 09:57:47
Finish Calculations 10:01:41
-----------------------------------------------------------------------
Radial Stake Out

-----------------------------------------------------------------------
Radial Stake Out

-----------------------------------------------------------------------
Radial Stake Out

-----------------------------------------------------------------------
Data Collection
Single Observations
Point #     Northing/HA     Easting/ZA      Elevation/SD      Descriptor

Raw Data:   HA 116^15'15"   ZA 090^22'55"   SD 00825.640 ft
62          876147.065      563083.489      1341.304          FND RB
-----------------------------------------------------------------------
Begin Calculations 10:14:49
Finish Calculations 10:15:37
-----------------------------------------------------------------------
Begin Calculations 11:20:14
Finish Calculations 11:21:54
End of File
End of Report 12:56:27 07/18/90
```

OK BOUNDARY WORK
SUPERSTITION [illegible]

GILBERTSON ASSOCIATES, INC.
15100 N 78TH WAY
SCOTTSDALE ARIZONA
CREW 3

NEW SET UP 07/25/90 Time 12:36:16
File Name: F19601.CMT
Instrument Used: LIETZBOX
Ground to Grid Factor is 1
Zenith Angle Correction: 0^0'0.0"

NEW SET UP 07/25/90 Time 08:39:36
File Name: F19601.CMT
Instrument Used: LIETZBOX
Ground to Grid Factor is 1
Raw Data: ZA 081^28'07"
Raw Data: ZA 278^32'20"
Zenith Angle Correction: 359^59'46.5"

Instrument over Point 23 Backsight Point 24
Instrument Height 5.28 Rod Height 5.00

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor
23	870472.516	564569.616	1342.766	Control Pt
24	871689.761	563931.763	1344.778	Control Pt

Raw Data: HA 000^00'00" ZA 089^55'34" SD 01374.250 ft
Rod Height changed to 5.00

Data Collection
Single Observations

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor

Radial Stake Out

Raw Data: HA 047^22'29" ZA 089^57'38" SD 00421.900 ft
Raw Data: HA 047^22'29" ZA 089^57'47" SD 00413.360 ft
Raw Data: HA 047^22'38" ZA 089^57'47" 0
Raw Data: HA 005^51'52" ZA 090^02'36" SD 00421.710 ft
Raw Data: HA 005^51'52" ZA 090^03'15" SD 00414.400 ft
Raw Data: HA 359^11'57" ZA 090^05'45" SD 00499.620 ft
Raw Data: HA 097^20'08" ZA 090^05'07" 0

Data Collection
Multiple Observations

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor

Backsight: HA 359^59'59"
Foresight: HA 358^52'31" ZA 090^02'57" SD 00444.360 ft
Backsight: HA 179^59'49"
Foresight: HA 178^52'32" ZA 269^57'44" SD 00444.360 ft
Raw Data: HA 358^52'37.5" ZA 90^2'50.0" SD 444.360

63	870861.994	564355.693	1342.713	EAR ACHE

NEW SET UP 07/25/90 Time 09:14:48
File Name: F19601.CMT
Instrument Used: LIETZBOX
Ground to Grid Factor is 1

Raw Data: ZA ^'"

NEW SET UP 07/25/90 Time 09:16:22
File Name: F19601.CMT
Instrument Used: LIETZBOX
Ground to Grid Factor is 1
Zenith Angle Correction: 0^0'0.0"

Instrument over Point 63 Backsight Point 24
Instrument Height 0.00 Rod Height 0.00

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor
63	870861.994	564355.693	1342.713	Control Pt
24	871689.761	563931.763	1344.778	Control Pt

Raw Data: HA 000^00'00" ZA 089^53'30" SD 00930.010 ft
Rod Height changed to 0.00

Radial Stake Out

Raw Data: HA 296^29'43" ZA 090^30'51" SD 01289.490 ft
A 46.69 R 5.48 C 1331.18/Design Elev=0.00/Stake Elev=1331.18

Station/OS	Stake Elev	Design Elev	Cut/Fill	Dist Out/X-Sec
N1/4 35	1331.18	0.00	C 1331.18	_____

Set Date-Time	Point	Northing (Y)	Easting (X)	
07/25/90-09:19:12	# 109	870841.980	563019.702	Design
Code: 109		870847.964	563066.331	Staked

Raw Data: HA 296^29'17" ZA 090^21'48" 3929.21
A 46.74 R 5.33 C 1318.11/Design Elev=0.00/Stake Elev=1318.11

Station/OS	Stake Elev	Design Elev	Cut/Fill	Dist Out/X-Sec
COM BC FND	1318.11	0.00	C 1318.11	_____

Set Date-Time	Point	Northing (Y)	Easting (X)	
07/25/90-09:25:41	# 110	870812.904	560380.122	Design
Code: 110		870818.748	560426.796	Staked

Raw Data: HA 116^28'55" ZA 089^55'57" SD 00083.900 ft
T 23.87 L 5.36 C 1342.81/Design Elev=0.00/Stake Elev=1342.81
Raw Data: HA 115^52'17" ZA 089^52'46" SD 00378.640 ft
Raw Data: HA 116^29'19" ZA 089^52'29" SD 01349.810 ft

Station/OS	Stake Elev	Design Elev	Cut/Fill	Dist Out/X-Sec
COM BC HH	1345.70	0.00	C 1345.70	_____

Set Date-Time	Point	Northing (Y)	Easting (X)	
07/25/90-09:39:37	# 108	870870.948	565658.743	Design
Code: 108		870876.837	565705.418	Staked

Raw Data: HA 116^20'23" ZA 090^04'03" SD 00018.670 ft
Raw Data: HA 178^20'12" ZA 090^01'58" SD 00444.340 ft

Station/OS	Stake Elev	Design Elev	Cut/Fill	Dist Out/X-Sec
POWERPLAY	1342.46	1342.77	F 0.30	_____

Set Date-Time	Point	Northing (Y)	Easting (X)	
07/25/90-09:45:28	# 23	870472.516	564569.616	Design

Code: 23 870472.548 564569.633 Staked

Instrument over Point 18 Backsight Point 19
Instrument Height 0.00 Rod Height 0.00

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor
18	865904.594	567041.983	1338.475	Control Pt
19	867275.845	566288.866	1338.383	Control Pt

Raw Data: HA 000^00'00" ZA 090^00'44" 1564.49
Rod Height changed to 0.00

Data Collection
Multiple Observations

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor

Backsight: HA 000^00'00"
Foresight: HA 181^53'28" ZA 089^48'52" SD 00325.070 ft
Backsight: HA 179^59'46"
Foresight: HA 001^53'11" ZA 270^11'59" SD 00325.060 ft
Raw Data: HA 181^53'26.5"ZA 89^48'26.5" SD 325.065

64	865614.667	567188.980	1339.570	GOOD DAY

Instrument over Point 64 Backsight Point 19
Instrument Height 0.00 Rod Height 0.00

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor
64	865614.667	567188.980	1339.570	Control Pt
19	867275.845	566288.866	1338.383	Control Pt

Raw Data: HA 000^00'00" ZA 090^03'19" SD 01889.410 ft
Rod Height changed to 0.00

Radial Stake Out

Raw Data: HA 001^34'06" ZA 090^16'04" SD 00325.090 ft

Station/OS	Stake Elev	Design Elev	Cut/Fill	Dist Out/X-Sec
TRAV SLOW	1338.05	1338.47	F 0.42	

Set Date-Time	Point	Northing (Y)	Easting (X)	
07/25/90-10:18:58	# 18	865904.594	567041.983	Design
Code: 18		865904.622	567041.987	Staked

Station/OS	Stake Elev	Design Elev	Cut/Fill	Dist Out/X-Sec
TRAV SLOW	1338.05	1338.47	F 0.42	

Set Date-Time	Point	Northing (Y)	Easting (X)	
07/25/90-10:19:07	# 18	865904.594	567041.983	Design
Code: 18		865904.622	567041.987	Staked

Raw Data: HA 118^43'43" ZA 089^45'52" 2852.63
A 0.05 R 0.28 C 1351.46/Design Elev=0.00/Stake Elev=1351.46

Station/OS	Stake Elev	Design Elev	Cut/Fill	Dist Out/X-Sec
NECOR 1 BC IN HH	1351.46	0.00	C 1351.46	

Set Date-Time	Point	Northing (Y)	Easting (X)

```
07/25/90-10:23:24   # 105          865601.130     570041.600     Design
Code: 105                          865600.853     570041.551     Staked
-----------------------------------------------------------------------
-----------------------------------------------------------------------
Data Collection
Multiple Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Backsight: HA 000^00'01"
Foresight: HA 127^17'40"  ZA 089^40'56"  SD 00229.950 ft
Backsight: HA 179^59'55"
Foresight: HA 307^17'37"  ZA 270^19'41"  SD 00229.970 ft
Raw Data:  HA 127^17'40.5"ZA 89^40'37.5" SD 229.960
65         865579.314     567416.203     1340.867         MCHP BC COR SEC 14
-----------------------------------------------------------------------
Data Collection
Single Observations
Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor

Raw Data:  HA 296^34'14"  ZA 090^29'46"  1508.68
66         865565.158     565681.168     1326.554         MCHD BC BL RKR RD N
Raw Data:  HA 297^05'46"  ZA 090^26'17"  2400.16
67         865557.910     564789.560     1321.338         MCHD BC BL RKR RD S
Raw Data:  HA 297^05'46"  ZA 090^26'17"  SD 02400..16 ft
68         865557.913     564789.720     1321.339         NO SHOT
-----------------------------------------------------------------------
Instrument over Point 45  Backsight Point 47
Instrument Height 0.00  Rod Height 0.00

Point #    Northing/HA    Easting/ZA     Elevation/SD     Descriptor
45         865735.803     569378.965     1348.433         Control Pt
47         864306.697     569393.600     1343.785         Control Pt
Raw Data:  HA 359^59'59"  ZA 090^11'41"  SD 01429.180 ft
Rod Height changed to 0.00

-----------------------------------------------------------------------
Radial Stake Out

Raw Data:  HA 282^05'07"  ZA 089^39'20"  SD 00676.290 ft
T 0.10 R 0.13 C 1352.51/Design Elev=0.00/Stake Elev=1352.51

Station/OS          Stake Elev     Design Elev    Cut/Fill       Dist Out/X-Sec
NECOR 1 BC IN HH    1352.51        0.00           C 1352.51      ______________

Set Date-Time       Point          Northing (Y)   Easting (X)
07/25/90-11:08:09   # 105          865601.130     570041.600     Design
Code: 105                          865600.988     570041.669     Staked
-----------------------------------------------------------------------

Station/OS          Stake Elev     Design Elev    Cut/Fill       Dist Out/X-Sec
NECOR 1 BC IN HH    1352.51        0.00           C 1352.51      ______________

Set Date-Time       Point          Northing (Y)   Easting (X)
07/25/90-11:08:46   # 105          865601.130     570041.600     Design
Code: 105                          865600.988     570041.669     Staked
-----------------------------------------------------------------------
-----------------------------------------------------------------------
NEW SET UP 07/25/90   Time 12:36:16
File Name:  F19601.CMT
Instrument Used:  LIETZBOX
```

NEW SET UP 10/22/90 Time 08:20:39
File Name: F19601
Instrument Used: LIETZBOX
Ground to Grid Factor is 1
Zenith Angle Correction: 0^0'0.0"

Dist = 40

NEW SET UP 10/22/90 Time 08:39:24
File Name: F19601
Instrument Used: LIETZBOX
Ground to Grid Factor is 1
Raw Data: ZA 091^04'20"
Raw Data: ZA 268^56'30"
Zenith Angle Correction: 359^59'35.0"

Instrument over Point 15 Backsight Point 12
Instrument Height 5.25 Rod Height 5.11

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor
15	862032.530	569173.299	1335.110	Control Pt
12	860319.860	569885.850	1336.320	Control Pt
Raw Data:	HA 000^00'00"	ZA 089^58'45"	SD 01855.010 ft	

Rod Height changed to 5.00

Data Collection
Single Observations

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor

Rod Height changed to 4.65

Data Collection
Single Observations

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor
Raw Data:	HA 254^51'05"	ZA 089^28'05"	SD 00053.960 ft	
128	862065.555	569215.969	1336.218	NG
Raw Data:	HA 254^48'55"	ZA 091^06'00"	SD 00160.180 ft	
129	862130.630	569299.887	1332.655	NG
Raw Data:	HA 254^46'30"	ZA 091^19'00"	SD 00221.750 ft	
130	862168.451	569348.435	1330.642	NG

Pts 128 & 130 for Profile #4

NEW SET UP 10/22/90 Time 09:23:47
File Name: F19601
Instrument Used: LIETZBOX
Ground to Grid Factor is 1
Raw Data: ZA 088^59'15"
Raw Data: ZA 271^01'40"
Zenith Angle Correction: 359^59'32.5"

Instrument over Point 130 Backsight Point 15
Instrument Height 5.07 Rod Height 3.83

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor
130	862168.451	569348.435	1330.642	Control Pt
15	862032.530	569173.299	1335.110	Control Pt
Raw Data:	HA 000^00'00"	ZA 088^50'00"	0	

Rod Height changed to 4.65

Data Collection
Single Observations

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor
Raw Data:	HA 180^07'05"	ZA 092^07'30"	SD 00083.210 ft	
131	862219.297	569414.231	1327.988	NG
Raw Data:	HA 180^02'10"	ZA 091^08'20"	SD 00180.160 ft	
132	862278.797	569490.803	1327.506	NG
Raw Data:	HA 179^53'25"	ZA 091^03'20"	SD 00278.520 ft	
133	862339.606	569568.102	1325.970	NG
Raw Data:	HA 179^59'45"	ZA 088^35'15"	SD 00379.570 ft	
134	862401.119	569648.186	1340.473	NG

Rod Height changed to 8.40

Data Collection
Single Observations

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor
Raw Data:	HA 179^58'25"	ZA 088^41'30"	SD 00479.010 ft	
135	862462.233	569726.617	1338.318	NG
Raw Data:	HA 180^00'50"	ZA 088^53'15"	SD 00580.820 ft	
136	862524.377	569807.281	1338.674	NG
Raw Data:	HA 180^00'20"	ZA 089^01'30"	SD 00682.800 ft	
137	862586.967	569887.807	1339.032	NG

Rod Height changed to ~~15.69~~
15.52 now [illegible] shot 135 [illegible]

Data Collection changed
Single Observations

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor
Raw Data:	HA 180^00'20"	ZA 088^35'50"	SD 00786.940 ft	
138	862650.724	569969.975	1339.405	NG
Raw Data:	HA 179^57'20"	ZA 088^42'30"	SD 00879.530 ft	
139	862708.098	570042.665	1339.982	NG @ PP

NEW SET UP 10/22/90 Time 10:10:37
File Name: F19601
Instrument Used: LIETZBOX
Ground to Grid Factor is 1
Raw Data: ZA 091^07'50"
Raw Data: ZA 268^52'50"
Zenith Angle Correction: 359^59'40.0"

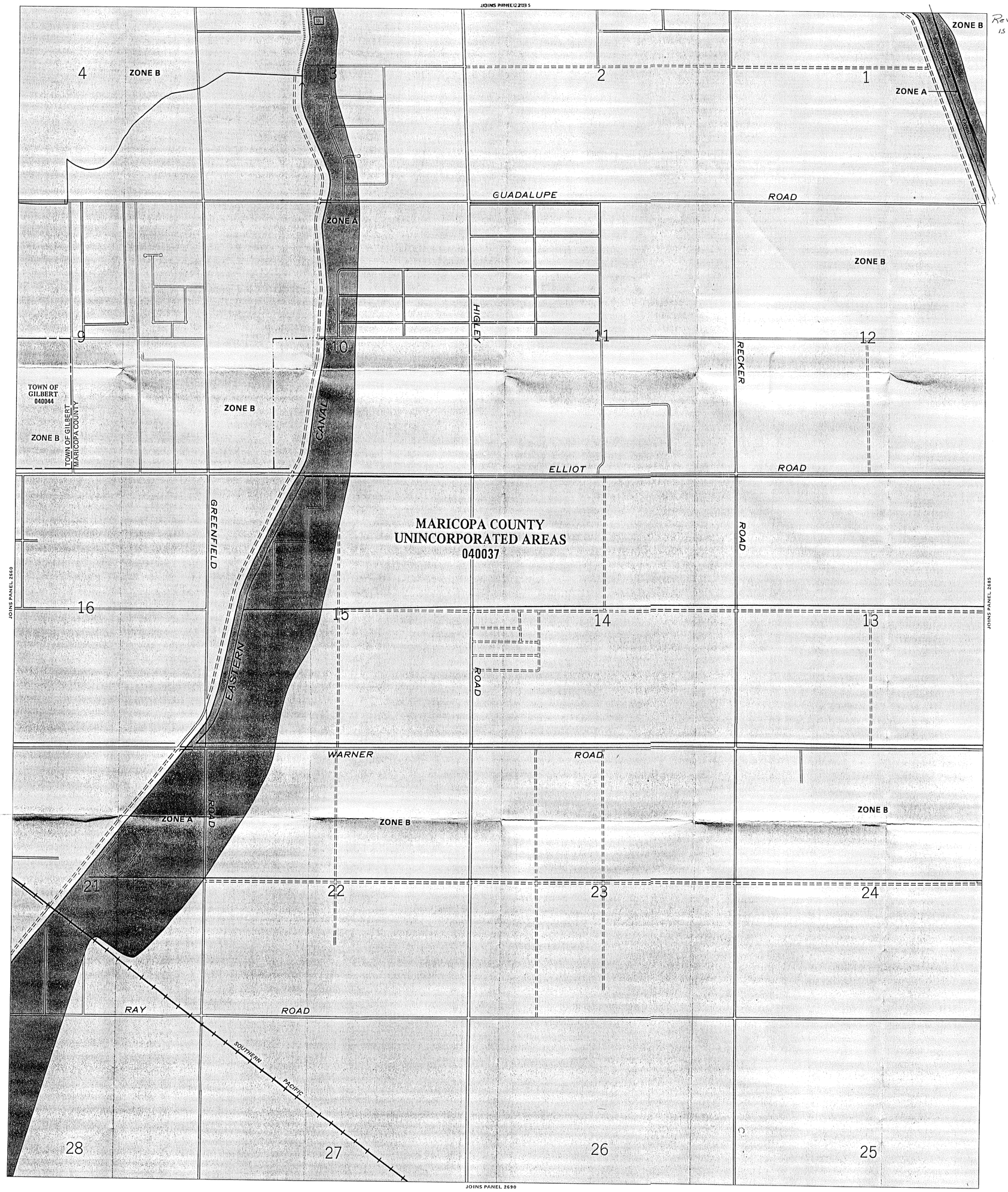
Instrument over Point 44 Backsight Point 43
Instrument Height 5.26 Rod Height 5.30

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor
44	866803.892	568058.422	1357.608	Control Pt
43	868662.607	567583.384	1345.915	Control Pt
Raw Data:	HA 000^00'00"	ZA 090^21'40"	SD 01918.480 ft	

Rod Height changed to 6.03

Data Collection
Single Observations

Point #	Northing/HA	Easting/ZA	Elevation/SD	Descriptor



KEY TO MAP

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

**Referenced to the National Geodetic Vertical Datum of 1929

EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

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

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

Coastal base flood elevations apply only landward of the shoreline.

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

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

For adjoining map panels, see separately printed Map Index.

EFFECTIVE DATE OF
COUNTYWIDE FLOOD INSURANCE RATE MAP
APRIL 15, 1988

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

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE date shown on this map to determine when actuarial rates apply to structures in the zones where elevations or depths have been established.

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620.

N

APPROXIMATE SCALE IN FEET
1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

MARICOPA COUNTY,
ARIZONA AND
INCORPORATED AREAS

PANEL 2680 OF 4350

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
GILBERT, TOWN OF	040044	2680	D
MARICOPA COUNTY, UNINCORPORATED AREAS	040037	2680	D

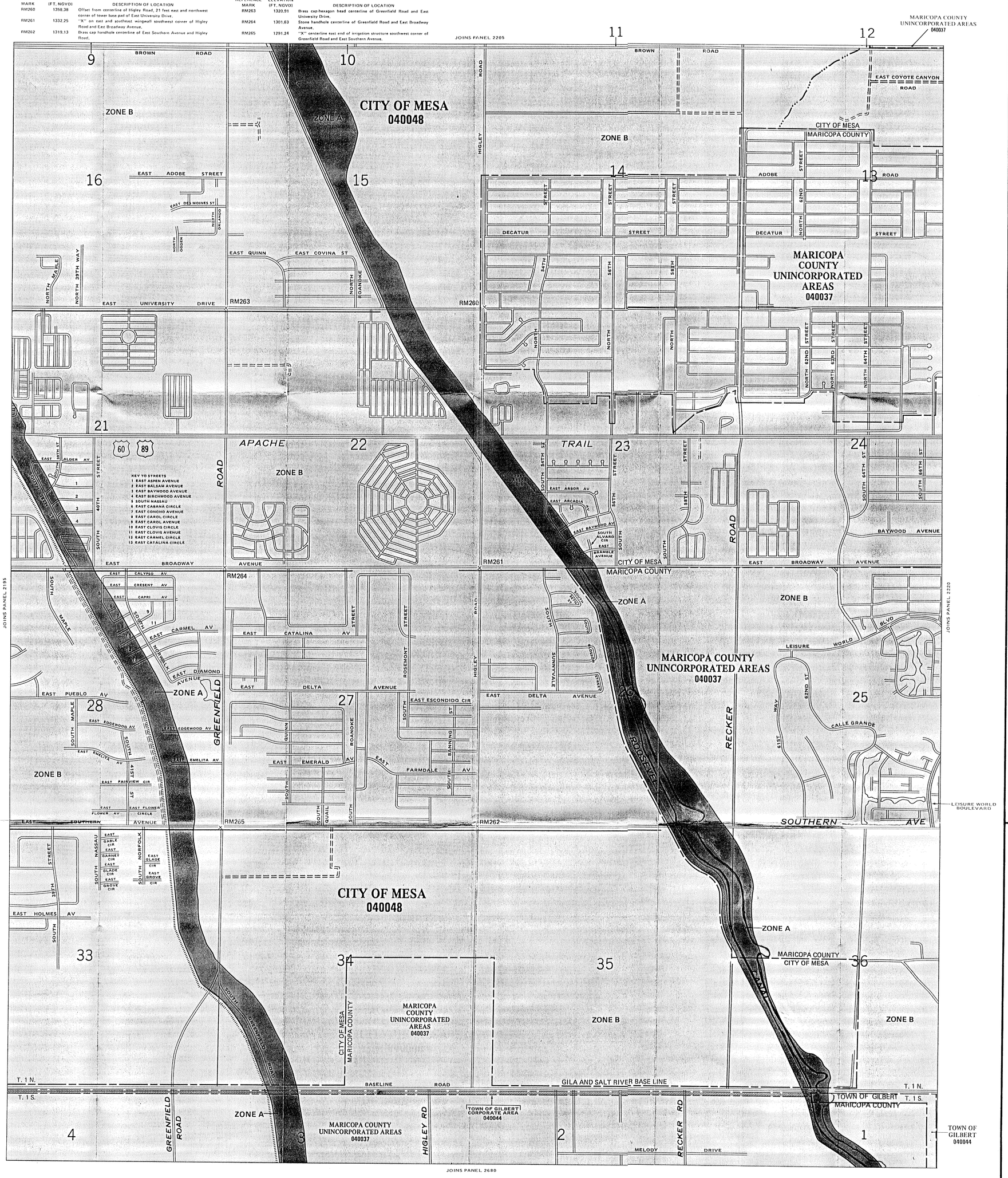
MAP NUMBER
04013C2680 D

EFFECTIVE DATE:
APRIL 15, 1988

Federal Emergency Management Agency

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FT. NGVD)	DESCRIPTION OF LOCATION
RM260	1358.38	Offset from centerline of Higley Road, 21 feet east and northwest corner of tower base pad of East University Drive.
RM261	1332.25	"X" on east and southeast wingwall southwest corner of Higley Road and East Broadway Avenue.
RM262	1319.13	Brass cap handhole centerline of East Southern Avenue and Higley Road.
RM263	1320.91	Brass cap hexagon head centerline of Greenfield Road and East University Drive.
RM264	1301.63	Stone handhole centerline of Greenfield Road and East Broadway Avenue.
RM265	1291.24	"X" centerline east end of irrigation structure southwest corner of Greenfield Road and East Southern Avenue.



NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 1 NORTH, RANGE 6 EAST AND TOWNSHIP 1 SOUTH, RANGE 6 EAST

KEY TO MAP

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

**Referenced to the National Geodetic Vertical Datum of 1929

EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

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

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

Coastal base flood elevations apply only landward of the shoreline.

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

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

For adjoining map panels, see separately printed Map Index.

EFFECTIVE DATE OF
COUNTYWIDE FLOOD INSURANCE RATE MAP:
APRIL 15, 1988

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

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE date shown on this map to determine when actuarial rates apply to structures in the zones where elevations or depths have been established.

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620.

APPROXIMATE SCALE IN FEET
1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

PANEL 2215 OF 4350

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
GILBERT, TOWN OF	040044	2215	D
MARICOPA COUNTY, UNINCORPORATED AREAS	040037	2215	D
MESA, CITY OF	040048	2215	D

MAP NUMBER
04013C2215 D

EFFECTIVE DATE:
APRIL 15, 1988

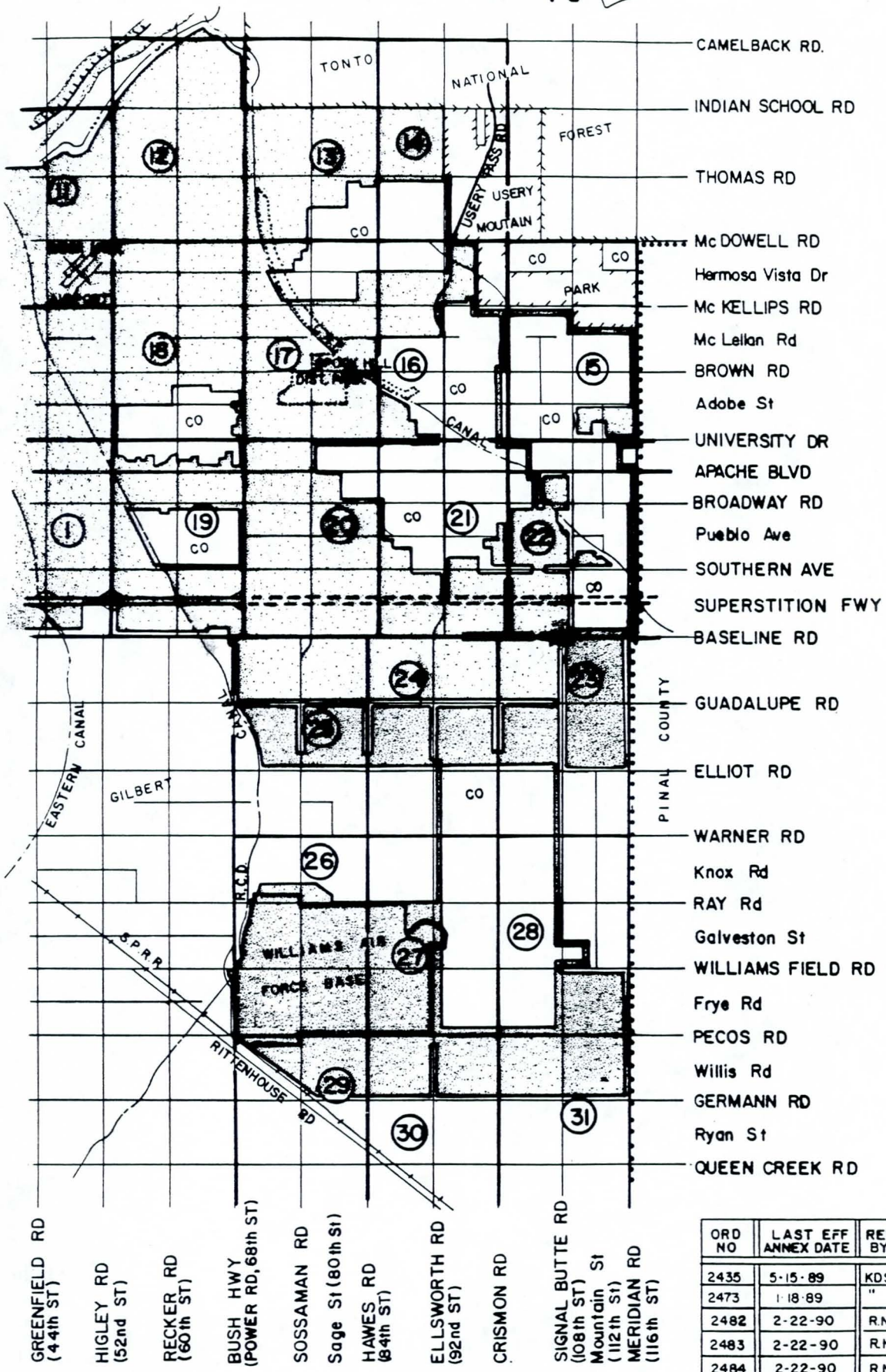
Federal Emergency Management Agency

2.7 COMMUNITY MAPS

MESA
index 2

N

= Study Area



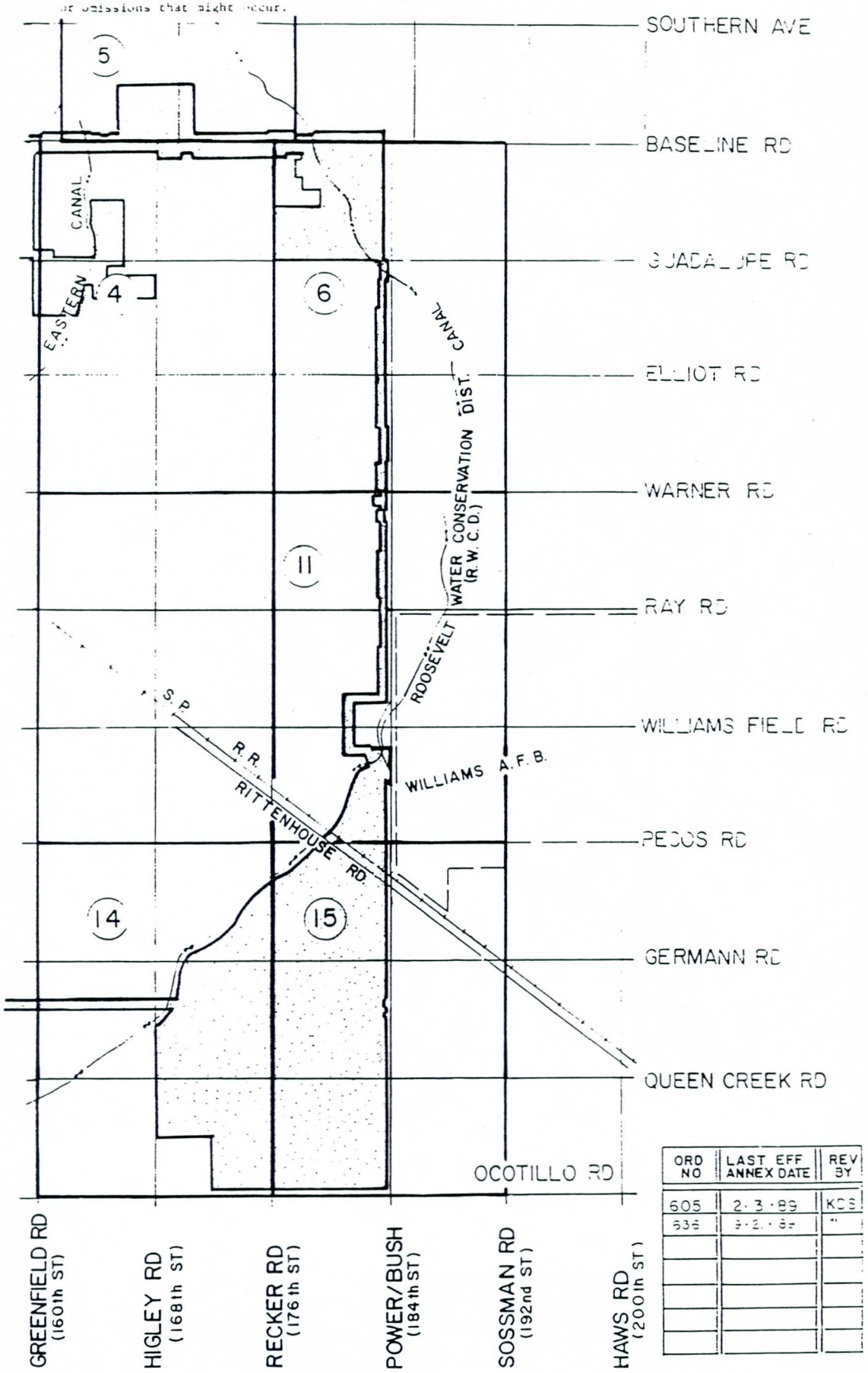
ORD NO	LAST EFF ANNEX DATE	REV BY
2435	5-15-89	KDS
2473	1-18-89	"
2482	2-22-90	R.N.
2483	2-22-90	R.N.
2484	2-22-90	R.N.
2497	4-19-90	R.N.
2514	5-16-90	R.N.

This city limit sheet is to be used as a GUIDE ONLY! Maricopa County will not be responsible for errors or omissions that might occur.

Figure 2

GILBERT
index sheet 2

This city limit sheet is to be used as a GUIDE ONLY: Maricopa County will not be responsible for errors or omissions that might occur.



ORD NO	LAST EFF ANNEX DATE	REV BY
605	2·3·89	KDS
636	3·2·89	"

Figure 3

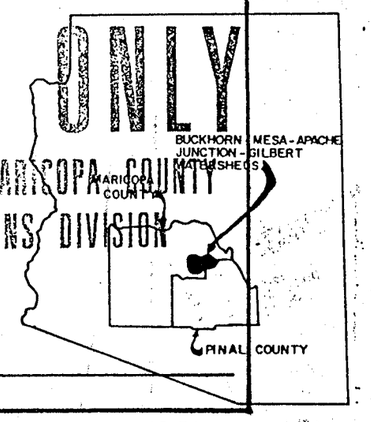
2.8 MISCELLANEOUS MAPS

OFFICE USE ONLY

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

CONSTRUCTION AND OPERATIONS DIVISION

DRAWER # 5



ARIZONA

Greiner — Greiner Engineering Sciences, Inc.

BUCKHORN - MESA - APACHE JUNCTION - GILBERT WATERSHEDS PROTECTION AND FLOOD PREVENTION PROJECT

MARICOPA COUNTY, ARIZONA

PLANS FOR THE CONSTRUCTION OF

EAST MARICOPA FLOODWAY REACH 6

PREPARED FOR THE
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
EAST MARICOPA NATURAL RESOURCE CONSERVATION DISTRICT
BY
SOIL CONSERVATION SERVICE
U. S. DEPARTMENT OF AGRICULTURE

INDEX OF DRAWINGS

DRAWING No.	SHEET No.	TITLE
85015-AZ-CH	1.	INDEX OF DRAWINGS
	2.	LOCATION MAP
	3.	PLAN & PROFILE STA. 29+08.41 RO STA. 45+00.00
	4.	PLAN & PROFILE STA. 45+00.00 TO STA. 65+00.00
	5.	PLAN & PROFILE STA. 65+00.00 TO STA. 85+00.00
	6.	PLAN & PROFILE STA. 85+00.00 TO STA. 105+00.00
	7.	PLAN & PROFILE STA. 105+00.00 TO STA. 125+00.00
	8.	PLAN & PROFILE STA. 125+00.00 TO STA. 145+00.00
	9.	PLAN & PROFILE STA. 145+00.00 TO STA. 161+30.00
	10.	TYPICAL SECTIONS STA. 30+70.00 TO STA. 117+74.12
	11.	TYPICAL SECTIONS STA. 129+98.28 TO STA. 161+30.00
	12.	SIDE INLET AND RAMP DETAILS
	13.	SIDE INLETS AND FLOODWAY TRANSITION STA. 29+00.00 TO STA. 37+00.00
	14.	SIDE INLETS AND FLOODWAY TRANSITION STA. 59+00.00 TO STA. 81+00.00
	15.	SIDE INLETS AND FLOODWAY TRANSITION STA. 87+00.00 TO STA. 95+00.00 AND STA. 143+66.00
	16.	SIDE INLETS AND FLOODWAY TRANSITION STA. 117+74.12 TO STA. 131+00.00
	17.	SIDE INLETS AND FLOODWAY TRANSITION STA. 150+00.00 TO STA. 158+90.67
	18.	PIPE CONNECTION FOR ADJACENT SUBDIVISIONS AND COLLECTOR CHANNEL TABLES AND MISC. DETAILS
	19.	STRUCTURAL DETAILS FOR DOUBLE 6'X7' BOX CULVERT
	20.	STRUCTURAL DETAILS FOR DOUBLE 6'X7' BOX CULVERT
	21.	STRUCTURAL DETAILS FOR DOUBLE 6'X7' BOX CULVERT
	22.	BARRIER DETAIL, PLUG FOR ABANDONED PIPE AND PAY LIMITS FOR 54" CONCRETE PIPE
	23.	MANHOLE ADJUSTMENT & DRIVEWAY DETAILS
	24.	BRIDGE OPENING DETAIL AND EROSION PROTECTION AT UNIVERSITY DRIVE
	25.	IDENTIFICATION SIGN

STRUCTURAL NOTES

1. EXPOSED CONCRETE EDGES SHALL BE CHAMFERED ONE INCH OR ROUNDED.
2. REINFORCING BAR SPACING IS CENTER TO CENTER OF BARS. BAR COVER IS CLEAR DISTANCE FROM SURFACE OF BAR AND FACE OF CONCRETE AND SHALL BE TWO INCHES FOR FORMED AND TOP SURFACES AND THREE INCHES FOR SURFACES PLACED AGAINST EARTH UNLESS OTHERWISE SHOWN.
3. IN SECTIONS WITH A SINGLE MAT OF REINFORCING, THE STEEL SHALL BE POSITIONED IN THE CENTER OF THE SECTION UNLESS OTHERWISE SHOWN.
4. BAR SPLICES SHALL BE LAPPED AS FOLLOWS EXCEPT WHERE SPECIFICALLY SHOWN OTHERWISE. SPLICES SHALL BE STAGGERED SO THAT NO MORE THAN 1/2 OF THE BARS ARE SPLICED AT ONE LOCATION. BAR SPLICES SHALL BE LAPPED AS FOLLOWS:

SIZES	LAP (IN.)
4	18
5	23
6	27
7	34
8	44

5. ALL EXPOSED METAL INCLUDING ANCHOR BOLTS, NUTS, WASHERS, ETC. SHALL BE GALVANIZED UNLESS OTHERWISE NOTED.
6. ALL CONCRETE SHALL BE 4000X EXCEPT AS NOTED.

GENERAL NOTES

1. ELEVATIONS ARE IN FEET AND BASED ON SCS DATUM "ANDERSON".
2. ALL STATIONING REFERS TO SURVEY BASELINE OF FLOODWAY AND IS THE MEASURED HORIZONTAL DISTANCE. THE SURVEY BASELINE AND THE CENTERLINE OF THE FLOODWAY ARE ONE IN THE SAME EXCEPT THROUGH CURVES WHERE STATIONING EQUATIONS HAVE BEEN MADE FOR THE FLOODWAY CENTERLINE.
3. ALL SOIL CLASSIFICATION SYMBOLS SHOWN ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM. FIELD IDENTIFICATION WAS USED EXCEPT WHERE INDICATED BY AN ASTERISK (*). THIS DENOTES LABORATORY CLASSIFICATION. LOGS AND DESCRIPTIONS ARE ABRIDGED. COMPLETE DRILLING LOGS, LABORATORY REPORTS AND GEOLOGY REPORT ARE AVAILABLE FOR INSPECTION AT THE PROJECT OFFICE.
4. ALL BEARINGS ARE REFERENCED TO TRUE NORTH.
5. ALL FLOODWAY CROSS SECTIONS ARE SHOWN LOOKING IN THE DIRECTION OF INCREASING STATIONS UNLESS OTHERWISE NOTED.
6. LOCATION OF UTILITIES SHOWN ON THE DRAWINGS IS APPROXIMATE AND IS NOT INTENDED TO BE ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING AND COORDINATING HIS WORK WITH ALL UTILITY COMPANIES.

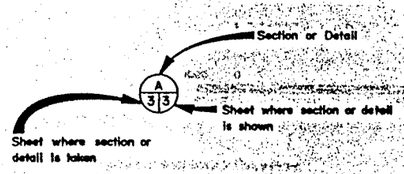
BENCHMARKS

BM01. UNIVERSITY DRIVE AT THE FLOODWAY 1347.58 CHISELED SQUARE IN THE EAST END OF THE SOUTH BRIDGE WALL (CANAL BRIDGE)

BM02. BROWN ROAD AT THE FLOODWAY 1351.63 B.C. IN THE WEST END OF THE NORTH WALL OF THE CANAL BRIDGE

BM03. APACHE BOULEVARD (MAIN STREET) AT THE FLOODWAY 1345.05 B.C. IN THE SOUTH BRIDGE WALL (CANAL BRIDGE)

BM07. BROADWAY ROAD AT THE FLOODWAY 1346.81 BLACK X NORTHWEST CORNER OF THE FLOODWAY BRIDGE WALL



LEGEND

- TEST PIT
- BENCHMARK
- —P— POWER LINE
- —T— TELEPHONE LINE
- + COORDINATE GRID POINTS
- △ SURVEY MONUMENTS
- △ AERIAL CONTROL POINTS
- TCE TEMPORARY CONSTRUCTION EASEMENT
- ℄ SURVEY BASELINE
- ⟵ EXISTING DOWNGUY

EAST MARICOPA NATURAL RESOURCE CONSERVATION DISTRICT
APPROVED
DATE 4-12-88 — CHAIRMAN BOARD OF SUPERVISORS

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
APPROVED
DATE 4-5-88 — CHIEF ENGINEER

REVISIONS

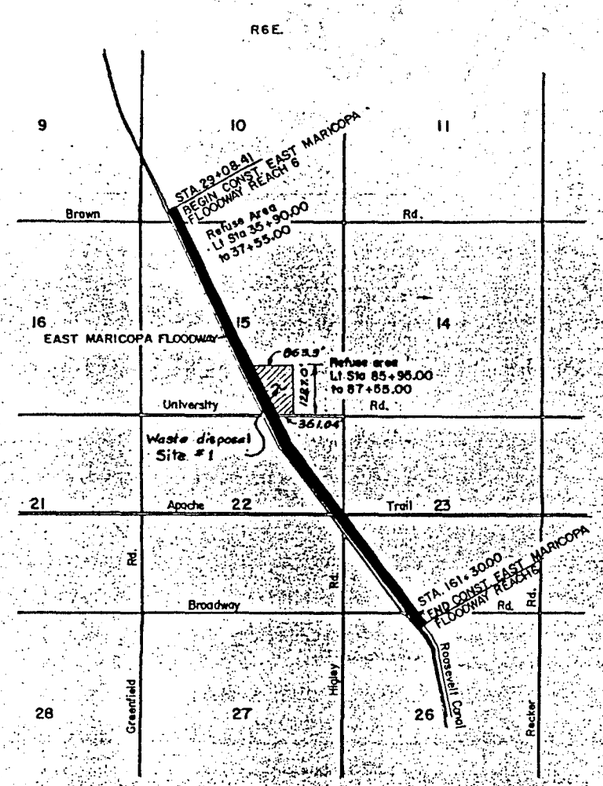
INDEX OF DRAWING
EAST MARICOPA FLOODWAY REACH 6
BUCKHORN-MESA-APACHE JUNCTION-GILBERT WATERSHEDS
MARICOPA COUNTY, ARIZONA

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed RDB / BAB — Date 2/1/87 — Approved — Title State Conservation Engineer
Drawn A.K. / I.J.H. — Date 2/25/87 — Title HEAD, ENG. STAFF ENT
Traced — Sheet No. 1 of 25 — Drawing No. 85015-AZ-CH
Checked MSS / MRM — Date 2/26/87

SCS-ENG-111C REV. 1-77

Greiner — Greiner Engineering Sciences, Inc.



DEFINITIONS

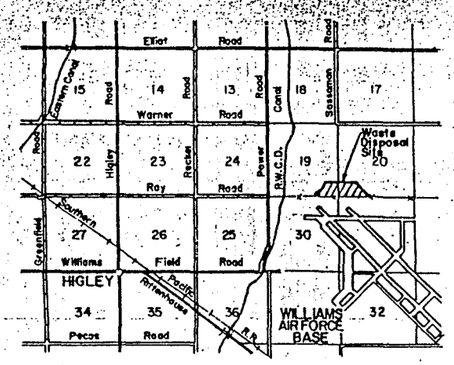
Waste (Spec. 21) All surplus or unsuitable excavated material.

Refuse (Spec. 283) All materials resulting from clearing and grubbing and structure removal.

LOCATION MAP

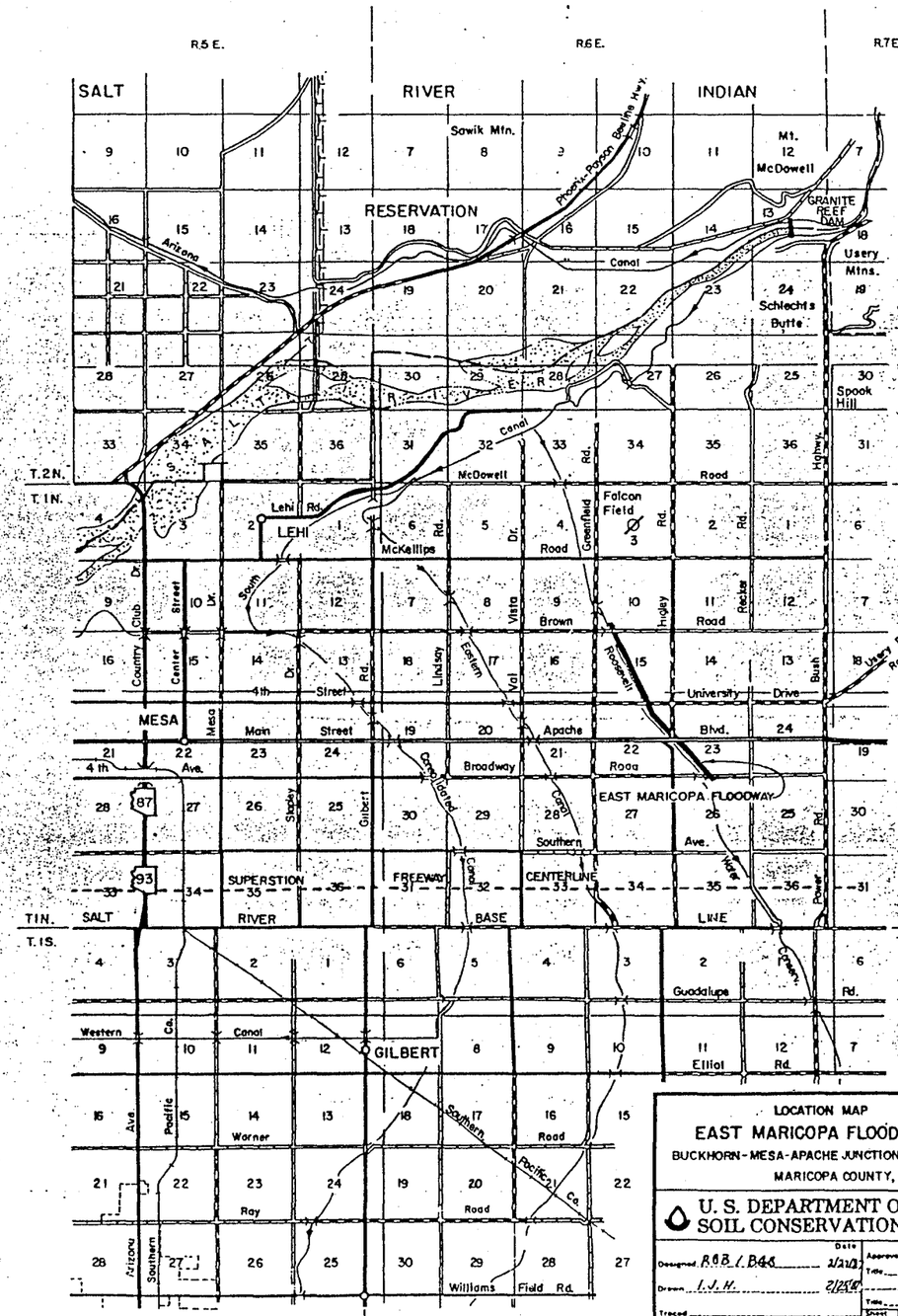
1000 0 6000
SCALE IN FEET

Notice shall be given to Williams Air Force Base prior to use of waste disposal site.
Contact: Air Manager, Lt. Col. Jerry Homewood 988-5297
Base Engineers Office, Mike R. Toriello 998-6887



WASTE DISPOSAL SITE #2

Maximum fill height (above existing ground) for waste site shall be 3.00'.



LOCATION MAP
EAST MARICOPA FLOODWAY REACH 6
BUCKHORN-MESA-APACHE JUNCTION-GILBERT WATERSHEDS
MARICOPA COUNTY, ARIZONA

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

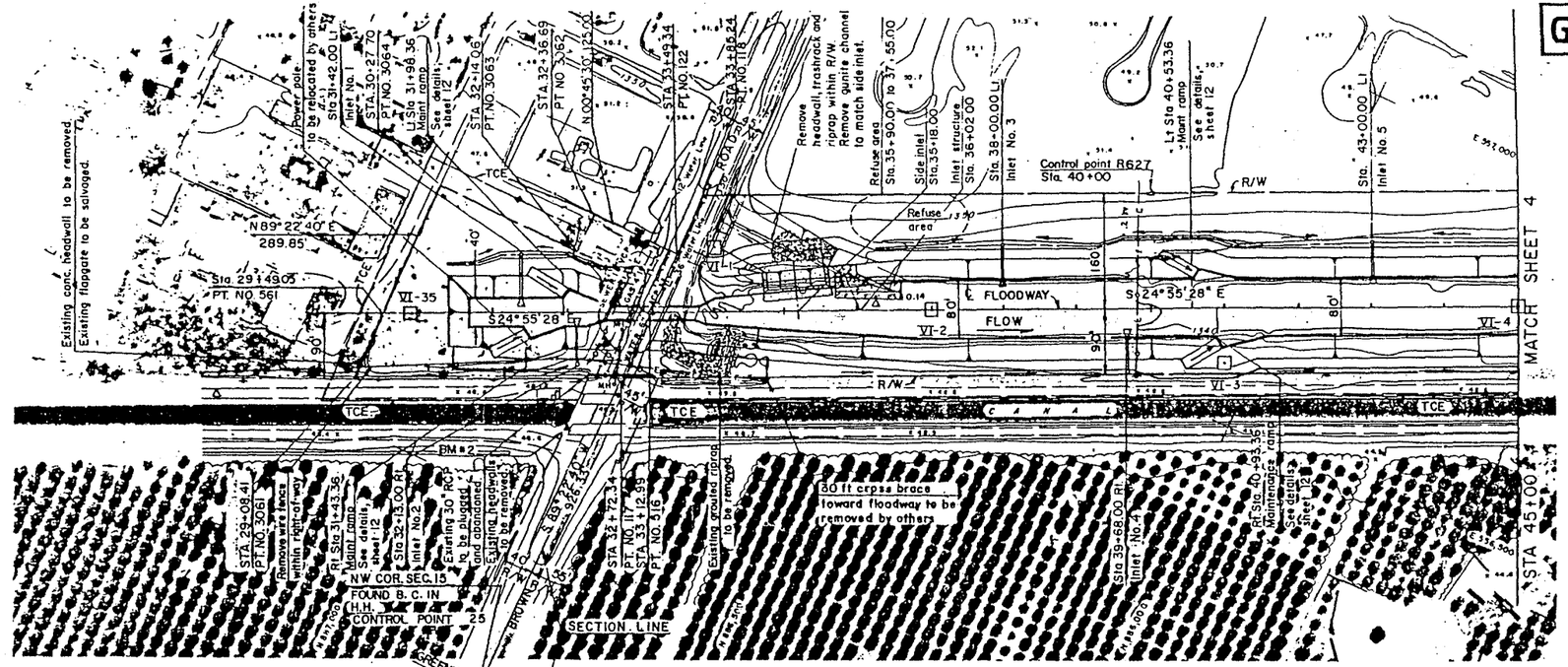
Designed R.O.B. / B.A.G.	Date 2/21/83	Approved by	
Drawn I.J.H.	2/25/83	Title	
Traced		Title	
Checked		Sheet No. 2 of 25	Drawing No. 85015-AZ-CH

Greiner — Greiner Engineering Sciences, Inc.

Contractor to use caution around power poles on west side of floodway when grading the collector channels.

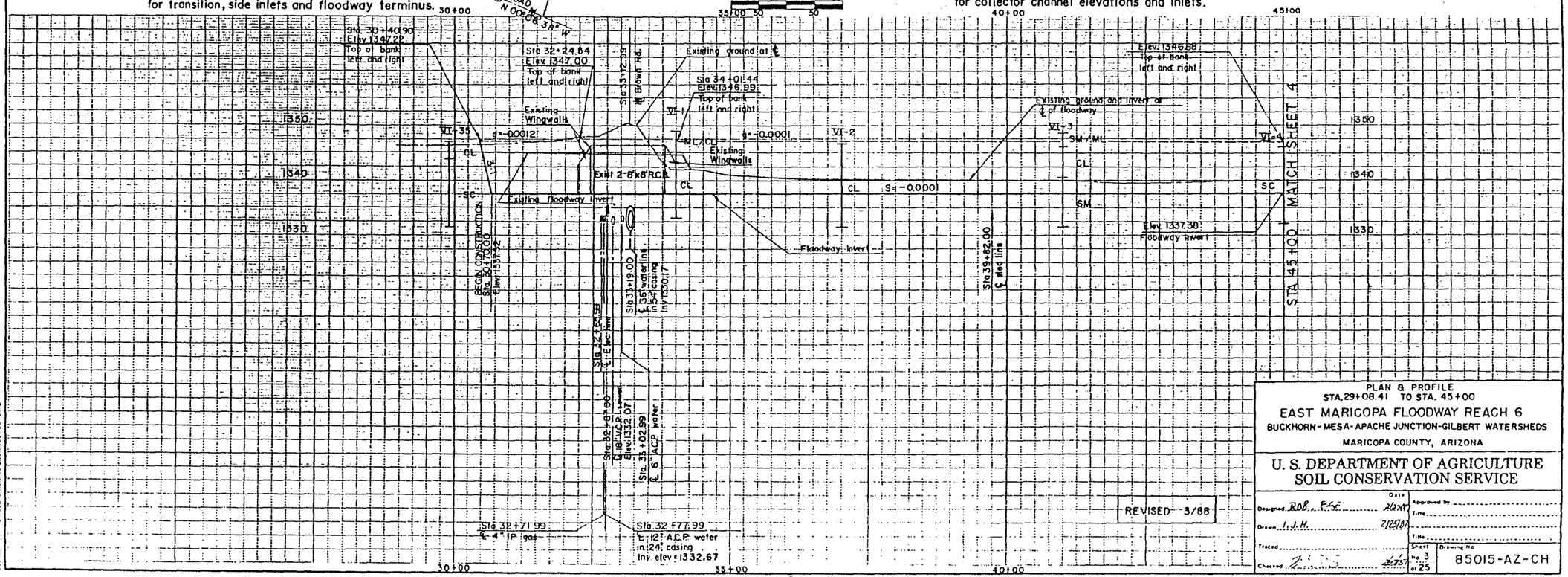
SECTION 10
T-1-N, R-6-E

SECTION 15
T-1-N, R-6-E



Sta 29+08.41 to Sta 37+00.00 see detail sheet 13
for transition, side inlets and floodway terminus.

See sheet 18
for collector channel elevations and inlets.



PLAN & PROFILE
STA. 29+08.41 TO STA. 45+00

EAST MARICOPA FLOODWAY REACH 6

BUCKHORN-MESA-APACHE JUNCTION-GILBERT WATERSHEDS

MARICOPA COUNTY, ARIZONA

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed ROB, PAS	Date 2/6/87	Approved by	
Drawn I.J.H.	2/25/87	Title	
Traced		Title	
Checked	2/25/87	Sheet No. 3 of 25	Drawing No. 85015-AZ-CH

KENNEY AERIAL MAPPING INC.

SCS-ENG-317, Rev. 3-69

APACHE JUNCTION-GILBERT WATERSHED PROTECTION AND FLOOD PREVENTION PROJECT MARICOPA COUNTY, ARIZONA

PLANS FOR THE CONSTRUCTION OF

EAST MARICOPA FLOODWAY REACH 5

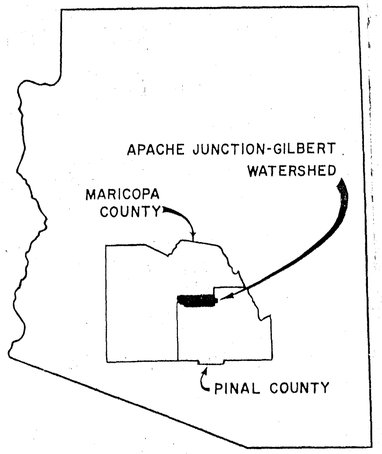
(FORMERLY NAMED R.W.C.D. FLOODWAY REACH 5)

PREPARED FOR THE

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
EAST MARICOPA NATURAL RESOURCE CONSERVATION DISTRICT

BY

SOIL CONSERVATION SERVICE
U. S. DEPARTMENT OF AGRICULTURE



ARIZONA

N

OFFICE USE ONLY
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
CONSTRUCTION AND OPERATIONS DIVISION
DRAWER # 5

INDEX

SHEET NO.	TITLE
1.	INDEX OF DRAWINGS
2.	LOCATION MAP
3.	PLAN & PROFILE STA. 323+50 TO STA. 325+00
4.	PLAN & PROFILE STA. 325+00 TO STA. 345+00
5.	PLAN & PROFILE STA. 345+00 TO STA. 365+00
6.	PLAN & PROFILE STA. 365+00 TO STA. 385+00
7.	PLAN & PROFILE STA. 385+00 TO STA. 405+00
8.	PLAN & PROFILE STA. 405+00 TO STA. 425+00
9.	PLAN & PROFILE STA. 425+00 TO STA. 445+00
10.	PLAN & PROFILE STA. 445+00 TO STA. 465+00
11.	PLAN & PROFILE STA. 465+00 TO STA. 485+00
12.	PLAN & PROFILE STA. 485+00 TO STA. 485+13.08
13.	TYPICAL EARTH CROSS SECTIONS
14.	TYPICAL EARTH CROSS SECTIONS
15.	BRIDGE SECTION DETAILS
16.	POWER ROAD AND GUADALUPE ROAD LAYOUT
17.	SIDE INLET NO. 1
18.	TYPICAL CROSS SECTIONS, SIDE INLET NO. 1 AND TAIL WATER RECOVERY PIT
19.	SIDE INLET DETAILS NO. 2 TO NO. 10
20.	MAINTENANCE ROAD DRAIN
21.	FARM TAIL WATER DRAINS
22.	DETAILS OF R/C TAIL WATER STRUCTURE
23.	WARNER ROAD TURN OUT STRUCTURE OUTLET
24.	WARNER ROAD TURN OUT STRUCTURE DETAILS
25.	42 INCH C.M.P. OUTLET
26.	BACK FLOW CONTROL STRUCTURE
27.	18" OVER FLOW PIPE
28.	ELLIOT ROAD SYPHON
29.	RAMP LAYOUT AND MISCELLANEOUS DETAILS
30.	IDENTIFICATION SIGN

STRUCTURAL NOTES

1. Exposed Concrete edges shall be chamfered one inch or rounded.
2. Reinforcing bar spacing is center to center of bars. Bar Cover is clear distance from surface of bar and face of concrete and and shall be two inches for formed and top surfaces and three inches for surfaces placed against earth unless otherwise shown.
3. In sections with a single mat of reinforcing, the steel shall be positioned in the center of the section unless otherwise shown.
4. Bar Splices shall be lapped as follows, except where specifically shown otherwise. Splices shall be staggered so that no more than ½ of the bars are spliced at one location:

SIZES	LAP (IN.)
4	16
5	19

5. All exposed metal including anchor bolts, nuts, washers, etc. shall be galvanized unless otherwise noted.
6. All concrete shall be 4000 except as noted.

LEGEND

- Coordinate Point
- Survey Point
- Aerial Survey Marker
- Geology Test Pit
- ℄ Center Line
- Right of Way
- Pipe Line
- —P— Power Line
- —T— Telephone Line
- Drainage Ditch

GENERAL NOTES

1. All Elevations are in Local System called "ANDERSON". Elevation corrected to 1203.390.
2. All Stationing refers to Centerline of Construction and is the measured Horizontal Distance.
3. All Soil Classification Symbols shown are based on the Unified Soil Classification System (ASTM D 2487). Field Identification was used where indicated by an Asterisk (*). This denotes Laboratory Classification. Logs and Descriptions are Abridged. Complete Drilling Logs, Laboratory Reports and Geology Reports are available for inspection at the Project Office.
4. All Bearings are referenced to True North.
5. All Floodway Cross Sections are shown looking in the direction of Increasing Stations except as noted.
6. Location of Utilities shown on the drawings is approximate and is not intended to be all inclusive. The Contractor is responsible for contacting and coordinating his work with all Utility Companies.

Direction of Section or Detail — Section or Detail (A, 14|25) — Sheet from which it is taken — Sheet on which it is shown

Section or Detail (B) — When taken & shown on same sheet

EAST MARICOPA NATURAL RESOURCE CONSERVATION DISTRICT	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY	REVISIONS
APPROVED	APPROVED	
DATE _____ CHAIRMAN BOARD OF SUPERVISORS	DATE 5-12-87 D. Lofgraniso CHIEF ENGINEER	

INDEX OF DRAWINGS
EAST MARICOPA FLOODWAY REACH 5
APACHE JUNCTION-GILBERT W.P.P.
MARICOPA COUNTY, ARIZONA

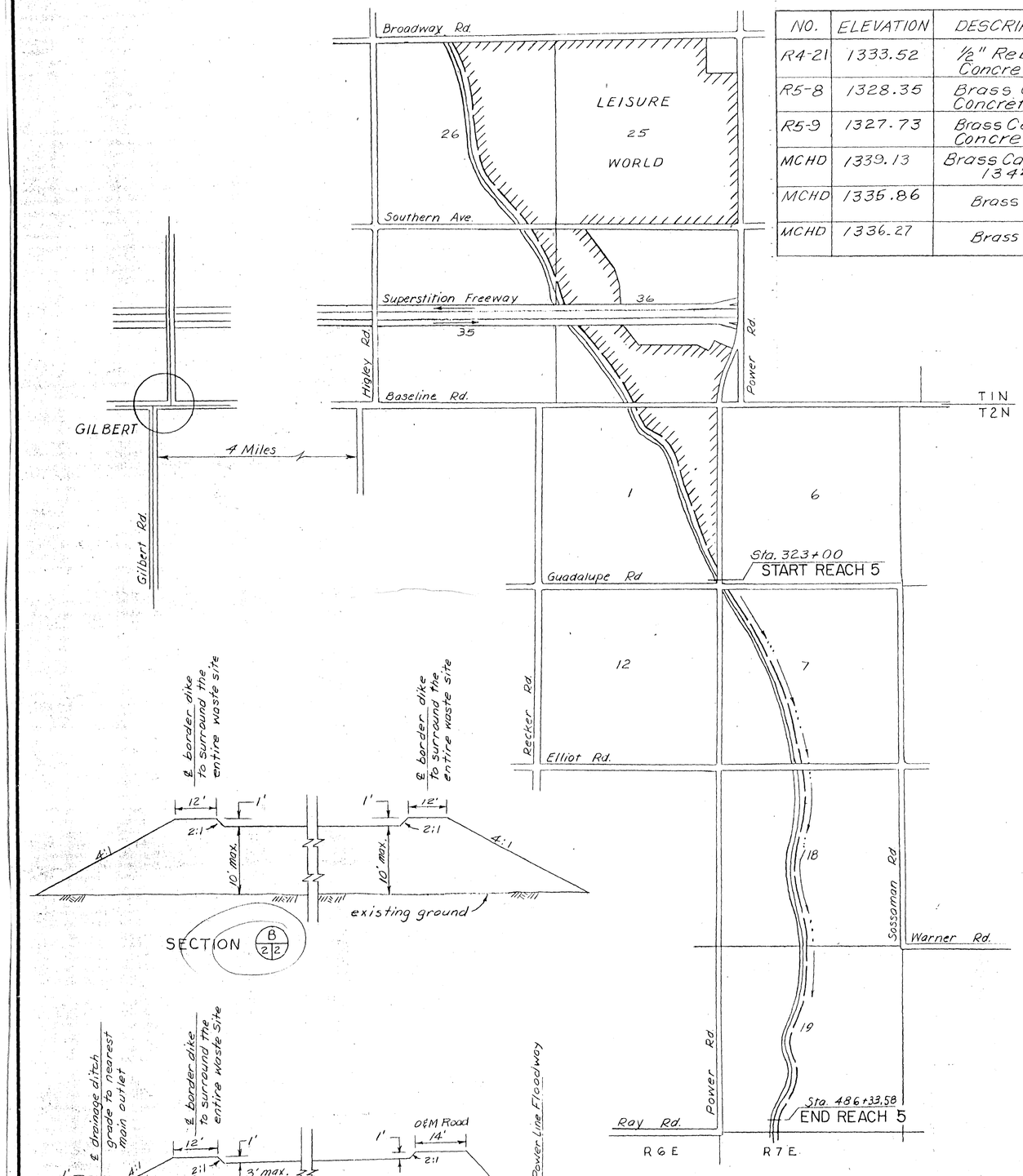
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed S.C.S.	Date 3/87	Approved by Ralph M. Carey for THE STATE CONSERVATION ENGINEER 7/87
Drawn S.C.S.	3/87	Donald C. Walker 5-8-87
Traced		THE ACTING STATE CONSERVATIONIST
Checked R.J.M.	5/87	Sheet No. 1 of 30 — Drawing No. AZ-87001-0

☆ U.S. GOVERNMENT PRINTING OFFICE : 1973 O—491-729

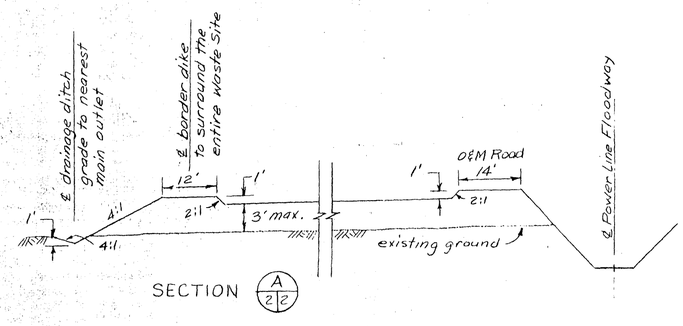
BENCH MARKS

NO.	ELEVATION	DESCRIPTION	LOCATION
R4-21	1333.52	½" Rebar in Concrete	Sta. 491+50± R/W Line Rt. Side
R5-8	1328.35	Brass Cap in Concrete	Sta. 402+22± R/W Line Rt. Side
R5-9	1327.73	Brass Cap in Concrete	Sta. 390+34± R/W Line Rt. Side
MCHD	1339.13	Brass Cap Marked 1344.72	S.W. Wall Elliot Road Bridge
MCHD	1335.86	Brass Cap	N.E. Corner Guadalupe Road Bridge
MCHD	1336.27	Brass Cap	N.W. Corner Power Road Bridge

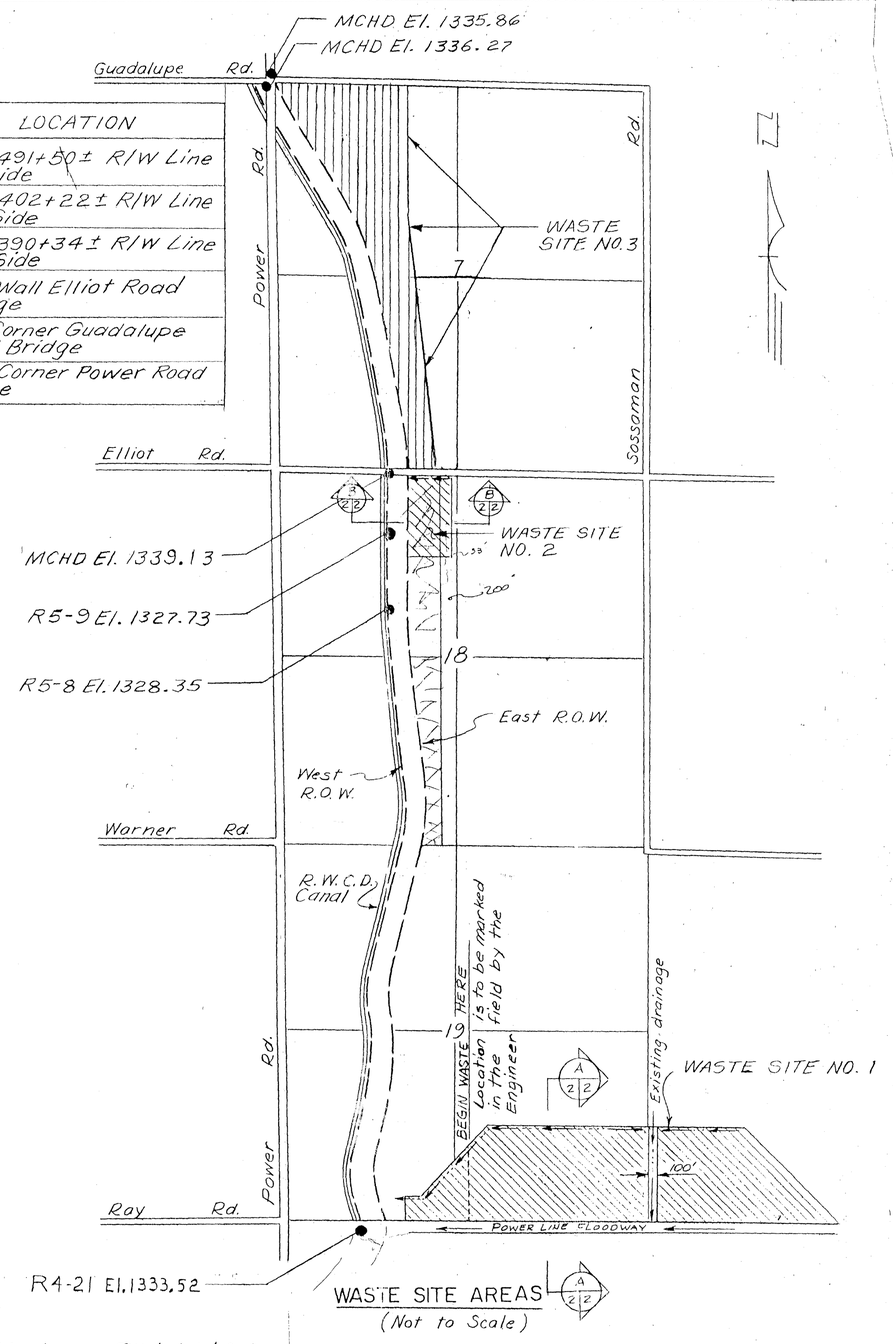


LOCATION MAP

SECTION B 2/2



SECTION A 2/2



WASTE SITE AREAS (Not to Scale)

NOTES:

1. Maximum Fill height (above existing ground) for Waste Sites

Site	Height	Approx. Volume
1	3'-0"	590,000 Cu. Yds.
2	10'-0"	247,000 Cu. Yds.
3	Varies	264,000 Cu. Yds.

2. Notice shall be given to Williams Air Force Base prior to use of Waste Site 1.
   Air Field Manager 988-5297
   Base Engineer 988-6887

3. Begin waste fill for Site No. 1 at the designated line and proceed filling east until the area east of the designated line is all filled to a depth of 2.0 ft. Then the area west of the designated beginning may be filled.

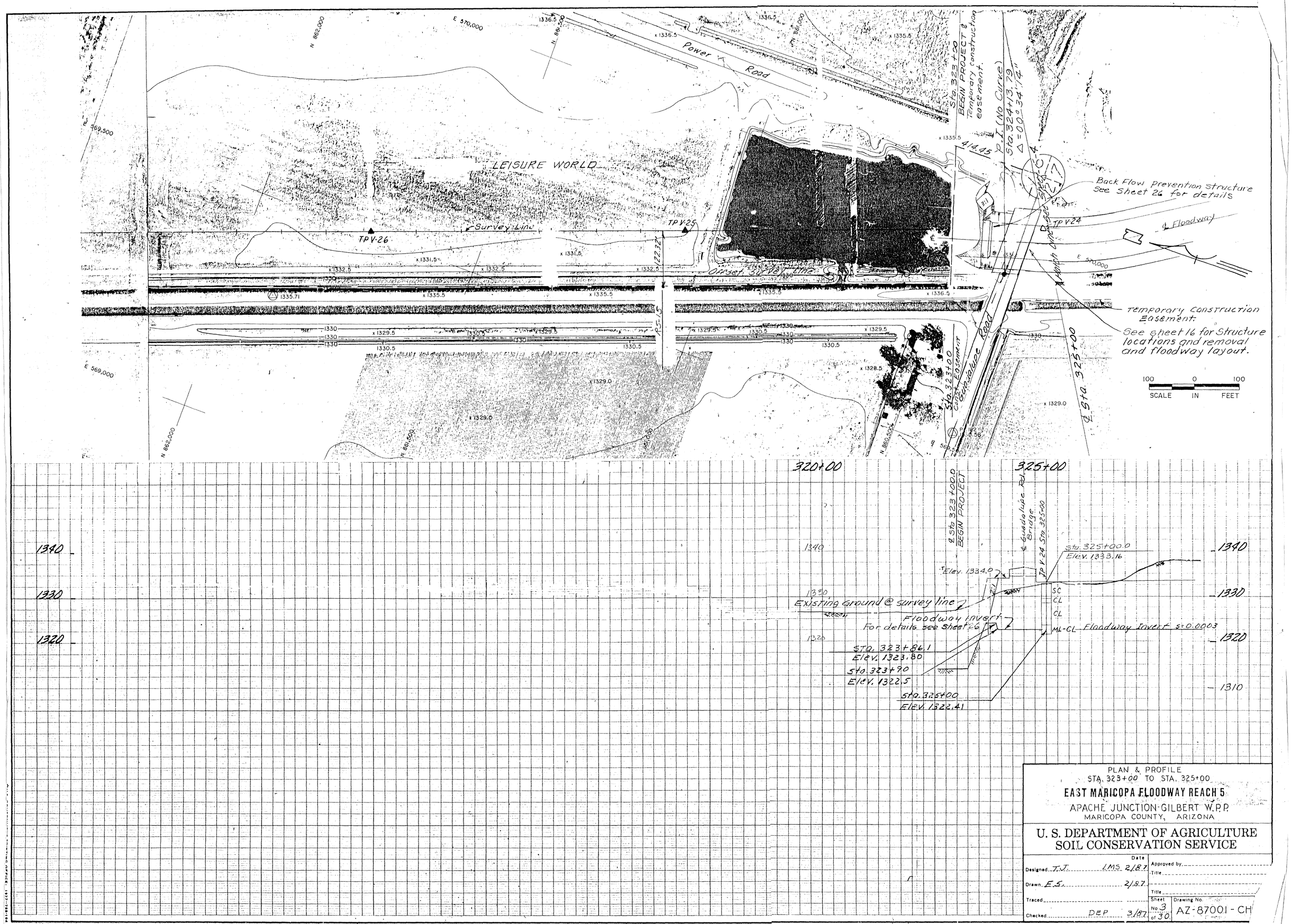
LOCATION MAP
EAST MARICOPA FLOODWAY REACH 5
APACHE JUNCTION - GILBERT W.P.P.
MARICOPA COUNTY, ARIZONA

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

		Date	
Designed	LMS		Approved by
Drawn	R.A.P. & E.S.	9/86	Title
Traced			Title
Checked	DEP	3-87	Sheet No. 2 of 30 — Drawing No. AZ-87001

SCS-ENG-

☆ U.S. GOVERNMENT PRINTING OFFICE : 1973 O—491-729



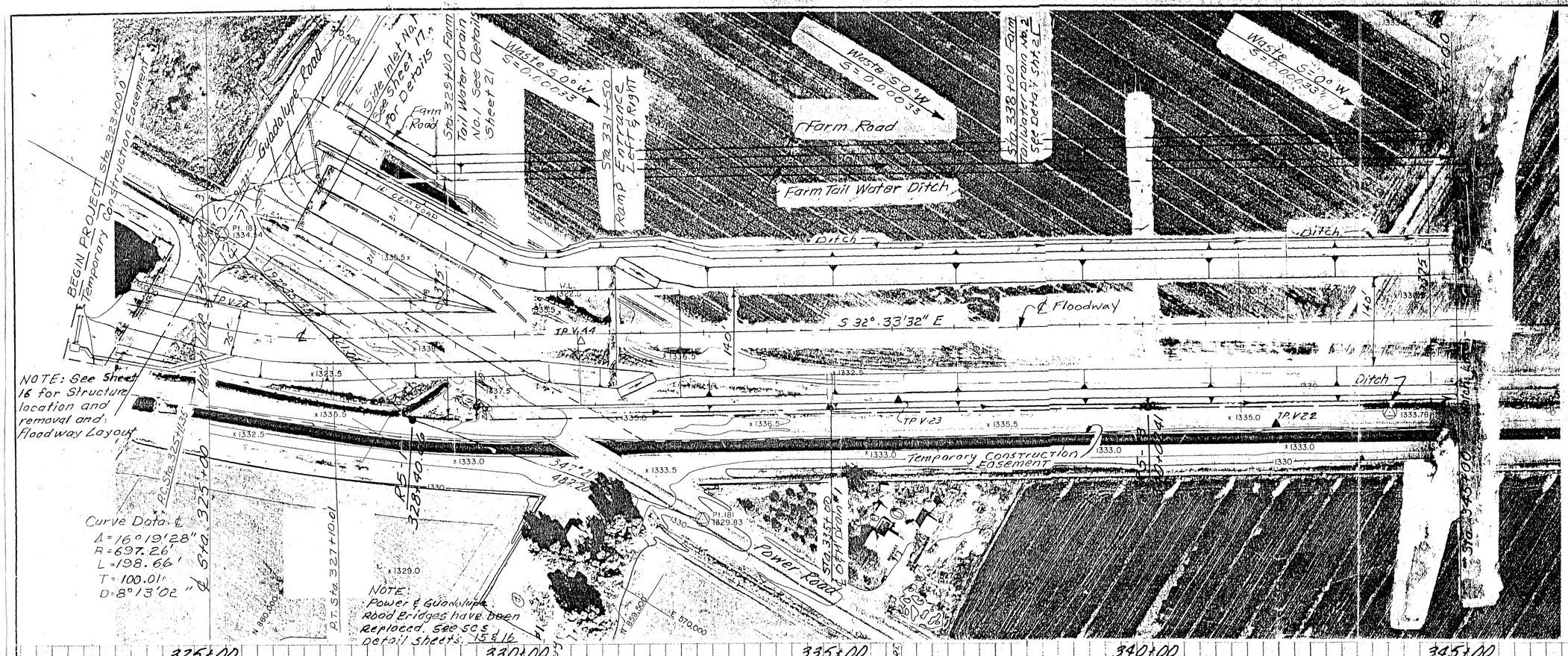
PLAN & PROFILE
STA. 323+00 TO STA. 325+00

EAST MARICOPA FLOODWAY REACH 5

APACHE JUNCTION-GILBERT W.P.P.
MARICOPA COUNTY, ARIZONA

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

	Date		
Designed T.J.	LMS 2/87	Approved by	
Drawn E.S.	2/87	Title	
Traced		Sheet No. 3 of 30	Drawing No. AZ-87001-CH
Checked DEP	3/87		



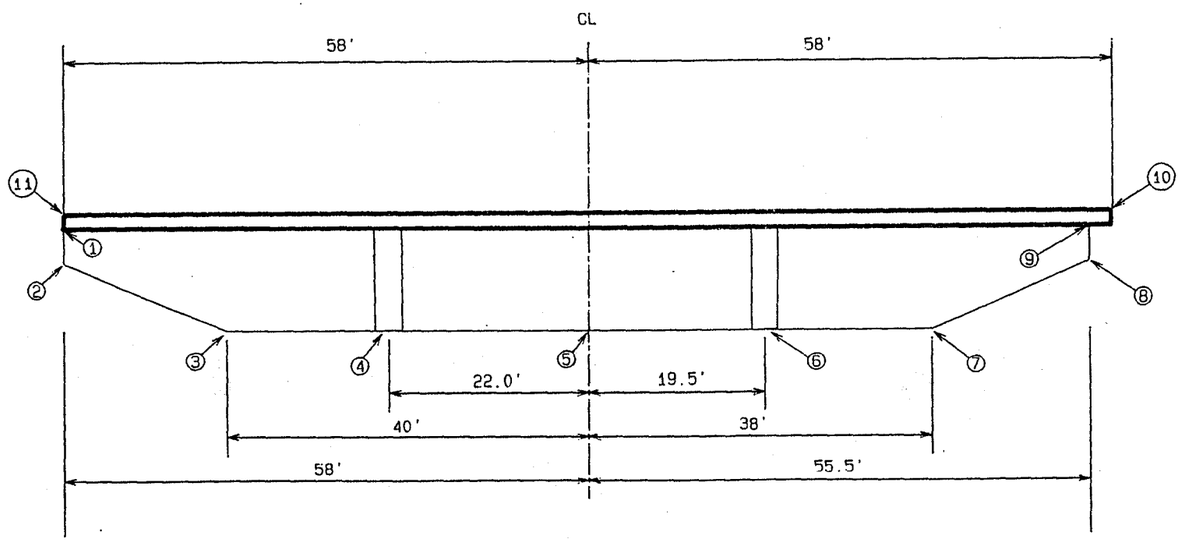
PLAN & PROFILE
STA. 325+00 TO STA. 345+00
EAST MARICOPA FLOODWAY REACH 5
APACHE JUNCTION-GILBERT W.P.P.
MARICOPA COUNTY, ARIZONA

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

		Date	
Designed	TSJ LMS	2/87	Approved by
Drawn	E.S. JEB	2/87	Title
Traced			Title
Checked	DEP	3-87	Sheet No. 4 of 30 — Drawing No. AZ-87001-CH

U.S. GOVERNMENT PRINTING OFFICE: 1977 748-104

LOCATION	ELEVATIONS NORTH S.	SOUTH S.	DESCRIPTION
1	1334.00	1333.89	BOTTOM DECK
2	1330.17	1330.74	TOP CHANNEL
3	1323.07	1322.57	TOE CHANNEL
4	1322.46	1322.66	COLUMN
5	1322.53	1322.55	CENTER LINE
6	1322.71	1322.68	COLUMN
7	1322.77	1322.88	TOE CHANNEL
8	1330.32	1330.61	TOP CHANNEL
9	1334.23	1334.24	BOTTOM DECK
10	1335.88	1335.87	TOP DECK
11	1335.67	1335.59	TOP DECK



GUADALUPE RD. BRIDGE

NORTH SIDE LOOKING SOUTH

NAME:

CAD. FILE: A_1960194

COMPUTER MSUS: :.1405

DXF FILE NAME: 1960194.DXF

UNITS: FEET

SCALE: 1"=1'

PLOT RATIO: 1:200

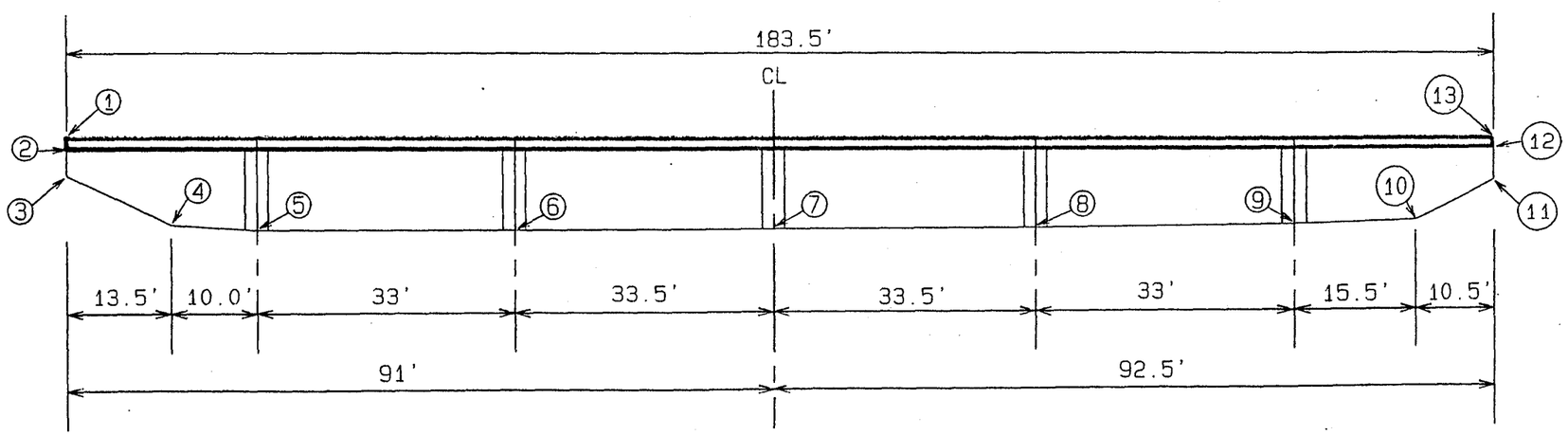
SETS: LINES

SETS: LINES

SETS: TEXT

SETS: MISC

LOCATION	ELEVATIONS NORTH S.	ELEVATIONS SOUTH S.	DESCRIPTION
1	1339.24	1339.17	TOP DECK
2	1337.71	1337.57	BOTTOM DECK
3	1334.14	1334.39	TOP CHANNEL
4	1327.89	1328.00	TOE CHANNEL
5	1327.12	1327.51	COLUMN
6	1327.01	1327.04	COLUMN
7	1326.97	1326.63	CL COLUMN
8	1326.93	1326.63	COLUMN
9	1327.19	1327.20	COLUMN
10	1327.64	1328.14	TOE CHANNEL
11	1336.94	1336.36	TOP CHANNEL
12	1332.80	1332.99	BOTTOM DECK
13	1338.27	1338.08	TOP DECK



BASELINE RD.

NORTH SIDE LOOKING NORTH

SETS: MISCL.

SETS: TEXT

SETS: LINES

SETS: LINES

NAME:

CAD. FILE: A-19601BA

COMPUTER MSUS: :,1405

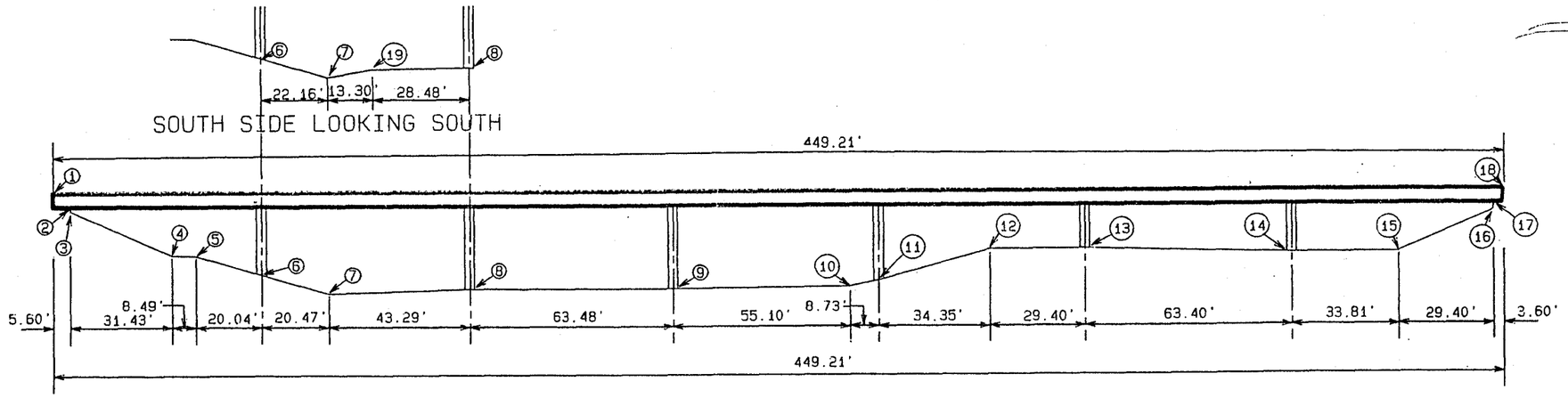
DXF FILE NAME: 19601BA.DXF

UNITS: FEET

SCALE: 1"=1'

PLOT RATIO: 1:220

LOCATION	ELEVATIONS NORTH S.	SOUTH S.	DESCRIPTION
1	1357.91	1357.73	TOP DECK
2	1353.39	1353.14	BOTTOM DECK
3	1352.23	1352.11	TOP CHANNEL
4	1338.09	1337.77	TOE @ SHELF
5	1337.96	1337.51	TOP @ SHELF
6	1331.90	1331.24	COLUMN
7	1326.16	1324.89	TOE LOW FLOW
8	1327.48	1327.77	COLUMN
9	1327.41	1327.64	COLUMN
10	1327.92	1327.92	TOE LOW FLOW
11	1329.76	1328.83	COLUMN
12	1339.43	1338.89	TOP LOW FLOW
13	1339.56	1339.66	COLUMN
14	1337.94	1338.15	COLUMN
15	1337.99	1337.82	TOE CHANNEL
16	1350.89	1351.07	TOP CHANNEL
17	1352.96	1353.09	BOTTOM DECK
18	1357.49	1357.62	TOP DECK
19		1327.49	FL LOW FLOW



SUPERSTITION FREEWAY

NORTH SIDE LOOKING SOUTH

SETS: MISCL.

SETS: TEXT — TEXT

SETS: LINES

SETS: LINES — PLN

NAME:

CAD. FILE: A-1960150

COMPUTER MSUS: :,1405

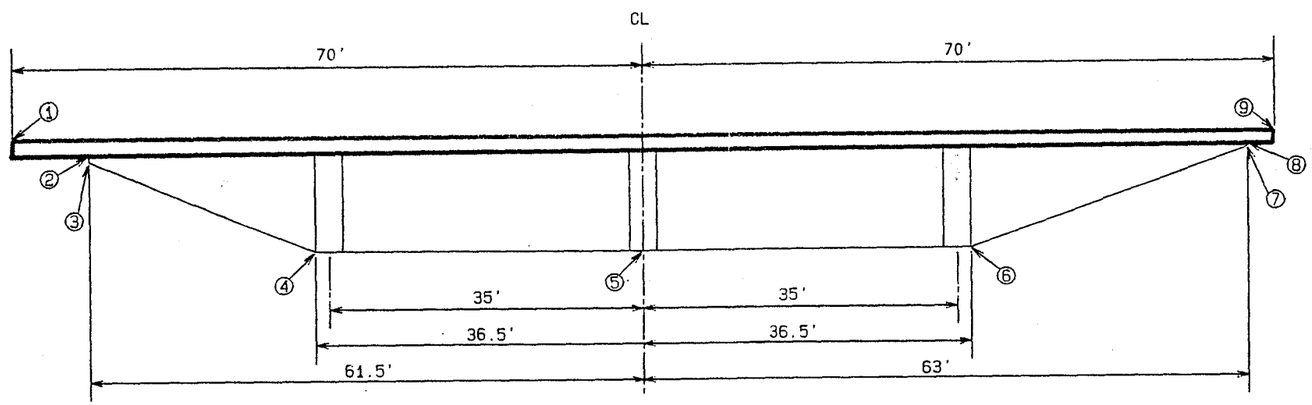
DXF FILE NAME: 1960150.DXF

UNITS: FEET

SCALE: 1"=1'

PLOT RATIO: 1:500

LOCATION	ELEVATIONS NORTH S.	ELEVATIONS SOUTH S.	DESCRIPTION
1	1341.27	1341.27	TOP DECK
2	1339.65	1339.76	BOTTOM DECK
3	1338.89	1339.03	TOP CHANNEL
4	1328.50	1328.54	TOE CHANNEL
5	1328.40	1328.58	CENTER LINE
6	1328.49	1328.28	TOE CHANNEL
7	1339.68	1339.34	TOP CHANNEL
8	1340.05	1340.10	BOTTOM DECK
9	1341.54	1341.60	TOP DECK



SOUTHERN AVE. BRIDGE

NORTH SIDE LOOKING SOUTH

	SETS: LINES	SETS: LINES	SETS: TEXT	SETS: MISCL.
NAME:				
CAD. FILE: A-1960150	DECKLN		DECKTXT	
COMPUTER MSUS: :,1405				
DXF FILE NAME: 1960150.DXF				
UNITS: FEET				
SCALE: 1"=1'				
PLOT RATIO: 1:200				

SECTION 4: HYDRAULIC ANALYSIS

SECTION 4: HYDRAULIC ANALYSIS

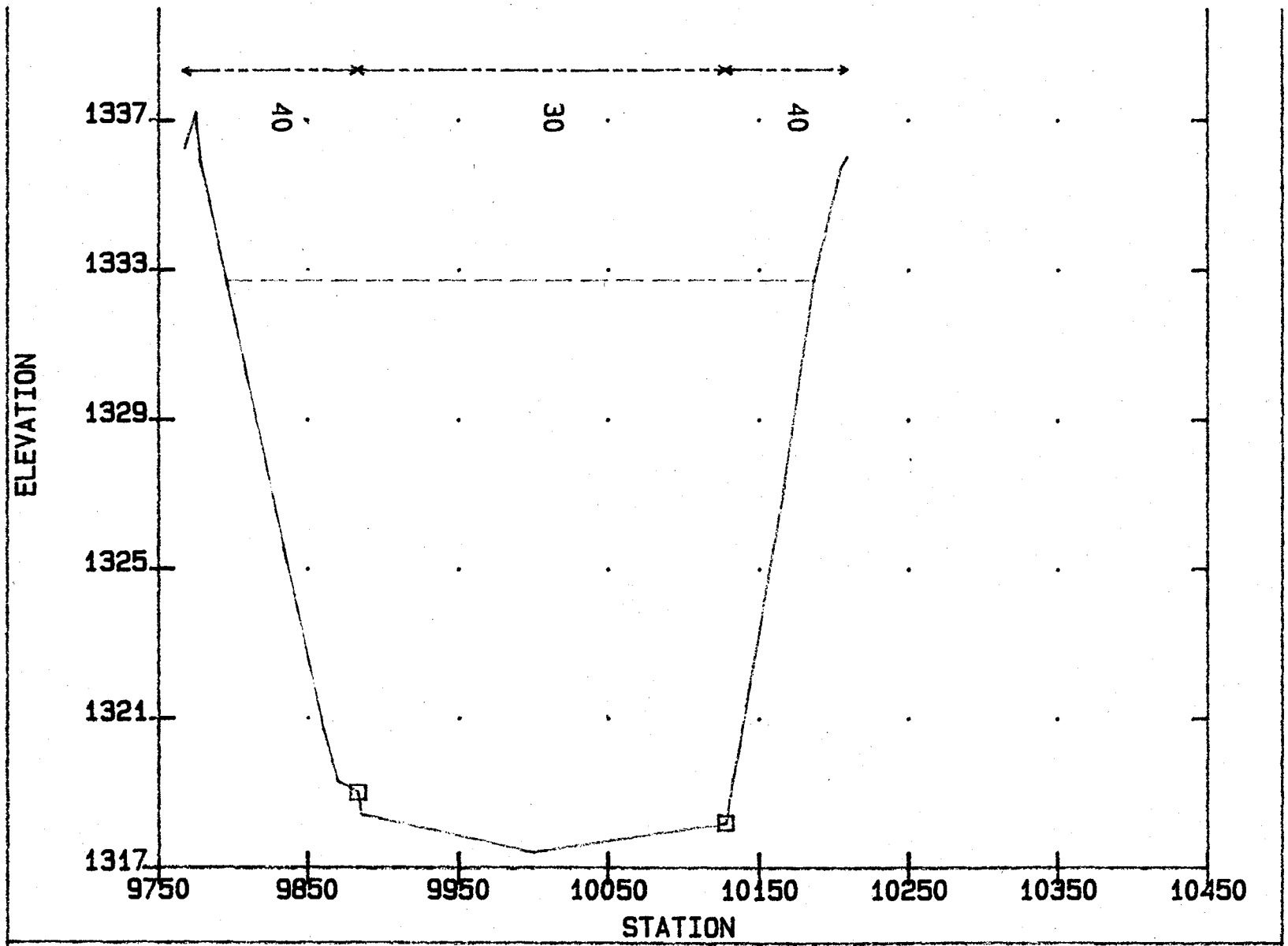
4.1 The flood boundary was determine using the Department of Army, Corps of Engineers HEC-2 Water Surface profiles, version 4.6 computer model. The study area is mapped as a Zone A, such that no base flood elevation or depths are shown. This study ties into the latest map revision for the EMF dated August 28, 1989, which defined the EMF floodplain within its right-of-way limits as determined from review of SCS construction drawings, construction drawings for Reach 5 and 6 are enclossed, see section Miscellaneous Maps. Starting Water surface elevation was set at the water surface elevation at the upstream end of the SCS EMF Reach 5 as determined from a backwater analysis based on the Soil Conservation Service design plans for the EMF. The submitted flood hazard area terminates at the downstream end of the SCS EMF Reach 6.

4.2 Parameter estimation:

4.2.1 Manning's N-value was determined by field reconnaissance and recommended N-values for Indian Bend Wash golf course, (reference 4). Photos are included in appendix A.

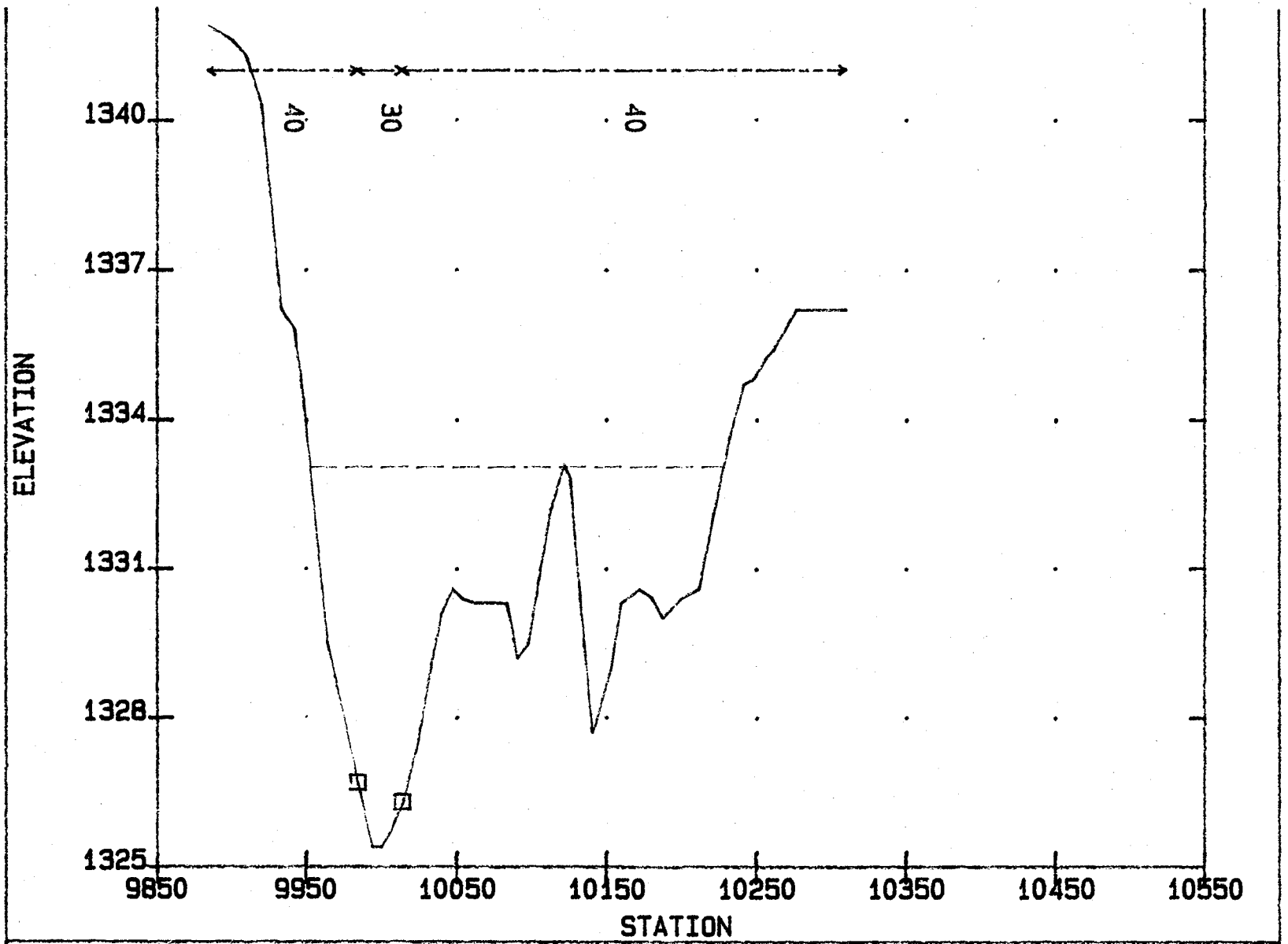
4.2.2 Due to the variability of the channel cross section for the golf course contraction-expansion coefficients were set at 0.1 and 0.3 to initiate the computer run. Contraction-Expansion coefficients were set at 0.3 an 0.5 due to the abrut change in flow at the bridges then returned to 0.1 and 0.3 once flow leaves the bridge.

4.3 TYPICAL CROSS-SECTIONS



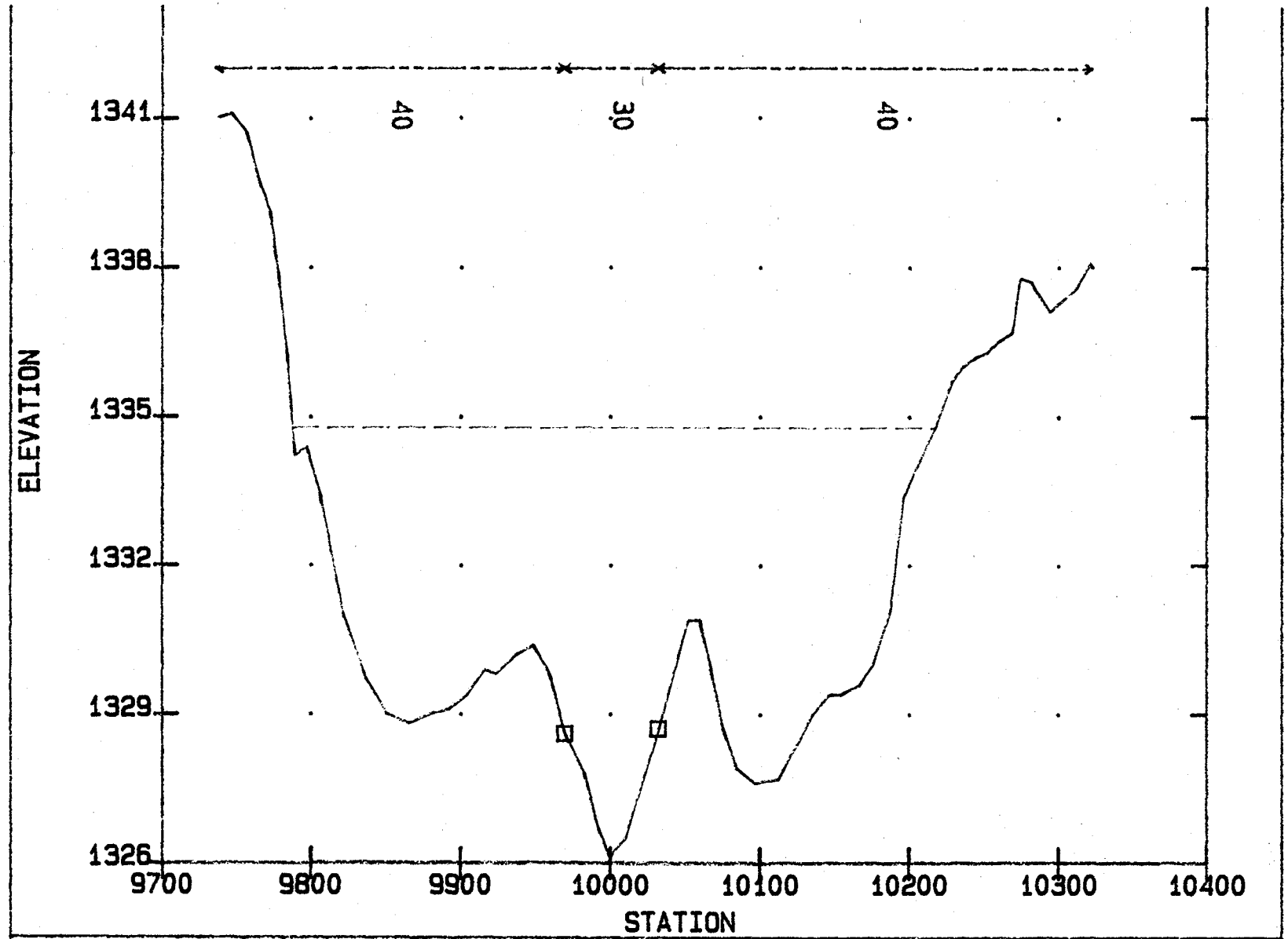
SECTION : .131

EMF--FLOODWAY



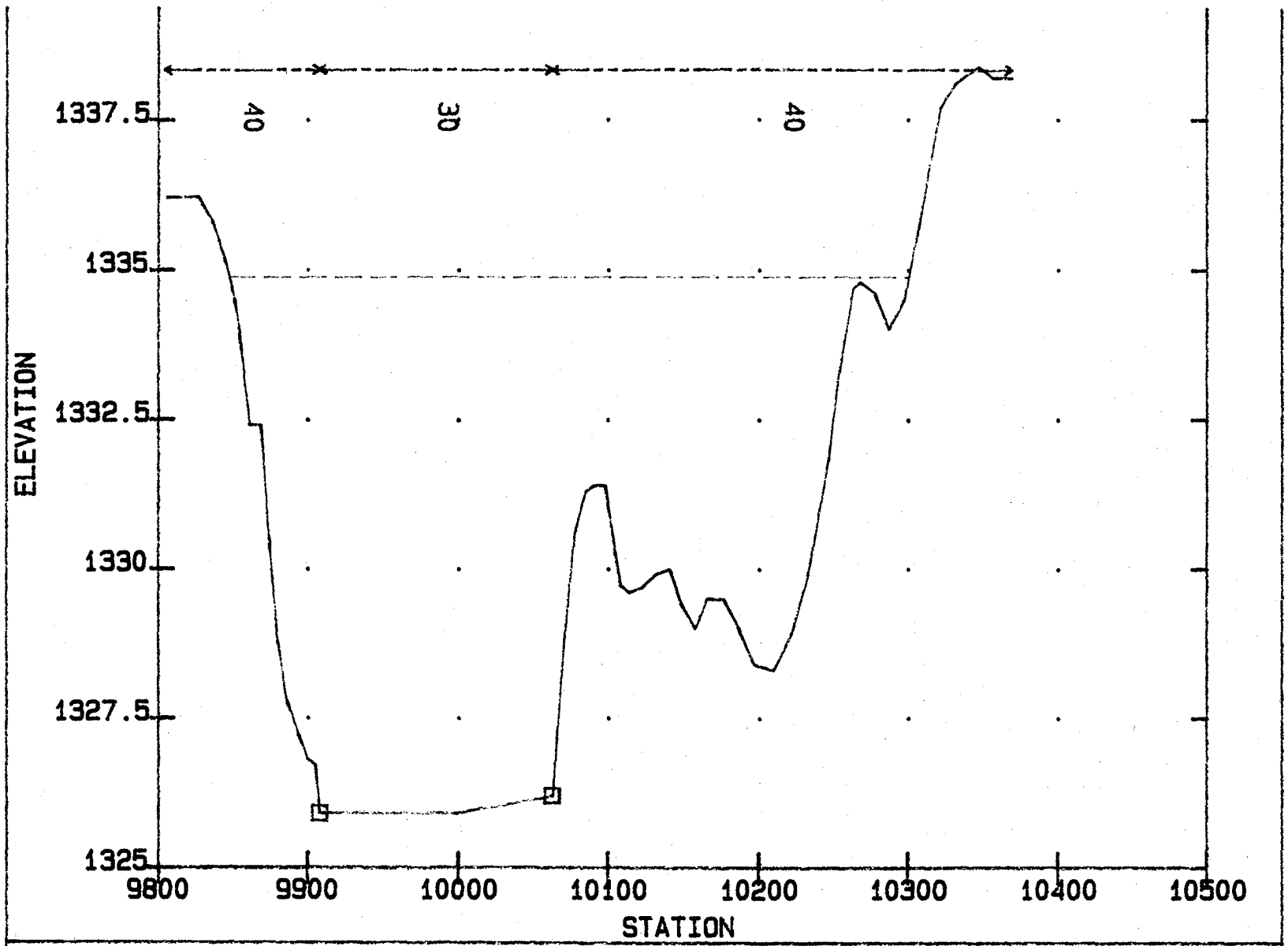
SECTION : 0.580

EMF--FLOODWAY



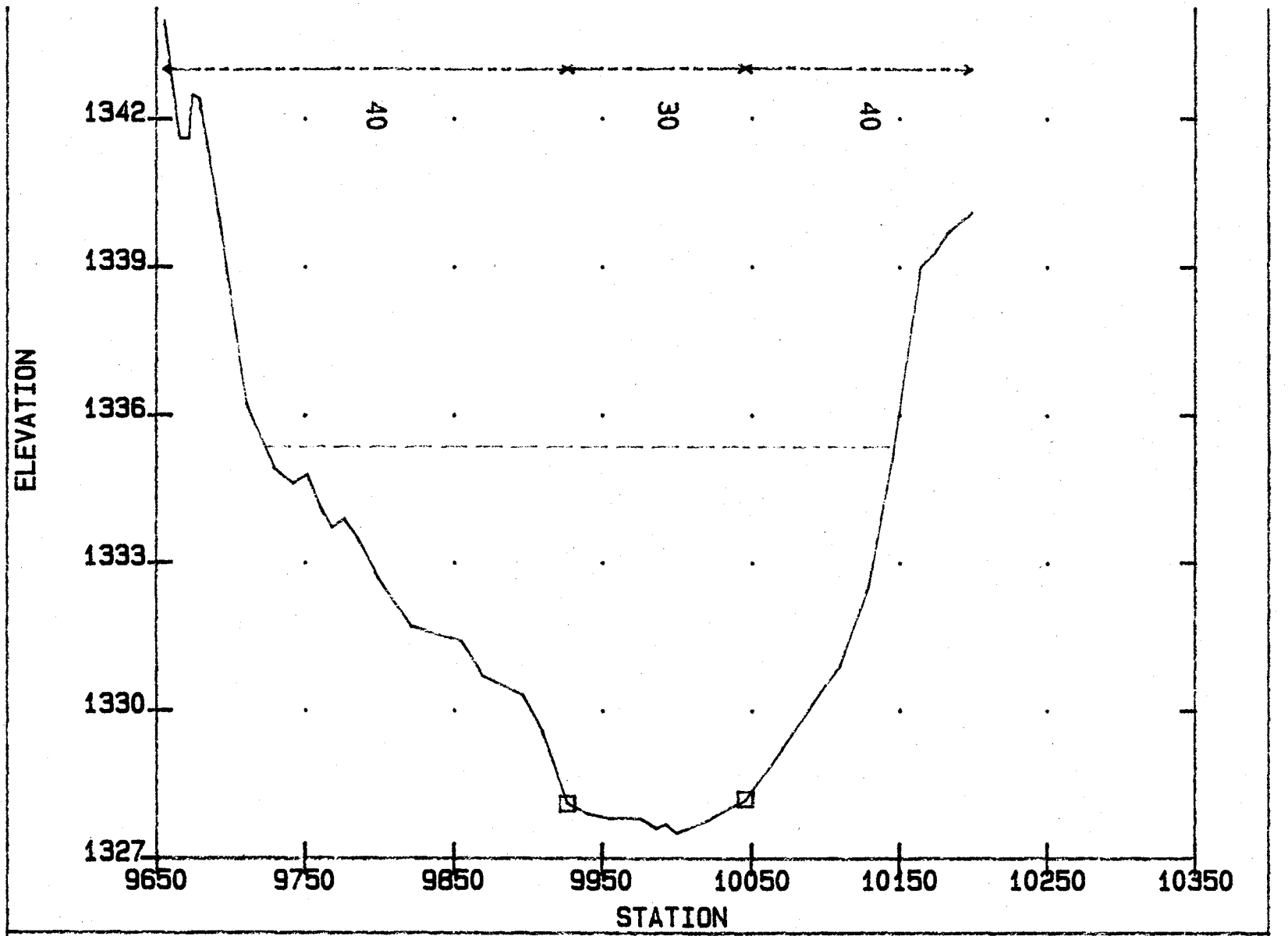
SECTION : 0.907

EMF--FLOODWAY



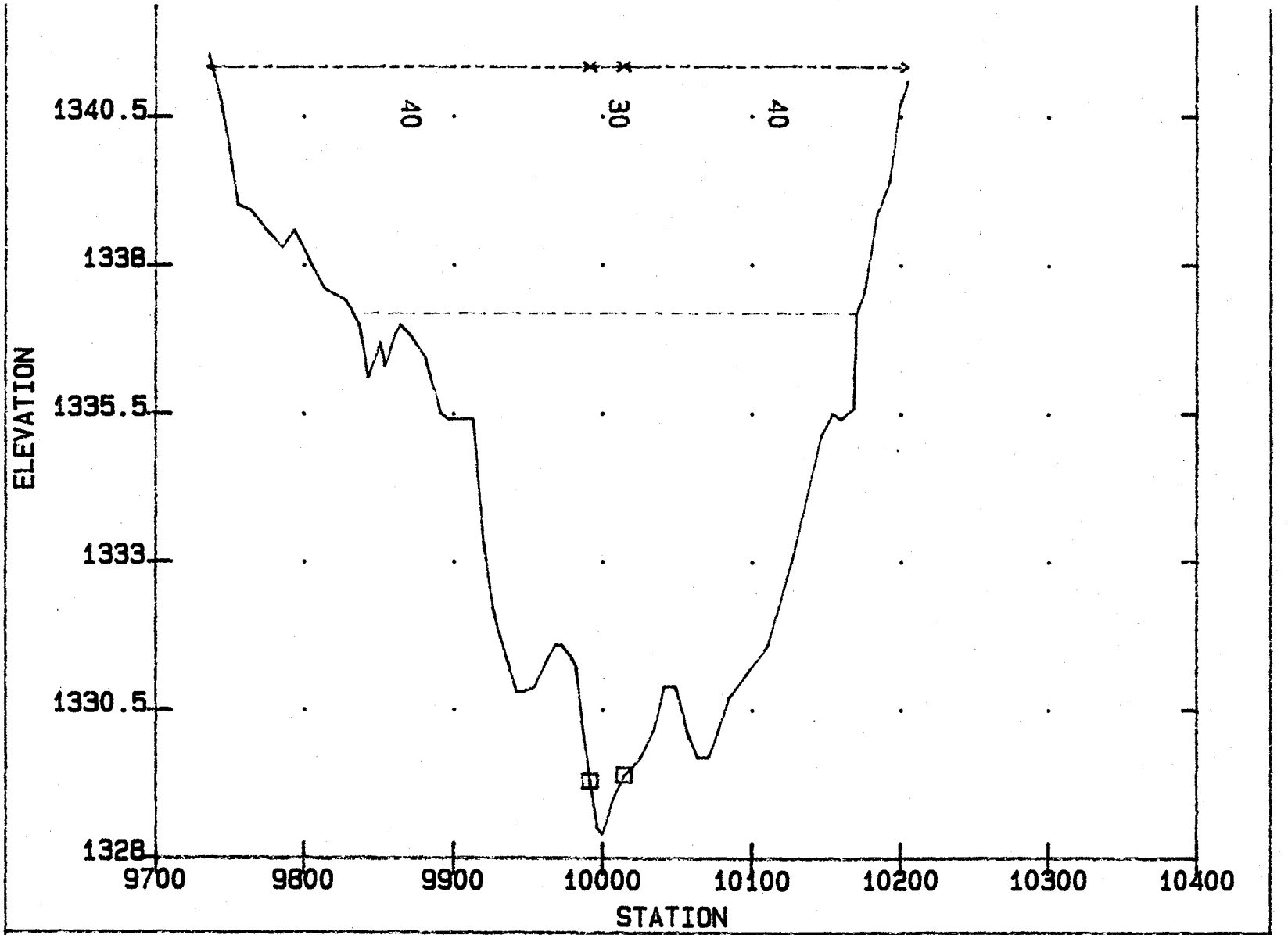
SECTION : 1.031

EMF--FLOODWAY



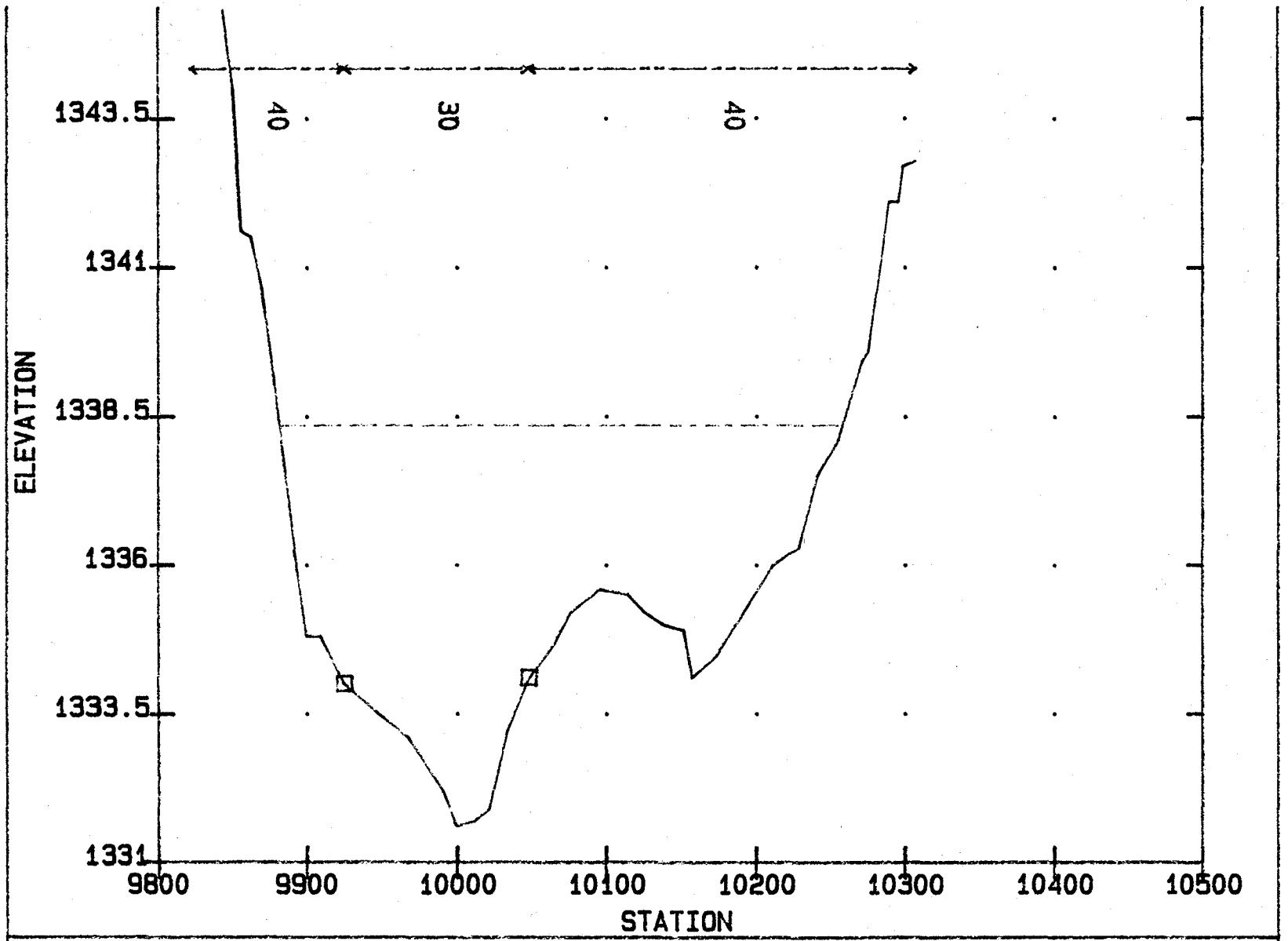
SECTION : 1.203

EMF--FLOODWAY



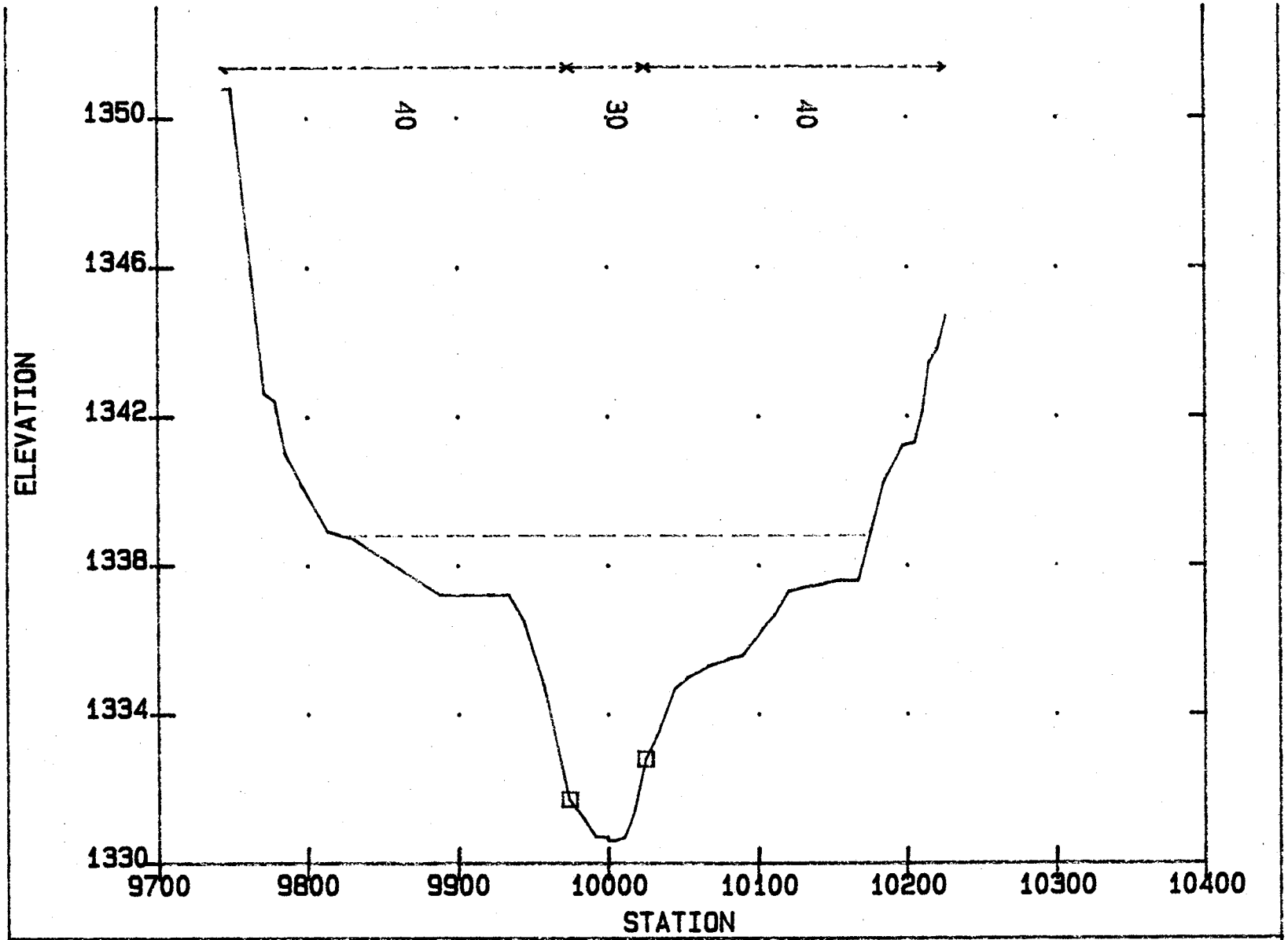
SECTION : 2.129

EMF--FLOODWAY



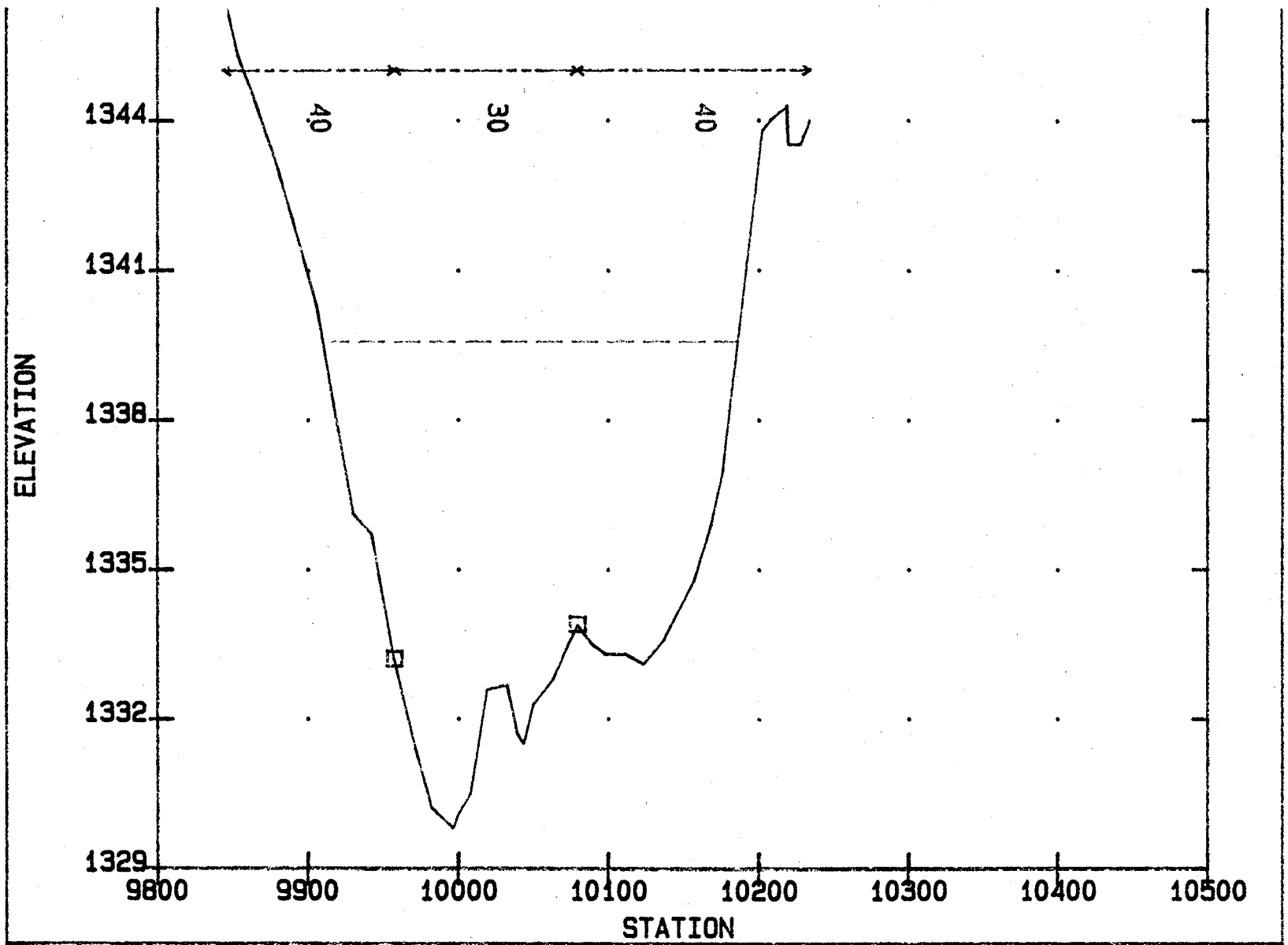
SECTION : 2.572

EMF--FLOODWAY



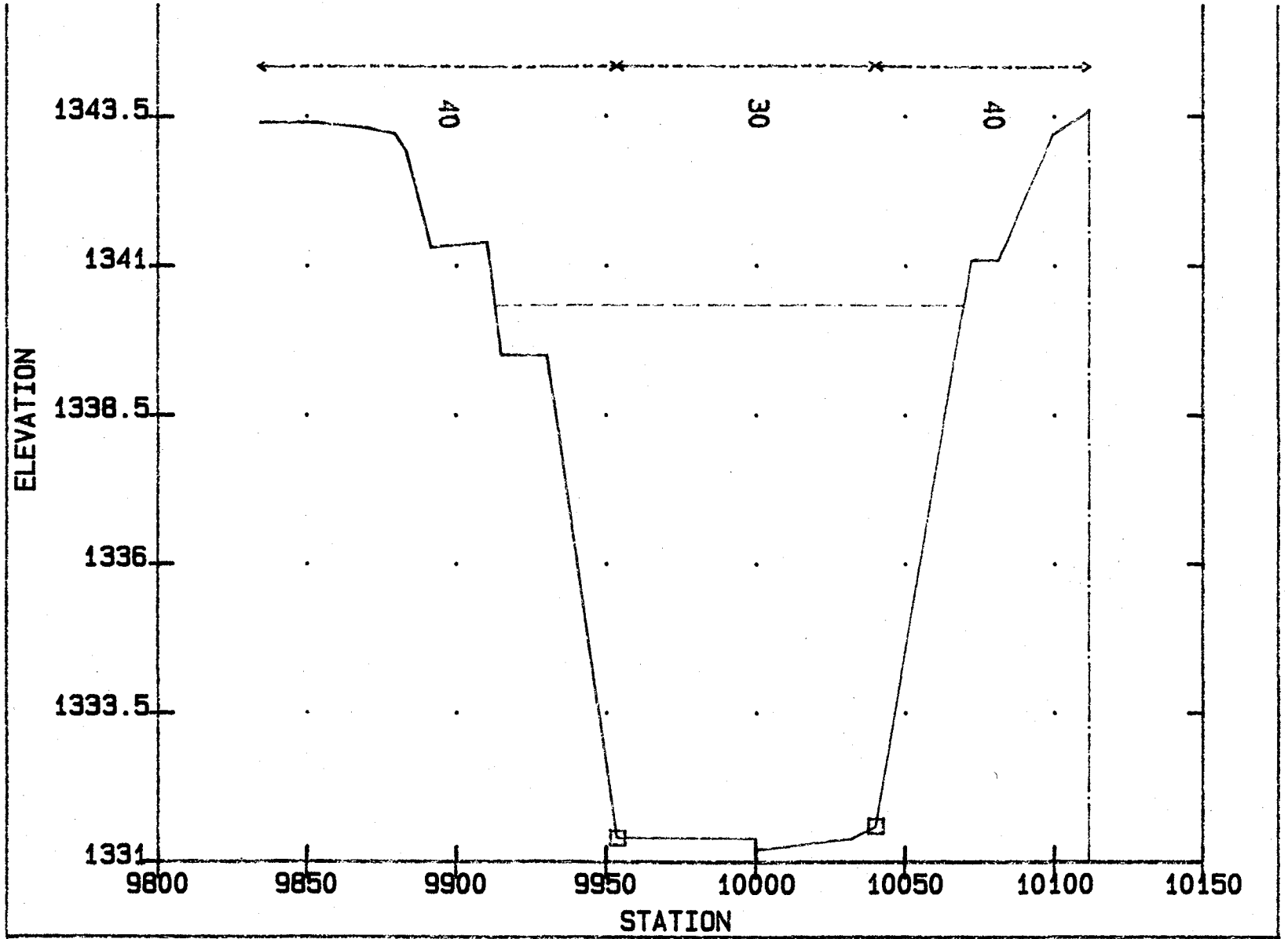
SECTION : 2.876

EMF--FLOODWAY



SECTION : 3.076

EMF--FLOODWAY



SECTION : 3.413

EMF--FLOODWAY

4.7 FINAL RESULTS/COMPUTER RUNS

```
C
C      5
C    .029 GUADALUPE ROAD BRIDGE
C   1.182 BASELINE ROAD BRIDGE
C   1.765 SUPERSTITION ROAD BRIDGE
C   2.370 SOUTHERN ROAD BRIDGE
T1       EAST MARICOPA FLOODWAY REACH 5 AND 6
T2       FLOOD HAZARD DETERMINEATION          7/91
T3          EMF--FLOODWAY
J1   -10       2                                                  1331.43
J2     1              -1
J3   150
NC  .040    .040    .030      .3      .5
QT     1    4900
X1  0.00      15    9963 10038.0      .0      .0      .0
GR1335.6  9915.2  1335.0  9928.1  1334.6  9937.5  1328.9  9950.9  1322.5  9963.0
GR1322.8  9984.3  1323.1   10000  1323.0 10016.9  1322.9 10025.6  1322.9 10032.9
GR1323.3 10038.0  1333.6 10060.8  1334.1 10096.1  1334.8 10113.2  1335.4 10116.4
X1  .011      27  9962.3 10025.1      62      57      58
GR1336.0  9857.7  1335.8  9906.9  1335.5  9914.9  1335.6  9919.5  1335.8  9925.2
GR1335.7  9929.6  1334.5  9933.9  1334.4  9938.0  1328.9  9949.6  1322.8  9962.3
GR1322.8  9970.1  1322.8  9978.2  1322.9  9987.9  1322.9  9996.9  1322.9 10000.0
GR1322.9 10013.3  1322.8 10020.4  1322.9 10025.1  1323.4 10033.4  1326.6 10045.3
GR1333.5 10059.7  1334.3 10072.7  1334.7 10086.4  1335.4 10098.7  1336.2 10109.4
GR1336.5 10117.3  1336.8 10120.1
NC  .025    .025    .025
X1  .019      14  9944.5   10058      49      22      40
X3     10                 9944.5 1335.59   10058 1335.59
GR  1336    9870 1335.87  9930.3  1334.2  9930.4  1334.2  9944.4  1330.6  9944.5
GR1322.9    9962  1322.7  9980.5  1322.6   10000  1322.7   10022  1322.6   10040
GR1330.7   10058 1333.89 10058.1  1335.610058.15    1336   10100
*        GUADALUPE BRIDGE
SB  0.95    1.56     2.6       0      78       8  1048.3     2.3  1322.5  1322.5
X1  .029      14  9944.5   10058      57      57      57
X2                     1  1333.5  1336.7
X3     10                 9944.5 1335.59   10058 1335.59
BT      5    9870    1336       0    9944  1336.4       0   10000  1336.7       0
BT 10058  1336.7       0   10100    1336       0
GR  1336    9870  1335.9  9930.3  1334.2  9930.4  1334.2  9944.4  1330.3  9944.5
GR1322.8    9962  1322.7  9980.5  1322.5   10000  1322.5   10022  1323.1   10040
GR1330.2   10058    1334 10058.1  1335.710058.15    1336   10100
NC  .040    .040    .030      .1      .3
X1  .036      24  9960.9 10032.5      25      42      33
GR1334.5  9874.0  1333.4  9892.9  1332.4  9901.8  1331.6  9910.0  1331.9  9916.9
GR1332.1  9922.6  1332.3  9931.1  1332.7  9938.5  1332.5  9942.8  1331.3  9948.8
GR1324.9  9960.9  1324.6  9967.2  1324.6 10000.0  1324.5 10014.0  1324.6 10023.8
GR1324.9 10032.5  1325.2 10037.5  1333.6 10062.5  1335.6 10068.7  1335.7 10074.5
GR1335.6 10085.7  1335.9 10103.2  1336.2 10112.9  1336.2 10113.0
X1  .040      24  9928.0 10031.6      30      25      25
GR1334.8  9860.6  1334.9  9877.5  1331.7  9889.5  1328.6  9899.9  1327.6  9910.7
GR1326.1  9918.2  1324.8  9928.0  1324.4  9949.9  1324.1  9961.4  1323.5  9966.3
GR1324.1  9975.6  1324.1  9992.9  1324.2 10000.0  1324.1 10019.8  1324.0 10031.6
GR1324.3 10036.3  1326.1 10043.6  1335.4 10064.4  1337.2 10074.9  1337.3 10082.4
GR1337.0 10098.6  1337.2 10116.7  1337.3 10126.7  1337.5 10134.7
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X1 .0752      18  9929.6 10053.6     195     178     184
GR1334.8  9833.4  1334.6  9837.2  1334.3  9845.4  1334.2  9856.3  1327.3  9881.8
GR1322.1  9908.9  1320.8  9916.3  1320.0  9926.1  1318.3  9929.6  1318.3 10000.0
GR1318.5 10049.2  1319.1 10053.6  1320.1 10059.8  1321.5 10068.1  1326.7 10093.6
GR1330.7 10114.8  1335.2 10134.0  1335.9 10137.9
X1  .093      25  9921.4   10085     202     188      92
GR1336.0  9807.0  1336.4  9810.6  1336.5  9815.0  1336.1  9817.5  1332.3  9830.1
GR1327.5  9858.7  1320.9  9888.6  1320.4  9898.2  1320.1  9905.8  1320.1  9910.1
GR1319.6  9917.3  1318.5  9921.4  1318.4 10000.0  1318.6 10085.0  1319.5 10087.2
GR1320.1 10089.6  1321.3 10093.4  1322.5 10102.0  1323.8 10110.7  1325.6 10121.8
GR1329.4 10136.6  1330.0 10141.3  1331.8 10151.5  1334.3 10162.2  1335.4 10168.7
X1  .131      19  9883.8 10127.8     165     245     205
GR1336.2  9766.5  1337.2  9774.8  1335.9  9777.9  1332.7  9795.1  1325.5  9834.2
GR1320.7  9860.8  1319.3  9870.4  1319.0  9883.8  1318.4  9886.4  1317.4 10000.0
GR1318.2 10127.8  1319.4 10132.2  1320.1 10135.9  1321.5 10141.8  1326.9 10165.2
GR1332.8 10186.7  1335.1 10200.8  1335.7 10204.6  1336.0 10209.0
X1  .175      30  9895.9 10061.1     218     229     230
GR1340.6  9639.8  1340.3  9653.1  1339.7  9665.1  1339.3  9674.5  1337.4  9689.5
GR1335.6  9702.0  1334.5  9712.2  1333.6  9720.6  1331.6  9734.2  1328.5  9755.0
GR1326.8  9771.7  1326.6  9782.7  1325.9  9788.9  1324.0  9800.2  1322.1  9812.0
GR1321.3  9825.5  1320.9  9834.6  1320.5  9848.4  1320.1  9862.6  1320.0  9875.8
GR1319.4  9887.6  1318.4  9895.9  1318.4 10000.0  1318.5 10061.1  1319.4 10067.2
GR1319.8 10070.8  1327.8 10103.6  1334.8 10133.0  1336.3 10141.4  1336.1 10144.9
X1 0.194      36  9952.4 10058.8     110      61      98
GR1340.8  9612.4  1340.8  9624.7  1340.4  9628.5  1341.0  9633.4  1341.2  9637.1
GR1340.8  9645.0  1340.2  9655.6  1339.8  9667.2  1340.0  9679.9  1340.8  9688.6
GR1341.3  9695.9  1341.1  9698.5  1340.4  9702.2  1339.9  9705.4  1340.5  9710.0
GR1340.6  9714.6  1339.2  9724.9  1338.1  9734.6  1336.4  9748.4  1330.8  9782.2
GR1324.3  9816.5  1320.2  9832.9  1319.9  9848.6  1319.7  9868.5  1319.3  9888.1
GR1319.5  9908.1  1319.6  9946.0  1318.7  9952.4  1318.6 10000.0  1318.6 10058.8
GR1320.0 10070.3  1321.8 10084.2  1327.6 10108.5  1333.9 10131.7  1336.3 10145.1
GR1335.8 10153.0
X1 0.228      23  9920.8 10086.4     162     227     179
GR1338.9  9753.9  1340.3  9762.4  1341.3  9770.4  1341.4  9774.3  1341.2  9778.5
GR1341.0  9784.0  1340.3  9790.5  1336.9  9808.3  1326.0  9857.1  1320.6  9882.2
GR1320.4  9888.9  1320.1  9903.1  1320.1  9908.8  1320.1  9916.8  1318.4  9920.8
GR1318.4 10000.0  1318.5 10086.4  1320.2 10093.9  1324.2 10112.0  1328.2 10135.8
GR1331.8 10157.4  1334.8 10178.7  1335.8 10186.5
X1 0.254      20    9903   10123     133     135     142
GR  1340    9830    1338    9837    1336    9842    1334    9850    1332    9855
GR  1330    9865    1328    9871    1326    9879    1324    9887    1322    9898
GR  1321    9903    1321   10123    1322   10133    1324   10147    1326   10156
GR  1328   10168    1330   10175    1332   10182    1334   10187    1335   10205
X1 0.287      32  9925.1 10052.3     175     158     170
GR1341.3  9824.6  1341.5  9833.7  1341.7  9841.0  1341.0  9846.6  1340.9  9851.2
GR1340.6  9858.7  1339.1  9869.1  1333.3  9886.6  1327.6  9904.8  1325.7  9916.2
GR1324.9  9923.7  1323.8  9925.1  1323.8 10000.0  1323.8 10052.3  1328.9 10055.5
GR1330.4 10061.7  1333.7 10073.0  1334.1 10079.5  1334.9 10089.1  1335.0 10102.0
GR1335.0 10106.9  1335.6 10128.3  1335.3 10138.7  1334.9 10145.0  1335.6 10150.2
GR1337.2 10159.5  1337.9 10168.6  1338.0 10175.9  1339.7 10184.4  1340.8 10193.0
GR1342.3 10208.4  1342.3 10214.6
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X1 0.325      36  9920.6 10075.7     211     200     204
GR1338.8  9828.8  1339.4  9833.3  1339.6  9838.1  1339.4  9843.5  1339.4  9850.6
GR1339.0  9855.5  1338.9  9858.9  1339.0  9862.5  1339.0  9866.0  1337.7  9875.7
GR1332.9  9890.2  1328.5  9902.8  1325.4  9915.2  1325.3  9919.1  1323.7  9920.6
GR1323.8 10000.0  1323.9 10075.7  1325.4 10089.0  1326.8 10096.6  1327.1 10102.6
GR1327.7 10110.8  1327.9 10116.2  1327.9 10122.1  1328.2 10135.7  1328.9 10143.6
GR1330.1 10150.1  1330.9 10159.4  1332.5 10172.9  1333.5 10191.3  1334.1 10201.0
GR1335.1 10213.2  1335.6 10220.7  1335.9 10231.0  1336.2 10236.2  1336.3 10246.5
GR1336.5 10254.1
X1 0.363      46  9967.3 10052.6     212     181     199
GR1340.2  9856.0  1340.6  9859.5  1340.7  9866.0  1340.4  9871.7  1339.2  9879.8
GR1337.4  9891.5  1334.0  9906.5  1332.8  9915.9  1332.1  9926.2  1329.5  9939.0
GR1326.2  9953.6  1325.2  9961.6  1324.9  9965.7  1323.6  9967.3  1323.5 10000.0
GR1323.8 10048.0  1324.2 10052.6  1325.3 10057.0  1326.2 10064.9  1327.6 10075.5
GR1329.0 10087.5  1328.8 10097.1  1328.0 10106.6  1328.0 10120.7  1328.1 10137.7
GR1328.7 10159.1  1329.7 10172.4  1330.3 10186.4  1330.8 10199.7  1331.1 10211.7
GR1331.6 10217.6  1332.6 10227.2  1333.6 10236.4  1333.6 10244.2  1333.8 10251.3
GR1334.4 10260.1  1335.0 10265.6  1335.5 10271.8  1334.8 10279.5  1334.5 10284.1
GR1334.6 10290.1  1335.6 10293.9  1336.3 10299.5  1336.6 10308.2  1336.9 10315.5
GR1336.7 10321.4
X1 0.402      57 10249.3 10297.0     162     195     208
GR1340.8  9867.1  1341.8  9871.1  1341.7  9873.3  1340.7  9877.1  1339.0  9881.4
GR1339.3  9887.4  1340.9  9894.2  1341.1  9900.8  1341.0  9905.9  1340.3  9917.6
GR1336.6  9943.2  1334.4  9960.0  1332.9  9970.5  1329.1  9982.7  1326.2  9994.9
GR1325.0 10000.0  1325.8 10005.6  1327.0 10012.1  1328.4 10019.7  1329.4 10024.6
GR1331.0 10031.6  1331.0 10037.2  1330.1 10047.1  1329.1 10052.8  1328.9 10059.3
GR1328.7 10076.1  1328.6 10092.2  1327.6 10117.0  1327.5 10129.8  1327.7 10143.9
GR1327.9 10160.5  1328.2 10174.3  1328.2 10185.2  1328.3 10196.0  1328.8 10206.1
GR1329.2 10212.1  1328.7 10215.6  1327.7 10222.2  1327.6 10230.4  1326.4 10235.5
GR1325.3 10241.1  1324.9 10246.9  1323.9 10249.3  1323.8 10297.0  1325.5 10306.1
GR1328.4 10316.9  1333.8 10334.0  1336.9 10342.4  1337.3 10348.3  1337.2 10353.9
GR1336.2 10360.9  1336.1 10364.6  1336.3 10368.9  1336.5 10374.8  1337.5 10383.1
GR1338.2 10388.7  1338.2 10392.2
NH     5     .04  9944.6     .03   10056     .04 10126.8     .03 10248.3     .04
NH 10423
X1 0.441      50  9944.6 10248.3     210     225     205
X3                                        10311.4  1334.6
GR1341.1  9826.8  1341.3  9833.9  1341.0  9840.1  1340.5  9844.4  1340.8  9853.1
GR1341.0  9858.5  1340.7  9864.1  1339.0  9874.4  1336.9  9885.4  1332.4  9896.6
GR1332.4  9904.7  1331.7  9913.0  1330.1  9919.1  1329.0  9925.2  1326.8  9933.2
GR1324.8  9941.0  1323.8  9944.6  1323.8 10000.0  1323.8 10049.4  1324.9 10056.0
GR1326.0 10064.9  1326.6 10072.5  1327.2 10083.7  1327.7 10091.5  1327.8 10100.4
GR1327.9 10109.5  1327.0 10119.2  1325.8 10126.8  1324.6 10134.8  1323.7 10139.2
GR1323.8 10248.3  1324.6 10252.8  1326.2 10259.6  1328.0 10270.5  1332.7 10285.7
GR1333.5 10288.6  1334.2 10293.9  1334.5 10301.0  1334.6 10311.4  1333.9 10321.9
GR1332.2 10330.6  1331.8 10337.7  1331.6 10344.4  1331.8 10350.8  1332.8 10356.1
GR1332.9 10363.0  1334.9 10376.6  1335.8 10389.6  1336.4 10403.6  1336.4 10422.7
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NC   .04     .04     .03
X1 0.496      38  9843.9 10113.5     242     300     294
GR1342.1  9643.0  1340.5  9662.6  1339.3  9672.5  1339.1  9683.1  1339.1  9697.4
GR1339.0  9709.1  1338.4  9721.0  1337.5  9731.3  1336.2  9745.5  1336.0  9762.3
GR1336.3  9781.4  1335.4  9793.1  1334.4  9804.3  1332.2  9816.5  1329.6  9828.8
GR1326.6  9843.9  1326.5  9861.7  1326.9  9874.5  1326.5  9890.0  1326.3  9904.4
GR1326.5  9926.2  1326.7 10000.0  1326.8 10029.8  1326.8 10046.9  1326.4 10058.1
GR1326.1 10071.6  1325.3 10083.4  1325.1 10092.1  1325.3 10100.5  1326.8 10113.5
GR1328.7 10123.9  1332.3 10143.3  1334.9 10159.2  1336.4 10169.2  1336.9 10177.1
GR1337.0 10183.5  1337.4 10192.8  1337.8 10203.1
X1 0.514      32  9977.6 10025.3     220     190     233
GR1341.5  9820.7  1340.8  9833.0  1339.8  9842.1  1338.0  9851.6  1335.1  9865.7
GR1334.3  9907.9  1330.3  9937.3  1326.7  9959.1  1325.3  9977.6  1325.3  9995.7
GR1325.3 10000.0  1325.2 10014.4  1325.8 10025.3  1326.2 10036.2  1326.7 10049.0
GR1328.3 10059.8  1328.3 10066.2  1327.8 10074.7  1328.0 10086.9  1328.6 10102.4
GR1330.0 10113.3  1332.4 10126.8  1333.1 10136.2  1333.3 10141.8  1333.6 10151.1
GR1334.0 10160.8  1335.0 10172.3  1335.2 10178.7  1335.6 10182.2  1335.9 10191.5
GR1336.0 10201.2  1336.0 10211.8
X1 0.580      47  9984.5 10013.9     200     190     210
GR1341.9  9884.4  1341.6  9900.9  1341.3  9909.8  1340.3  9920.3  1336.2  9933.6
GR1335.8  9942.1  1334.4  9948.5  1329.5  9964.6  1326.7  9984.5  1325.4  9993.9
GR1325.4  9999.0  1325.4 10000.0  1325.7 10005.7  1326.3 10013.9  1327.5 10023.9
GR1329.0 10032.4  1330.1 10039.8  1330.6 10047.2  1330.4 10053.6  1330.3 10062.3
GR1330.3 10073.3  1330.3 10083.7  1329.2 10090.7  1329.5 10097.7  1330.8 10104.8
GR1332.2 10112.8  1333.1 10121.8  1332.8 10126.1  1330.5 10132.5  1329.5 10135.5
GR1327.7 10140.8  1329.0 10152.9  1330.3 10159.7  1330.6 10171.8  1330.4 10180.6
GR1330.0 10187.8  1330.4 10199.4  1330.6 10211.6  1332.1 10221.2  1333.6 10231.6
GR1334.7 10241.5  1334.8 10247.8  1335.2 10255.7  1335.4 10261.4  1335.8 10268.9
GR1336.2 10276.3  1336.2 10309.6
X1 0.616      41  9986.7 10018.5     191     183     189
GR1341.6  9903.3  1341.6  9916.1  1341.4  9925.5  1340.5  9929.8  1337.0  9943.8
GR1334.4  9957.0  1327.3  9977.9  1325.7  9986.7  1325.7  9993.3  1325.7  9995.8
GR1324.7  9999.5  1324.5 10000.0  1325.3 10009.4  1326.9 10018.5  1329.6 10033.1
GR1330.1 10039.9  1329.5 10048.0  1328.5 10058.5  1328.3 10067.6  1328.3 10075.6
GR1329.4 10082.3  1330.7 10090.8  1331.3 10095.3  1329.6 10104.4  1328.4 10117.8
GR1327.6 10136.6  1327.4 10153.0  1327.5 10166.6  1327.5 10182.4  1328.7 10198.4
GR1329.2 10207.1  1332.2 10226.6  1335.8 10242.5  1336.6 10250.4  1336.6 10255.7
GR1336.3 10261.1  1335.2 10262.5  1335.2 10268.9  1337.9 10274.5  1338.6 10279.6
GR1338.6 10289.0
X1 0.639      40  9982.0 10011.8     125     120     112
GR1341.9  9886.9  1341.7  9901.7  1341.7  9912.0  1335.7  9938.6  1331.1  9961.6
GR1328.7  9969.3  1326.7  9975.8  1325.9  9982.0  1325.2  9990.8  1324.9 10000.0
GR1324.9 10001.3  1325.2 10011.8  1325.7 10023.7  1325.7 10037.4  1325.8 10057.5
GR1326.5 10069.2  1326.5 10082.1  1327.0 10094.2  1327.2 10108.9  1327.7 10124.1
GR1327.8 10140.2  1328.3 10156.4  1329.0 10176.0  1329.1 10191.9  1329.1 10201.7
GR1329.9 10213.1  1332.9 10233.1  1334.1 10243.9  1334.2 10251.4  1334.2 10260.5
GR1334.4 10267.6  1334.7 10278.4  1335.0 10286.6  1334.7 10297.2  1334.7 10303.6
GR1335.4 10309.2  1336.0 10317.6  1336.4 10325.9  1336.8 10333.4  1336.8 10341.3
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X1 0.678      42  9972.9 10028.6     179     209     207
GR1342.3  9849.6  1342.2  9864.1  1341.9  9874.5  1341.8  9883.6  1340.8  9894.1
GR1338.7  9909.6  1336.5  9926.5  1334.6  9941.9  1331.6  9959.5  1327.9  9972.9
GR1327.0  9980.9  1326.4  9989.0  1325.8  9996.9  1325.6 10000.0  1325.9 10007.9
GR1326.5 10019.0  1327.7 10028.6  1328.4 10039.0  1328.2 10051.7  1327.8 10063.9
GR1327.3 10077.4  1327.3 10094.3  1327.4 10108.1  1328.2 10128.5  1328.3 10140.0
GR1328.4 10153.0  1328.5 10165.8  1328.7 10180.3  1329.0 10193.0  1329.9 10200.1
GR1332.3 10213.7  1334.1 10228.4  1335.7 10239.3  1336.9 10250.0  1336.4 10255.1
GR1336.1 10256.7  1336.1 10262.9  1337.6 10265.8  1338.5 10269.5  1339.4 10273.3
GR1339.8 10277.6  1339.8 10281.5
X1 0.718      35    9979   10017     210     220     210
X3                                      10220.6  1334.5
GR1343.0  9857.1  1343.1  9866.3  1342.4  9872.2  1342.0  9878.5  1341.8  9890.9
GR1332.4  9936.8  1329.2  9956.9  1327.4  9969.4  1325.7  9979.0  1324.8  9986.3
GR1324.7  9993.1  1324.7 10000.0  1324.8 10000.2  1325.0 10007.5  1325.7 10017.0
GR1325.8 10023.8  1326.0 10034.1  1326.4 10040.7  1326.4 10050.1  1326.0 10059.7
GR1326.1 10067.6  1326.3 10082.6  1326.7 10095.2  1327.7 10112.4  1328.0 10126.5
GR1328.4 10142.0  1329.3 10160.8  1331.5 10183.0  1333.7 10205.3  1334.4 10215.2
GR1334.5 10220.6  1333.8 10227.6  1333.9 10235.2  1335.7 10241.1  1337.2 10246.8
X1 0.762      46  9968.5 10023.1     210     235     231
GR1342.4  9847.5  1342.5  9851.3  1341.6  9860.2  1341.1  9870.9  1340.5  9884.4
GR1339.2  9900.7  1335.5  9918.8  1331.9  9926.9  1329.8  9940.9  1325.9  9960.5
GR1325.5  9968.5  1325.2  9974.3  1324.8  9980.3  1324.4  9988.6  1324.9  9997.1
GR1325.2 10000.0  1325.2 10000.1  1324.8 10015.0  1325.0 10023.1  1326.0 10032.7
GR1326.9 10048.1  1329.2 10060.9  1332.5 10079.2  1333.5 10087.7  1333.6 10091.3
GR1333.0 10098.3  1331.2 10103.7  1331.1 10111.8  1333.0 10116.9  1334.6 10122.1
GR1335.3 10127.5  1335.7 10133.3  1336.0 10141.7  1335.5 10147.9  1335.0 10154.0
GR1335.9 10190.4  1336.4 10193.7  1337.1 10200.3  1337.6 10207.0  1337.5 10218.0
GR1336.6 10225.1  1336.8 10232.2  1338.1 10240.0  1339.4 10250.5  1340.4 10257.9
GR1340.0 10268.7
X1 0.830      47  9971.3 10031.5     385     270     352
GR1341.6  9694.9  1341.2  9709.6  1340.7  9717.5  1339.7  9726.3  1337.1  9740.6
GR1336.0  9755.3  1335.1  9762.7  1332.1  9777.2  1330.4  9786.6  1330.4  9794.7
GR1331.8  9801.5  1333.7  9805.3  1334.3  9809.3  1334.8  9815.9  1334.5  9819.3
GR1333.1  9839.3  1334.0  9849.6  1334.0  9861.8  1332.3  9875.1  1331.0  9887.9
GR1330.8  9892.0  1330.2  9909.9  1330.7  9923.0  1331.4  9934.4  1330.9  9949.0
GR1328.0  9960.4  1326.9  9971.3  1325.9  9985.7  1325.6  9994.9  1325.9 10000.0
GR1325.7 10011.7  1325.6 10019.8  1326.4 10031.5  1330.5 10055.1  1333.9 10071.7
GR1335.5 10081.4  1335.3 10106.4  1335.5 10118.2  1335.5 10141.8  1335.7 10155.6
GR1336.5 10167.8  1336.6 10176.7  1337.1 10185.7  1337.6 10194.8  1338.4 10203.8
GR1339.1 10212.0  1339.2 10217.1
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X1 0.871      65  9971.7 10030.9     233     185     218
GR1341.6  9649.8  1340.9  9665.7  1340.7  9672.7  1340.8  9681.4  1340.2  9687.2
GR1338.5  9697.0  1336.8  9707.0  1330.8  9724.7  1329.2  9729.9  1329.2  9733.3
GR1329.9  9738.1  1332.3  9743.5  1333.8  9748.9  1334.2  9754.8  1334.2  9762.3
GR1334.0  9765.4  1333.0  9767.5  1333.0  9773.8  1332.6  9777.1  1332.4  9782.3
GR1332.1  9791.7  1331.7  9798.8  1331.0  9805.5  1330.5  9813.8  1329.6  9839.4
GR1329.1  9853.2  1328.9  9864.5  1328.6  9879.7  1328.1  9896.4  1327.3  9907.4
GR1327.6  9915.3  1328.2  9920.4  1328.3  9924.1  1328.5  9934.2  1328.8  9944.9
GR1328.6  9952.2  1328.4  9957.9  1327.9  9964.3  1326.8  9971.7  1325.5  9981.1
GR1325.0  9987.9  1324.6  9995.1  1324.8 10000.0  1324.8 10009.4  1325.4 10016.2
GR1327.2 10030.9  1327.7 10037.3  1328.4 10050.2  1328.6 10064.2  1329.1 10081.8
GR1330.2 10092.3  1330.4 10101.3  1330.8 10111.4  1331.2 10118.0  1332.5 10134.8
GR1333.1 10143.0  1333.8 10151.8  1334.3 10159.8  1335.5 10167.7  1337.1 10180.2
GR1337.6 10192.6  1337.6 10197.1  1336.8 10203.4  1337.0 10207.3  1337.1 10211.4
X1 0.907      56  9969.6 10032.2     200     192     190
GR1341.0  9736.5  1341.1  9746.9  1340.7  9756.9  1339.7  9765.7  1339.1  9773.1
GR1337.9  9778.2  1336.3  9784.2  1334.2  9789.5  1334.4  9797.1  1333.4  9806.4
GR1331.0  9822.0  1329.7  9837.3  1329.0  9850.7  1328.8  9865.2  1329.0  9879.1
GR1329.1  9892.2  1329.4  9904.4  1329.9  9915.9  1329.8  9923.6  1330.2  9936.6
GR1330.4  9948.7  1329.8  9959.6  1328.6  9969.6  1327.8  9982.8  1326.7  9991.8
GR1326.1 10000.0  1326.5 10009.8  1328.7 10032.2  1330.2 10045.3  1330.9 10051.7
GR1330.9 10059.9  1329.9 10067.4  1328.7 10075.5  1327.9 10084.8  1327.6 10096.5
GR1327.7 10112.4  1329.0 10135.0  1329.4 10145.9  1329.4 10153.5  1329.6 10166.4
GR1330.0 10175.1  1331.1 10187.2  1333.4 10196.1  1334.8 10217.5  1335.7 10228.4
GR1336.0 10235.6  1336.2 10244.1  1336.3 10252.3  1336.5 10259.0  1336.7 10268.4
GR1337.8 10273.4  1337.7 10281.8  1337.1 10293.9  1337.6 10311.5  1338.1 10320.8
GR1338.0 10322.6
X1 0.957      32  9886.6 10120.1     250     260     265
GR1340.9  9764.1  1340.1  9771.5  1338.9  9778.8  1337.4  9785.9  1334.6  9796.5
GR1334.7  9803.8  1333.9  9808.4  1334.2  9813.9  1334.4  9825.8  1334.3  9833.5
GR1333.8  9840.5  1331.6  9849.5  1329.6  9863.4  1328.3  9873.6  1327.5  9879.6
GR1327.0  9884.2  1325.5  9886.6  1325.6 10000.0  1326.0 10120.1  1326.9 10127.5
GR1328.3 10140.0  1328.4 10151.6  1328.6 10174.8  1328.4 10187.3  1328.9 10202.5
GR1329.1 10223.8  1331.4 10249.3  1331.7 10264.3  1333.5 10276.0  1335.6 10289.1
GR1337.6 10299.4  1337.6 10305.2
X1 0.997      47  9909.4 10113.0     250     177     210
GR1339.7  9710.3  1338.4  9720.4  1337.5  9730.7  1336.9  9737.9  1337.3  9744.7
GR1338.2  9750.0  1338.8  9757.2  1338.7  9764.3  1338.4  9770.3  1337.7  9775.4
GR1336.1  9782.3  1336.3  9788.1  1336.0  9791.7  1335.6  9798.0  1336.1  9809.4
GR1336.2  9840.3  1335.3  9848.3  1334.7  9855.7  1334.6  9861.1  1333.7  9866.9
GR1331.9  9874.0  1331.1  9882.8  1329.1  9892.8  1327.7  9901.9  1326.7  9905.4
GR1325.7  9909.4  1325.7    10000  1325.9 10113.0  1326.9 10122.9  1327.7 10140.1
GR1327.5 10154.3  1327.8 10167.0  1328.6 10182.6  1329.6 10198.3  1329.5 10209.4
GR1329.6 10220.2  1331.1 10234.4  1333.1 10254.0  1334.0 10271.2  1334.6 10282.3
GR1334.6 10289.2  1334.7 10295.7  1335.6 10302.1  1336.4 10313.5  1337.3 10324.0
GR1337.7 10331.7  1337.7 10340.1
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X1 1.031      51  9908.1 10062.8     230     167     180
GR1336.2  9804.3  1336.2  9827.2  1335.8  9836.2  1335.2  9844.2  1334.5  9851.2
GR1333.8  9855.2  1332.4  9861.3  1332.4  9869.0  1330.5  9874.3  1328.8  9880.1
GR1327.8  9885.9  1327.2  9894.1  1326.8  9900.2  1326.7  9905.6  1325.9  9908.1
GR1325.9 10000.0  1326.2 10062.8  1327.1 10065.5  1328.8 10070.6  1330.6 10077.5
GR1331.3 10084.6  1331.4 10090.6  1331.4 10098.1  1330.3 10104.8  1329.7 10108.6
GR1329.6 10114.5  1329.7 10122.8  1329.9 10131.0  1330.0 10141.1  1329.4 10148.9
GR1329.0 10157.5  1329.5 10165.3  1329.5 10176.7  1329.0 10186.6  1328.4 10196.9
GR1328.3 10209.6  1328.9 10221.3  1329.9 10232.4  1331.8 10246.1  1333.3 10253.5
GR1334.7 10262.9  1334.8 10267.5  1334.6 10277.8  1334.0 10286.9  1334.5 10297.1
GR1335.7 10306.9  1337.7 10321.2  1338.1 10331.2  1338.4 10346.3  1338.2 10356.6
GR1338.2 10368.7
NH     7    .040    9776    .030    9878    .040  9943.6    .030 10041.1     .04
NH 10169     .03 10249.5     .04 10348.7
X1 1.067      53  9944.5 10249.5     112     205     199
GR  1338    9519    1336    9551    1334    9611    1332    9679    1330    9734
GR  1328    9776  1326.3    9788  1326.3    9878    1330  9878.9    1332  9893.9
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GR1330.1  9935.9  1330.1  9943.6  1326.1  9944.5  1326.3 10000.0  1326.3 10041.1
GR1327.5 10044.2  1328.3 10050.6  1329.4 10062.6  1330.4 10075.0  1330.8 10082.2
GR1331.1 10091.9  1331.1 10097.9  1330.5 10102.1  1329.3 10105.6  1329.2 10109.5
GR1329.3 10116.7  1329.3 10129.1  1329.1 10142.5  1328.4 10153.8  1327.8 10162.0
GR1326.8 10169.0  1326.2 10171.9  1326.3 10249.5  1327.5 10254.1  1328.5 10260.1
GR1329.8 10267.7  1331.2 10275.9  1331.8 10282.0  1334.2 10292.5  1333.9 10295.0
GR1333.9 10304.4  1335.3 10310.7  1336.2 10317.1  1336.5 10324.3  1337.4 10330.1
GR1338.5 10338.7  1339.2 10344.8  1339.1 10348.7
NH     5    .040    9928    .030 10055.4    .040 10237.3     .03 10308.4     .04
NH 10403
X1 1.099      68    9928 10308.4     144     143     165
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GR1338.1  9746.0  1338.0  9751.6  1337.5  9758.9  1336.5  9768.1  1335.0  9780.0
GR1333.4  9797.5  1333.5  9809.0  1332.9  9817.7  1332.7  9826.9  1332.4  9838.1
GR1331.4  9857.8  1330.9  9868.7  1330.5  9878.7  1330.6  9885.5  1330.7  9891.8
GR1330.6  9902.0  1329.2  9910.7  1328.1  9919.0  1326.5  9928.0  1326.6 10000.0
GR1326.3 10047.8  1327.4 10055.4  1329.2 10063.7  1330.8 10070.1  1332.0 10077.8
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GR1330.1 10118.1  1329.6 10121.7  1329.2 10127.2  1330.8 10135.4  1332.9 10142.4
GR1334.4 10151.2  1334.4 10161.9  1333.0 10170.0  1332.3 10186.9  1332.4 10206.2
GR1332.2 10215.0  1331.7 10219.3  1330.2 10229.4  1328.2 10237.3  1326.5 10244.1
GR1326.2 10244.9  1326.3 10308.4  1329.5 10322.1  1333.2 10339.0  1335.7 10354.0
GR1336.4 10360.2  1336.1 10368.5  1337.6 10373.3  1338.1 10377.6  1338.1 10385.8
GR1338.1 10391.7  1338.3 10403.0  1338.3 10412.4
NC   .04     .04     .03
X1 1.112      41  9954.7 10188.4     100     154     119
GR1338.0  9800.2  1338.0  9809.7  1337.4  9817.5  1336.7  9826.2  1336.4  9832.6
GR1336.2  9838.7  1335.5  9849.5  1335.2  9855.8  1335.2  9860.8  1335.1  9866.7
GR1334.2  9875.7  1333.0  9881.7  1331.9  9890.3  1332.3  9898.5  1332.7  9904.0
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GR1331.7  9936.5  1329.9  9943.4  1326.7  9954.7  1326.6 10000.0  1326.6 10043.7
GR1326.6 10068.9  1326.5 10188.4  1328.3 10197.3  1330.6 10206.3  1333.3 10218.4
GR1335.2 10228.0  1337.0 10234.5  1338.2 10240.1  1339.0 10245.4  1339.0 10250.6
GR1338.4 10253.7  1338.1 10255.8  1337.9 10258.5  1338.0 10264.1  1338.7 10266.9
GR1339.0 10272.3
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GR1337.7  9848.3  1337.7  9868.6  1336.6  9878.5  1335.9  9884.3  1335.3  9889.4
GR1334.1  9894.7  1331.6  9904.2  1331.7  9914.4  1333.8  9916.1  1334.3  9919.7
GR1334.2  9938.4  1333.5  9942.9  1331.7  9948.9  1330.0  9957.3  1327.9  9965.0
GR1326.9  9971.5  1326.8  9973.7  1326.6 10000.0  1326.4 10030.0  1327.3 10036.8
GR1327.8 10041.0  1328.6 10043.0  1330.4 10046.2  1330.8 10054.1  1331.0 10069.7
GR1331.0 10074.5  1331.2 10082.8  1331.7 10086.9  1332.8 10092.9  1333.6 10100.3
GR1333.7 10103.2  1333.9 10109.6  1334.7 10117.7  1335.4 10125.4  1335.5 10129.4
GR1335.5 10135.1  1335.6 10142.0  1336.2 10145.9  1337.4 10150.9  1338.4 10154.5
GR1338.3 10163.7  1339.0 10165.8  1339.1 10167.7  1339.1 10171.9  1339.2 10179.0
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NC  .025    .025    .025
X1 1.165      15 9907.44 10090.1      67     137     109
X3    10                9907.44    1338 10090.1    1338
GR  1338    9645 1338.08 9907.43 1337.99 9907.44 1336.36  9907.5  1328.2    9918
GR1327.2  9933.5 1326.63  9966.5 1326.63 10000.0 1327.04 10033.5  1327.5 10066.5
GR  1328 10076.5 1334.39   10090 1337.57 10090.1 1339.17 10090.2    1339   10280
*       BASELINE ROAD BRIDGE
SB  0.95    1.56     2.6       0   159.5      20    1716    1.75 1326.97 1326.63
X1 1.182      15 9907.44 10090.1      90      90      90
X2                     1  1337.8  1340.8
X3    10                9907.44    1338 10090.1    1338
BT     5    9740  1338.1            9860  1338.8           10000  1340.4
BT 10150  1340.1           10260  1339.2
GR  1338    9865 1338.27 9907.43  1337.8 9907.44 1336.94  9907.5  1327.6    9918
GR1327.2  9933.5 1326.93  9966.5 1326.97   10000 1327.01 10033.5  1327.1 10066.5
GR1327.9 10076.5 1334.14   10090 1337.71 10090.1 1339.24 10090.2    1339   10318
NC  .040    .040    .030      .1      .3
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GR1344.0  9655.1  1341.6  9665.6  1341.6  9671.5  1342.5  9673.7  1342.4  9678.8
GR1340.0  9692.0  1336.2  9710.4  1334.9  9729.3  1334.6  9741.9  1334.8  9751.6
GR1334.1  9760.7  1333.7  9768.3  1333.9  9776.6  1333.5  9785.9  1332.7  9799.5
GR1331.7  9821.4  1331.4  9855.4  1330.7  9869.2  1330.3  9896.6  1329.6  9909.5
GR1328.1  9926.6  1327.9  9940.1  1327.8  9954.6  1327.8  9975.6  1327.6  9986.4
GR1327.7  9992.5  1327.5 10000.0  1327.8 10021.7  1328.2 10046.0  1329.2 10069.9
GR1330.1 10090.0  1330.9 10109.1  1332.5 10128.7  1335.1 10144.8  1339.0 10164.1
GR1339.3 10173.7  1339.7 10182.5  1340.1 10198.8
QT     1    4800
X1 1.251      43  9954.1 10037.5     250     258     250
GR1355.5  9820.6  1355.3  9826.1  1353.8  9832.3  1351.8  9840.9  1351.0  9848.3
GR1350.9  9854.1  1349.7  9862.6  1339.1  9898.3  1331.4  9933.7  1329.4  9945.4
GR1328.0  9954.1  1326.7  9972.0  1326.4 10000.0  1326.4 10000.1  1326.6 10017.7
GR1327.5 10037.5  1328.2 10045.3  1329.3 10054.6  1329.1 10057.4  1328.4 10061.1
GR1328.5 10066.9  1329.2 10071.0  1329.4 10080.8  1330.6 10083.5  1331.2 10094.2
GR1332.3 10105.1  1332.8 10114.3  1334.6 10124.2  1334.8 10133.9  1334.6 10140.9
GR1334.7 10151.8  1335.2 10160.8  1335.2 10169.0  1335.5 10189.5  1336.5 10196.7
GR1336.6 10199.7  1336.2 10201.9  1335.8 10204.3  1336.5 10216.2  1338.4 10227.7
GR1341.9 10236.5  1342.5 10243.3  1342.9 10247.8
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X1 1.295      54  9960.2   10037     190     235     235
GR1354.3  9762.5  1354.3  9767.9  1353.6  9772.4  1352.5  9776.3  1351.7  9783.7
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GR1346.5  9828.0  1344.4  9838.3  1342.4  9847.2  1336.8  9863.9  1336.7  9870.4
GR1336.4  9873.2  1336.8  9878.8  1337.1  9889.8  1337.0  9899.1  1335.1  9909.1
GR1332.3  9922.5  1332.0  9927.1  1331.7  9932.5  1332.0  9939.4  1332.4  9942.7
GR1332.5  9945.9  1332.0  9950.3  1330.5  9960.2  1327.3  9972.3  1326.7  9981.8
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GR1330.5 10048.3  1332.9 10060.1  1333.6 10066.9  1333.5 10070.6  1332.5 10079.9
GR1331.0 10092.0  1331.3 10099.9  1332.5 10114.3  1334.1 10122.0  1334.5 10135.5
GR1334.4 10144.5  1334.2 10155.5  1334.8 10163.5  1335.0 10169.8  1337.3 10185.6
GR1339.4 10195.4  1340.7 10201.1  1340.7 10205.9  1340.2 10211.0
X1 1.356      32  9951.3 10062.0     188     142     161
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GR1334.1 10164.3  1334.3 10173.3  1335.2 10184.8  1336.6 10197.9  1336.8 10204.6
GR1338.2 10211.4  1338.8 10220.1  1339.5 10228.1  1339.5 10233.5
X1 1.408      55  9987.7 10013.8     200     212     221
GR1355.7  9813.7  1356.1  9821.2  1356.3  9831.0  1355.0  9835.5  1353.6  9840.1
GR1352.5  9845.5  1351.8  9851.0  1350.6  9855.9  1349.6  9861.5  1348.8  9868.5
GR1347.8  9877.5  1346.0  9884.4  1340.5  9899.3  1338.1  9914.0  1334.8  9937.3
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GR1325.9  9997.8  1326.4 10000.0  1327.0 10005.8  1327.5 10013.8  1328.1 10020.6
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GR1328.9 10069.3  1328.9 10077.4  1329.3 10085.4  1329.7 10094.3  1330.1 10106.3
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GR1333.4 10166.3  1333.7 10177.6  1333.8 10182.5  1333.8 10188.1  1333.7 10201.1
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GR1336.2 10255.3  1337.1 10262.0  1337.4 10274.7  1338.8 10286.3  1339.7 10291.3
X1 1.452      15     9955   10051     245     299     229
GR  1337    9850     1336    9867    1334    9928    1332    9937    1330    9947
GR  1328    9955   1326.6   10000    1328   10051    1330   10139    1330   10169
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X1 1.484      36  9954.8 10057.7     159     170     170
GR1338.9  9892.0  1338.5  9903.9  1336.8  9918.2  1334.0  9931.3  1329.9  9944.9
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GR1334.3 10158.1  1334.1 10167.0  1333.7 10174.9  1334.1 10185.4  1334.5 10198.3
GR1335.6 10209.5  1337.1 10223.3  1339.0 10236.1  1339.0 10242.3  1339.0 10247.3
GR1339.0 10249.5  1337.8 10251.0  1337.8 10258.5  1339.0 10264.0  1339.0 10271.4
GR1339.1 10281.0
X1 1.501      47  9970.8 10025.2      57     105      92
GR1340.9  9784.1  1341.1  9789.0  1340.6  9794.8  1339.4  9801.0  1337.0  9806.8
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GR1333.1 10051.6  1333.1 10057.3  1332.9 10061.7  1332.0 10069.5  1332.1 10074.8
GR1332.8 10077.7  1334.0 10082.7  1335.6 10087.7  1336.6 10090.6  1336.7 10125.3
GR1336.6 10139.1  1336.6 10147.8  1337.5 10158.6  1337.9 10165.5  1338.0 10176.6
GR1337.4 10183.7  1336.8 10193.8  1336.8 10201.9  1337.4 10206.3  1337.9 10211.9
GR1336.9 10216.2  1337.1 10228.4  1338.1 10233.6  1338.2 10240.3  1338.4 10249.3
GR1338.6 10256.6  1339.0 10264.8
X1 1.543      52  9949.5 10046.5     225     189     220
X3                                        10121.1  1337.3
GR1339.3  9693.9  1339.1  9702.3  1338.7  9712.5  1338.5  9719.0  1337.4  9726.9
GR1337.5  9735.2  1338.4  9740.0  1338.3  9745.1  1337.8  9752.2  1337.6  9766.9
GR1337.7  9777.1  1337.5  9787.1  1336.8  9799.9  1336.3  9836.5  1336.3  9845.7
GR1336.3  9851.5  1336.0  9856.1  1335.2  9863.2  1333.3  9871.8  1331.7  9878.6
GR1331.2  9891.5  1330.8  9899.4  1330.3  9906.3  1330.3  9910.7  1330.1  9920.6
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GR1326.4 10000.0  1326.4 10046.5  1329.0 10051.9  1329.7 10059.4  1330.5 10067.2
GR1332.1 10080.5  1332.8 10090.4  1334.0 10098.8  1334.7 10107.8  1336.2 10117.1
GR1337.3 10121.1  1337.3 10152.4  1337.2 10159.8  1337.2 10164.0  1336.7 10169.7
GR1336.7 10176.0  1337.0 10180.7  1337.8 10185.2  1338.6 10190.6  1338.7 10198.6
GR1339.1 10211.6  1339.8 10223.4
X1 1.585      56  9958.1 10080.6     270     170     225
X3                        9723.8  1338.2
GR1338.7  9681.5  1337.8  9689.0  1337.6  9701.3  1337.4  9705.9  1336.8  9710.6
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GR1335.5  9750.6  1334.6  9764.7  1333.8  9772.9  1330.9  9819.5  1330.6  9835.0
GR1330.9  9849.5  1330.7  9859.1  1330.6  9868.4  1330.5  9877.0  1331.1  9885.8
GR1331.4  9891.6  1330.2  9899.1  1329.5  9915.3  1329.7  9924.0  1329.7  9930.0
GR1328.8  9941.0  1328.4  9945.2  1327.9  9954.7  1326.5  9958.1  1326.6  9958.2
GR1326.7 10000.0  1326.6 10080.6  1327.5 10084.0  1330.6 10100.8  1331.0 10107.7
GR1331.1 10116.5  1331.7 10124.1  1332.5 10130.1  1333.4 10138.0  1334.6 10147.2
GR1335.3 10152.5  1335.4 10158.0  1335.5 10161.5  1335.1 10168.8  1335.0 10172.0
GR1334.5 10175.3  1334.6 10184.9  1336.7 10187.8  1336.8 10193.0  1337.0 10198.8
GR1337.1 10204.9  1337.4 10211.7  1337.8 10217.6  1338.6 10223.8  1338.8 10225.9
GR1338.9 10251.9
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X1 1.661      41  9933.2 10082.8     313     402     502
GR1357.1  9648.3  1357.0  9654.2  1354.0  9686.5  1347.6  9736.2  1344.9  9754.4
GR1342.0  9775.3  1339.6  9790.7  1338.8  9797.9  1338.6  9809.9  1338.1  9817.4
GR1337.9  9825.6  1337.7  9834.2  1337.0  9839.5  1334.2  9852.7  1333.9  9863.9
GR1330.8  9888.1  1327.3  9912.6  1326.7  9923.0  1325.6  9933.2  1323.6 10000.0
GR1324.7 10082.8  1326.6 10089.2  1327.8 10098.0  1328.8 10109.6  1331.9 10131.1
GR1336.6 10151.9  1336.8 10166.0  1336.2 10175.0  1336.2 10184.1  1336.1 10191.4
GR1335.9 10200.7  1335.9 10208.6  1336.6 10217.0  1337.2 10224.6  1337.1 10228.7
GR1336.8 10232.6  1336.8 10239.7  1337.3 10245.8  1337.7 10253.4  1338.7 10262.6
GR1339.7 10292.9
NC                          .3      .5
X1 1.693      29  9967.0 10028.8     180     165     169
GR1356.9  9779.8  1350.5  9826.8  1346.3  9851.7  1338.6  9883.9  1335.4  9897.1
GR1330.8  9924.7  1331.7  9937.7  1329.3  9950.3  1327.8  9959.4  1326.7  9967.0
GR1325.3  9970.7  1324.4 10000.0  1324.3 10021.1  1327.5 10028.8  1328.8 10042.1
GR1329.4 10055.8  1330.0 10066.6  1330.7 10079.3  1332.2 10090.8  1332.8 10099.7
GR1333.2 10109.7  1333.4 10119.3  1337.3 10134.9  1338.6 10144.1  1338.8 10148.5
GR1338.8 10151.7  1339.2 10161.9  1339.7 10190.8  1339.3 10191.3
NC  .025    .025    .025
X1 1.739      22  9901.8 10147.5     338     165     244
X3    10                 9901.8    1339 10147.5    1338
GR  1356    9590 1357.49  9738.6  1353.1 9738.61 1353.09 9745.79 1351.07  9745.8
GR1337.8 9775.21 1338.15 9809.02  1339.7 9872.42 1338.89  9901.8 1328.83 9936.17
GR1327.8  9944.9 1327.64   10000  1327.810063.48 1327.4910091.96 1324.8910105.26
GR1331.210127.42 1337.51 10147.5 1352.11 10187.3 1353.14 10187.4 1353.14 10192.8
GR1357.7 10192.9    1358   10285
*        SUPERSTITION BRIDGE
SB  0.95    1.56     2.6       0  161.87      16    1998    3.45 1327.64  1327.4
X1 1.765      22  9901.8 10147.3     135     135     135
X2                    1    1353  1358.6
X3    10                 9901.8    1339 10147.3    1338
BT     5    9590    1356            9746    1358           10000    1358
BT 10188    1358           10285    1358
GR  1356    9590  1357.5  9742.2 1352.96 9742.21 1352.96 9745.79 1350.89  9745.8
GR  1338 9775.21 1337.91 9809.02 1339.56 9872.42 1339.43  9901.8 1329.76 9936.17
GR1327.9  9944.9  1327.4 10000.0 1327.4810063.48 1326.1610106.77  1331.910127.24
GR1337.9 10147.3  1338.110155.77 1352.23 10187.2 1353.39 10188.1 1353.39 10192.8
GR1357.9 10192.9    1358   10285
NC  .040    .040    .030      .1      .3
X1 1.784      26  9866.0 10069.6      59     130     100
GR  1340    9760    1340  9766.4    1338  9826.4    1336  9836.4  1334.2  9842.3
GR1334.2  9842.4  1327.1  9866.0  1327.7  9890.0  1329.4  9899.9  1329.3  9905.8
GR1327.9  9914.9  1327.7  9948.1  1327.8  9968.6  1327.9  9991.3  1327.9 10000.0
GR1328.1 10017.8  1328.1 10035.1  1328.1 10052.8  1328.3 10064.7  1329.2 10069.6
GR1339.6 10104.6  1340.4 10111.8  1340.1 10116.1  1339.6 10122.0  1340.4 10136.1
GR1341.0 10143.3
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X1 1.822      33  9939.3 10074.1     198     208     202
X3                       9905.7  1337.5
GR1346.4  9710.6  1346.4  9719.5  1344.7  9725.7  1341.6  9729.6  1342.3  9738.1
GR1341.0  9744.5  1337.9  9763.2  1336.6  9789.0  1337.4  9807.6  1338.5  9825.9
GR1339.6  9838.9  1339.6  9849.2  1339.4  9859.9  1339.2  9870.3  1338.1  9882.2
GR1337.6  9885.3  1338.1  9902.5  1337.5  9905.7  1335.4  9914.6  1329.4  9931.7
GR1329.1  9939.3  1328.7  9947.6  1328.7  9953.8  1328.8  9971.6  1328.6  9998.2
GR1328.5 10000.0  1328.6 10028.2  1328.6 10048.3  1328.7 10061.8  1328.7 10074.1
GR1329.7 10083.0  1341.0 10111.6  1340.9 10125.7
X1 1.858      24  9958.0 10041.3     220     173     190
GR  1340    9800    1338  9805.0  1336.6  9812.0    1336  9876.0    1334  9925.0
GR  1332  9944.0    1330  9958.0    1328  9982.0  1327.7 10000.0  1328.1 10012.8
GR1328.6 10022.0  1329.7 10032.5  1331.4 10041.3  1331.5 10047.8  1331.8 10055.7
GR1332.5 10059.1  1333.8 10064.8  1334.1 10073.2  1335.7 10077.2  1336.6 10083.1
GR1337.0 10088.8  1337.3 10093.6  1337.8 10096.9  1337.9 10100.7
X1 1.907      63  9644.9  9764.3     255     210     259
GR1343.9  9549.6  1343.3  9557.3  1342.3  9564.1  1341.6  9570.2  1340.8  9575.1
GR1337.6  9589.2  1334.8  9603.0  1331.0  9625.0  1329.8  9632.5  1329.1  9637.6
GR1328.8  9643.7  1327.3  9644.9  1327.4  9764.3  1328.4  9767.8  1329.3  9772.2
GR1330.0  9780.2  1330.5  9787.1  1330.9  9794.2  1331.3  9796.5  1331.8  9806.7
GR1332.2  9817.9  1332.3  9866.9  1332.3  9896.4  1332.4  9912.4  1333.2  9927.2
GR1334.0  9936.7  1335.4  9945.5  1336.8  9951.0  1336.6  9955.4  1335.6  9960.2
GR1334.0  9968.6  1329.9  9981.1  1328.0  9993.4  1327.4  9998.4  1327.6 10000.0
GR1328.2 10011.2  1329.9 10018.9  1330.9 10022.8  1330.9 10025.5  1330.3 10031.1
GR1330.4 10035.0  1331.1 10038.8  1332.1 10042.3  1334.3 10045.9  1334.4 10053.0
GR1334.4 10060.1  1334.8 10068.1  1335.0 10078.0  1335.1 10087.5  1335.3 10101.7
GR1335.5 10109.9  1335.7 10117.0  1337.3 10119.5  1337.6 10121.0  1337.6 10124.3
GR1337.4 10128.2  1337.4 10135.0  1337.7 10141.4  1338.5 10146.3  1339.5 10152.5
GR1340.3 10156.7  1340.7 10162.6  1341.0 10172.4
X1 1.962      75  9979.5 10018.9     290     290     289
GR1345.2  9595.9  1345.3  9601.2  1344.4  9606.5  1343.4  9612.5  1343.2  9617.6
GR1343.6  9622.0  1344.1  9627.3  1344.2  9633.5  1343.7  9639.0  1342.7  9643.1
GR1342.0  9649.2  1341.7  9659.0  1341.0  9665.9  1341.1  9672.7  1341.4  9679.7
GR1341.5  9685.1  1341.3  9688.9  1340.7  9695.8  1340.2  9705.5  1339.4  9713.6
GR1338.5  9720.7  1337.5  9730.1  1335.7  9745.3  1332.6  9762.0  1331.4  9768.6
GR1331.1  9776.1  1331.6  9780.8  1331.2  9788.9  1331.3  9798.3  1331.6  9809.3
GR1331.6  9821.3  1331.8  9836.0  1331.4  9853.8  1331.4  9869.9  1331.5  9887.0
GR1331.5  9899.2  1331.3  9911.1  1331.1  9924.4  1330.8  9937.3  1329.5  9953.7
GR1329.2  9966.8  1328.4  9979.5  1328.0  9985.7  1327.0  9994.6  1327.0  9999.8
GR1327.1 10000.0  1327.7 10010.5  1328.6 10018.9  1331.9 10032.2  1332.6 10039.7
GR1332.0 10044.3  1331.0 10051.5  1332.3 10057.5  1333.5 10062.2  1334.0 10065.8
GR1332.7 10071.5  1332.1 10076.4  1332.0 10083.7  1331.2 10089.4  1330.8 10094.6
GR1330.9 10116.3  1331.5 10134.0  1332.7 10150.1  1333.8 10165.0  1334.2 10176.7
GR1334.7 10187.0  1333.8 10195.5  1333.3 10200.7  1333.5 10205.6  1334.6 10209.1
GR1335.8 10214.6  1336.8 10220.8  1339.8 10232.3  1340.3 10238.7  1340.4 10255.2
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X1 2.006      48  9961.5 10137.9     197     207     231
X3                                        10219.9  1337.5
GR1343.9  9769.6  1344.3  9777.8  1344.2  9784.3  1343.4  9791.6  1342.0  9798.7
GR1338.0  9804.4  1336.0  9819.3  1335.7  9825.8  1335.1  9827.6  1335.1  9837.7
GR1334.2  9847.6  1332.4  9861.0  1331.9  9879.3  1330.2  9917.1  1329.8  9928.2
GR1329.8  9936.4  1329.3  9942.4  1328.6  9949.2  1328.2  9954.7  1326.3  9961.5
GR1326.3  9962.3  1327.4 10000.0  1327.5 10132.8  1327.9 10137.9  1328.7 10144.0
GR1329.3 10151.0  1330.3 10157.4  1331.5 10164.8  1332.8 10172.7  1332.9 10177.4
GR1332.2 10181.0  1331.6 10182.7  1331.0 10186.0  1330.9 10189.6  1331.2 10194.0
GR1332.6 10197.4  1336.1 10206.0  1336.9 10210.2  1337.4 10215.1  1337.5 10219.9
GR1337.4 10223.1  1337.0 10225.2  1337.0 10232.1  1337.7 10236.4  1338.6 10241.9
GR1339.8 10247.9  1341.2 10265.4  1341.6 10267.7
X1 2.049      66  9941.1 10067.3     185     310     228
X3                        9751.9    1338 10127.4  1337.7
GR1344.3  9623.4  1344.4  9631.6  1344.6  9636.1  1344.3  9641.4  1343.8  9647.7
GR1343.0  9654.0  1341.9  9659.6  1341.6  9663.1  1341.8  9665.5  1342.9  9669.1
GR1343.2  9672.8  1343.3  9677.4  1343.3  9684.1  1343.1  9688.2  1342.7  9694.8
GR1342.4  9699.2  1342.1  9705.4  1342.1  9711.0  1341.9  9717.0  1341.3  9723.2
GR1340.5  9728.6  1339.6  9732.9  1337.8  9738.4  1337.9  9745.2  1338.1  9749.3
GR1338.0  9751.9  1337.4  9756.9  1336.6  9762.5  1335.6  9768.7  1334.9  9776.2
GR1333.8  9798.7  1332.6  9836.4  1331.2  9875.4  1330.8  9889.7  1330.4  9905.4
GR1329.4  9919.6  1329.0  9930.7  1328.4  9938.4  1326.9  9941.1  1327.0 10000.0
GR1327.1 10067.3  1332.7 10070.1  1334.1 10077.6  1335.4 10084.3  1336.2 10090.5
GR1337.4 10121.0  1337.7 10127.4  1337.7 10134.9  1336.9 10140.1  1336.4 10142.7
GR1335.4 10146.1  1335.5 10148.8  1335.8 10151.4  1337.0 10154.2  1337.9 10157.3
GR1338.7 10159.8  1339.0 10161.6  1339.2 10164.5  1339.2 10166.3  1339.7 10174.5
GR1340.4 10182.6  1341.1 10189.4  1341.6 10198.7  1341.5 10205.2  1341.8 10219.1
GR1341.8 10230.6
X1 2.089      48  9971.5 10048.1     190     212     210
X3                                        10074.6  1377.6
GR1342.4  9691.3  1341.8  9700.1  1340.8  9706.2  1340.2  9713.2  1339.8  9720.2
GR1340.1  9726.0  1340.4  9731.8  1340.5  9737.2  1340.2  9742.7  1339.7  9747.0
GR1338.8  9753.0  1337.4  9759.8  1337.0  9760.0  1336.0  9805.0  1334.0  9815.0
GR1333.8  9823.2  1332.0  9845.0  1331.8  9849.5  1331.8  9862.6  1331.3  9901.0
GR1331.2  9924.0  1330.0  9948.0  1329.9  9951.1  1329.4  9959.7  1328.9  9969.4
GR1327.5  9971.5  1327.4 10000.0  1327.6 10048.1  1330.4 10051.2  1331.7 10054.3
GR1335.9 10062.6  1337.2 10069.1  1337.7 10074.6  1337.7 10080.6  1337.7 10089.2
GR1337.5 10097.7  1336.9 10101.9  1336.1 10103.9  1336.3 10110.3  1337.2 10114.8
GR1337.9 10123.4  1338.6 10131.0  1339.6 10138.5  1340.6 10145.7  1341.2 10151.2
GR1341.2 10157.0  1341.7 10168.6  1341.9 10182.5
X1 2.129      63  9991.9 10014.7     220     235     211
GR1341.6  9735.1  1340.7  9744.4  1339.8  9750.6  1339.0  9755.5  1338.9  9764.7
GR1338.6  9773.9  1338.3  9785.4  1338.6  9793.3  1338.1  9803.2  1337.6  9813.6
GR1337.4  9828.0  1337.0  9836.9  1336.1  9843.0  1336.7  9850.8  1336.3  9854.3
GR1336.8  9860.0  1337.0  9864.0  1336.8  9871.3  1336.4  9881.5  1335.5  9891.4
GR1335.4  9896.5  1335.4  9913.3  1333.3  9920.3  1332.2  9926.7  1331.8  9930.8
GR1331.4  9935.5  1330.8  9942.7  1330.8  9947.1  1330.9  9954.7  1331.3  9961.8
GR1331.6  9968.3  1331.6  9972.9  1331.4  9978.8  1331.2  9982.8  1330.4  9986.2
GR1329.3  9991.9  1328.5  9996.6  1328.4 10000.0  1329.0 10006.9  1329.4 10014.7
GR1329.7 10025.2  1330.2 10034.7  1330.9 10041.0  1330.9 10049.1  1330.1 10057.3
GR1329.7 10063.5  1329.7 10070.8  1330.1 10076.6  1330.7 10084.3  1331.1 10096.0
GR1331.6 10110.7  1333.0 10126.5  1335.1 10146.1  1335.5 10153.8  1335.4 10160.1
GR1335.6 10168.2  1337.2 10170.0  1337.6 10175.8  1338.8 10183.3  1339.4 10192.2
GR1340.7 10199.5  1341.1 10204.9  1341.1 10205.0
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X1 2.173      55  9955.1 10040.6     174     252     235
GR1345.1  9854.1  1345.1  9858.6  1345.0  9864.2  1344.2  9867.8  1342.5  9872.9
GR1341.3  9877.8  1341.3  9885.4  1339.4  9889.9  1339.2  9895.4  1339.2  9901.2
GR1339.0  9906.4  1339.0  9916.0  1338.5  9921.6  1337.9  9928.3  1336.7  9937.6
GR1334.6  9946.1  1332.4  9955.1  1331.7  9965.7  1331.3  9974.1  1330.1  9980.7
GR1329.2  9987.2  1328.2  9995.2  1327.8  9999.2  1327.7 10000.0  1327.8 10004.8
GR1329.1 10012.6  1329.7 10019.9  1330.8 10028.9  1332.8 10040.6  1333.7 10049.5
GR1333.8 10056.4  1333.4 10062.4  1332.3 10069.6  1331.9 10075.4  1331.8 10082.9
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GR1330.9 10122.0  1331.9 10127.1  1332.0 10132.9  1332.1 10144.6  1332.6 10157.9
GR1332.7 10169.2  1333.3 10179.5  1334.5 10191.7  1336.3 10205.9  1337.9 10219.2
GR1339.7 10231.7  1340.8 10242.7  1341.3 10249.6  1341.4 10252.1  1341.6 10272.0
X1 2.213      69  9966.2 10020.2     220     210     208
GR1345.8  9789.4  1344.4  9808.8  1343.8  9820.0  1343.5  9826.3  1342.9  9829.9
GR1341.9  9833.9  1341.6  9837.2  1342.0  9841.3  1342.3  9846.0  1342.1  9853.4
GR1341.4  9855.9  1340.4  9858.5  1341.7  9863.2  1341.6  9869.8  1341.1  9872.9
GR1340.8  9874.3  1340.6  9880.5  1342.0  9886.9  1341.6  9892.6  1340.5  9896.8
GR1339.2  9900.8  1338.8  9905.5  1339.5  9912.8  1340.5  9917.6  1340.7  9923.0
GR1339.7  9930.0  1337.6  9939.4  1336.7  9948.6  1335.6  9955.6  1332.3  9966.2
GR1329.0  9990.8  1327.5 10000.0  1327.3 10000.2  1327.3 10006.1  1327.8 10008.7
GR1329.7 10015.4  1331.7 10020.2  1331.9 10032.2  1332.0 10037.4  1332.3 10043.3
GR1332.7 10050.8  1333.4 10058.2  1333.3 10066.4  1332.9 10075.9  1332.8 10088.5
GR1332.8 10102.3  1333.0 10114.9  1333.1 10122.8  1333.1 10133.6  1332.9 10147.2
GR1332.5 10155.7  1332.6 10167.1  1332.9 10176.5  1333.6 10185.3  1334.1 10192.5
GR1334.0 10195.7  1333.8 10200.2  1333.0 10211.9  1332.7 10218.8  1332.8 10223.6
GR1333.6 10228.6  1334.4 10233.2  1335.6 10238.7  1336.8 10245.0  1338.2 10253.4
GR1339.9 10263.0  1340.9 10274.1  1341.6 10277.7  1342.5 10299.4
X1 2.254      42  9966.8 10030.6     228     190     221
GR1343.6  9823.4  1343.7  9828.4  1343.1  9834.1  1341.8  9839.0  1341.6  9844.7
GR1341.2  9852.0  1340.2  9858.6  1339.4  9865.5  1338.8  9874.5  1337.8  9886.4
GR1337.3  9897.8  1336.4  9910.4  1334.9  9921.7  1334.6  9932.9  1334.3  9939.4
GR1332.9  9946.2  1331.4  9950.4  1331.6  9959.9  1331.1  9965.0  1327.4  9966.8
GR1326.5 10000.0  1326.4 10030.6  1328.1 10034.4  1329.1 10038.7  1330.7 10043.9
GR1333.3 10052.1  1335.4 10058.7  1335.6 10065.8  1335.7 10071.4  1335.8 10082.1
GR1336.2 10093.2  1336.5 10102.0  1336.8 10112.8  1337.0 10122.0  1337.6 10127.4
GR1338.2 10134.9  1339.4 10140.9  1340.2 10146.4  1341.3 10157.8  1341.5 10161.8
GR1342.3 10178.3  1342.2 10179.3
X1 2.304      32  9904.9 10059.1     276     222     261
X3                                        10138  1341.3
GR1341.5  9677.8  1341.3  9713.8  1340.9  9737.7  1340.5  9757.2  1340.1  9773.8
GR1339.7  9785.8  1338.7  9790.0  1339.9  9792.6  1340.4  9796.3  1340.6  9799.9
GR1339.6  9809.6  1337.7  9822.6  1337.5  9829.3  1337.1  9841.3  1336.0  9855.8
GR1334.1  9870.3  1330.8  9882.6  1329.6  9892.5  1328.8  9898.1  1328.4  9901.9
GR1327.1  9904.9  1326.9 10000.0  1326.8 10059.1  1329.2 10066.0  1330.6 10073.7
GR1332.7 10084.9  1337.9 10109.1  1339.8 10120.3  1340.8 10129.2  1341.3 10138.0
GR1341.6 10145.6  1341.8 10149.6
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QT     1    3500
NC                                  .3      .5
X1 2.340      27  9970.5 10013.4     220     166     189
GR1341.4  9814.3  1340.6  9834.3  1339.1  9856.4  1338.2  9871.9  1336.7  9885.8
GR1336.0  9897.4  1335.3  9914.7  1335.7  9925.6  1335.4  9934.8  1334.6  9943.3
GR1332.2  9951.8  1330.2  9960.4  1328.9  9970.5  1328.5  9993.1  1328.4 10000.0
GR1328.8 10013.4  1329.5 10028.7  1330.4 10040.4  1331.0 10046.5  1331.1 10054.2
GR1331.0 10060.2  1331.1 10075.9  1331.3 10087.5  1332.0 10096.1  1333.2 10105.9
GR1338.4 10129.5  1340.0 10135.8
NC  .025    .025    .025
*       SOUTHERN AVE. BRIDGE
X1 2.350      13    9937 10061.5      68      50      56
X3    10                   9937  1338.9 10061.5  1339.7
GR1341.6    9850 1341.54  9926.9  1340.1    9927  1340.1  9936.9 1339.68    9937
GR1328.5  9963.5  1328.4   10000  1328.5 10036.5 1338.89 10061.5 1339.65 10061.6
GR1339.7 10071.6 1341.27 10071.7  1341.2   10300
SB  0.95    1.56     2.6       0      73       9     916     2.4 1328.58  1328.4
X1 2.370      14    9937 10061.5     105     105     105
X2                     1  1338.9  1341.6
X3    10                   9937  1339.7 10061.5  1338.9
BT     5    9850  1341.6            9937  1341.6           10000  1341.6
BT 10072  1341.6           10300  1341.2
GR1341.6    9850  1341.6  9926.9  1341.6    9927  1340.1    9927  1340.1  9936.9
GR1339.3    9937 1328.28  9963.5 1328.58   10000  1328.5 10036.5 1339.03 10061.5
GR1339.7 10061.6 1339.76 10071.6 1341.27 10071.7    1342   10170
NC  .040    .040    .030      .1      .3
X1 2.377      14    9944   10038      60     108      73
GR  1340    9690    1338    9730    1336    9758    1334    9790    1332    9820
GR  1332    9930    1330    9944  1328.6   10000    1330   10038    1332   10042
GR  1334   10050    1336   10059    1338   10067    1340   10090
NH     5     .04    9651     .03    9838     .04    9943     .03   10025     .04
NH 10138
X1 2.391      25    9943   10025      28      53      36
GR  1342    9490    1340    9510    1338    9538    1336    9560    1334    9590
GR  1332    9608    1330    9632    1328    9642  1326.6    9651  1326.6    9838
GR  1328    9845    1330    9855    1332    9868    1332    9918    1330    9925
GR  1328    9938  1326.6    9943  1326.6   10025    1328   10042    1330   10082
GR  1332   10099    1334   10115    1336   10123    1338   10133    1340   10138
NC   .04     .04     .03
X1 2.440      36  9956.1 10017.9     235     375     258
GR1347.0  9747.2  1345.9  9772.2  1344.3  9791.2  1343.5  9807.2  1341.7  9823.1
GR1341.0  9838.1  1340.2  9857.7  1337.6  9884.5  1334.5  9913.2  1331.9  9934.2
GR1331.1  9946.9  1330.8  9956.1  1330.7  9968.1  1330.2  9984.8  1329.7 10000.0
GR1329.8 10008.8  1330.1 10017.9  1330.8 10027.0  1331.6 10037.7  1332.4 10044.6
GR1332.8 10053.6  1334.5 10064.3  1335.1 10070.4  1335.2 10099.6  1334.3 10105.2
GR1333.9 10109.1  1333.8 10112.5  1334.0 10117.8  1334.3 10120.5  1334.5 10126.5
GR1336.0 10139.9  1336.8 10149.9  1340.2 10168.3  1343.1 10184.7  1343.3 10196.6
GR1343.3 10196.7
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X1 2.482      45  9980.0 10031.1    230    135    223
GR1343.1  9722.0  1342.9  9729.2  1341.5  9739.9  1340.9  9752.0  1340.0  9770.3
GR1339.4  9784.0  1339.1  9793.6  1339.8  9809.1  1339.6  9815.9  1338.5  9823.6
GR1336.4  9827.6  1335.8  9835.9  1335.8  9842.4  1336.6  9848.3  1337.4  9854.3
GR1337.2  9859.8  1336.5  9867.8  1335.8  9874.7  1335.8  9885.8  1335.8  9892.6
GR1335.8  9904.0  1335.3  9912.8  1334.4  9922.6  1333.5  9931.5  1332.4  9946.3
GR1331.6  9959.6  1331.1  9969.8  1330.9  9980.0  1330.7  9994.7  1330.3 10000.0
GR1330.0 10008.2  1329.9 10016.2  1331.4 10031.1  1333.1 10049.0  1335.8 10072.8
GR1335.8 10078.9  1337.8 10092.3  1338.9 10101.0  1339.8 10110.7  1340.8 10120.4
GR1341.5 10129.6  1342.6 10141.6  1343.0 10151.1  1343.7 10167.1  1343.7 10258.0
X1 2.526      52  9967.8 10024.9    293    207    235
X3                       9830.2  1339.1
GR1346.3  9753.6  1344.7  9772.8  1342.6  9791.2  1342.1  9799.5  1341.5  9806.2
GR1338.9  9811.2  1338.4  9816.0  1338.4  9819.6  1338.5  9825.4  1339.1  9830.2
GR1339.0  9836.5  1338.3  9843.2  1337.8  9854.9  1337.1  9868.3  1335.4  9884.8
GR1335.0  9904.5  1335.0  9917.0  1335.1  9928.4  1335.0  9937.1  1334.7  9945.2
GR1333.7  9953.1  1333.1  9959.9  1332.6  9967.8  1331.5  9977.2  1331.1  9983.9
GR1330.7  9992.5  1331.2 10000.0  1331.6 10006.8  1332.3 10017.3  1332.8 10024.9
GR1332.3 10032.7  1332.4 10047.4  1332.9 10063.2  1333.7 10076.1  1334.0 10088.0
GR1334.4 10099.5  1334.5 10116.8  1334.9 10130.5  1335.7 10148.9  1336.5 10162.4
GR1337.5 10174.4  1338.2 10185.1  1339.8 10193.4  1339.6 10202.4  1340.8 10212.0
GR1341.6 10220.3  1342.8 10236.3  1342.8 10243.6  1342.9 10270.7  1342.6 10303.3
GR1342.3 10318.8  1343.0 10337.7
X1 2.572      40  9925.1 10048.2    227    298    241
GR1345.7  9821.5  1345.5  9842.5  1344.0  9850.7  1341.6  9856.2  1341.5  9862.9
GR1340.5  9871.3  1339.2  9878.0  1337.8  9884.8  1336.2  9892.3  1334.8  9899.7
GR1334.8  9909.2  1334.0  9925.1  1333.5  9947.4  1333.1  9967.4  1332.2  9990.4
GR1331.6 10000.0  1331.7 10011.7  1331.9 10021.4  1333.2 10033.2  1334.1 10048.2
GR1334.7 10065.4  1335.2 10075.6  1335.6 10095.4  1335.5 10114.7  1335.2 10125.6
GR1335.0 10137.2  1334.9 10151.9  1334.1 10157.3  1334.5 10173.7  1335.3 10193.7
GR1336.0 10211.1  1336.3 10228.1  1337.5 10240.8  1338.1 10254.9  1339.4 10270.5
GR1339.6 10275.2  1342.1 10289.4  1342.1 10295.7  1342.7 10299.0  1342.8 10307.6
X1 2.613      39  9984.8 10061.3    218    218    215
GR1344.9  9802.2  1344.6  9840.1  1339.2  9865.9  1338.8  9870.9  1338.3  9875.8
GR1338.3  9881.9  1337.2  9891.2  1336.3  9905.4  1335.8  9919.7  1335.1  9933.9
GR1334.0  9966.5  1333.5  9984.8  1332.9 10000.0  1332.2 10016.1  1332.3 10029.5
GR1332.9 10043.0  1333.9 10061.3  1334.4 10080.0  1334.9 10090.5  1335.0 10103.7
GR1334.9 10119.3  1335.5 10129.3  1335.5 10139.9  1335.6 10151.8  1335.9 10162.4
GR1336.5 10179.3  1336.8 10194.0  1337.1 10206.0  1337.9 10219.9  1340.3 10235.2
GR1341.0 10250.0  1341.2 10258.6  1342.0 10265.4  1342.4 10275.5  1342.5 10285.8
GR1342.6 10296.7  1342.9 10308.3  1343.4 10335.0  1343.5 10371.6
X1 2.654      34  9892.9   10048    203    258    220
GR1345.7  9747.7  1345.5  9762.6  1344.5  9768.8  1341.8  9783.5  1339.4  9801.4
GR1338.2  9809.8  1337.1  9823.6  1337.1  9828.8  1336.0  9833.1  1336.0  9839.8
GR1336.3  9842.2  1336.2  9850.8  1335.3  9856.8  1335.2  9867.0  1334.9  9873.5
GR1334.3  9892.9  1333.3  9914.1  1333.1  9932.7  1332.8  9949.4  1332.9  9958.6
GR1332.2  9965.4  1332.3  9973.1  1333.0  9981.0  1333.0  9989.8  1332.6  9999.3
GR1332.5 10000.0    1334   10048    1336   10064    1338   10073    1338   10128
GR  1336   10148    1336   10188    1338   10205    1340   10363
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X1 2.702      58  9950.2 10042.2     278     171     250
X3                       9690.5  1339.7
GR1342.3  9547.3  1342.2  9562.0  1341.6  9569.3  1341.5  9584.9  1339.8  9602.6
GR1339.5  9615.8  1339.6  9623.9  1339.7  9632.3  1339.6  9636.9  1338.7  9643.5
GR1338.3  9651.5  1337.9  9663.8  1337.9  9674.1  1338.3  9681.6  1339.5  9687.5
GR1339.7  9690.5  1339.6  9701.3  1339.4  9709.5  1337.8  9718.5  1336.4  9730.1
GR1334.9  9742.5  1334.4  9751.3  1333.9  9767.3  1332.6  9788.7  1331.8  9810.0
GR1331.1  9834.3  1330.2  9848.0  1330.2  9856.6  1331.2  9866.1  1331.9  9875.5
GR1332.2  9887.0  1331.8  9897.0  1329.8  9907.6  1329.5  9919.0  1329.2  9925.9
GR1328.5  9935.5  1327.9  9943.3  1326.4  9950.2  1326.5 10000.0  1326.8 10042.2
GR1328.0 10051.2  1329.9 10060.5  1332.3 10069.5  1333.4 10077.7  1333.4 10089.5
GR1333.2 10098.7  1332.8 10105.8  1332.8 10116.7  1333.0 10123.9  1335.2 10131.3
GR1337.7 10142.4  1341.0 10153.1  1341.5 10161.0  1341.9 10168.4  1342.1 10175.3
GR1343.0 10187.2  1343.6 10197.1  1343.6 10246.6
X1 2.741      52  9969.9 10036.0     205     238     208
X3                       9841.6  1340.6
GR1342.5  9679.3  1342.8  9697.9  1343.3  9713.4  1342.0  9728.0  1341.8  9741.4
GR1341.4  9753.4  1341.7  9768.4  1341.6  9780.2  1341.5  9789.5  1341.4  9798.1
GR1341.2  9813.0  1341.2  9824.2  1341.1  9833.9  1340.6  9841.6  1338.7  9852.3
GR1336.7  9859.0  1335.9  9864.0  1335.7  9903.7  1335.4  9913.9  1334.7  9922.1
GR1332.5  9929.1  1330.7  9935.7  1329.7  9942.2  1329.1  9949.8  1329.1  9962.8
GR1328.0  9967.5  1326.6  9969.9  1326.2 10000.0  1326.3 10036.0  1327.4 10040.9
GR1328.3 10048.2  1329.2 10056.4  1329.6 10067.5  1330.0 10076.2  1330.3 10085.8
GR1330.4 10097.1  1330.6 10109.2  1330.9 10117.3  1331.3 10126.5  1332.3 10135.7
GR1332.7 10144.6  1333.4 10153.5  1334.3 10161.9  1334.5 10168.4  1336.7 10182.3
GR1340.4 10200.1  1341.9 10217.0  1342.6 10228.3  1342.8 10236.1  1343.2 10241.0
GR1343.7 10249.4  1343.6 10263.3
X1 2.774      50  9939.8 10034.4     183     167     174
X3                        9838  1340.410205.49 1339.41
GR1343.4  9720.9  1342.4  9741.6  1341.5  9759.7  1340.7  9774.1  1340.3  9786.5
GR1340.0  9795.7  1339.3  9800.3  1339.1  9806.5  1338.7  9812.3  1339.2  9819.8
GR1339.8  9830.1  1340.4  9838.0  1339.6  9846.9  1338.4  9856.7  1337.5  9865.4
GR1337.2  9874.2  1336.7  9885.4  1334.4  9898.9  1332.6  9911.7  1331.9  9923.9
GR1331.2  9939.8  1330.6  9951.6  1330.4  9964.2  1330.1  9976.6  1329.6  9987.9
GR1329.1  9996.1  1328.8 10000.0  1328.7 10006.2  1329.1 10014.8  1330.2 10024.7
GR1331.1 10034.4  1332.6 10048.0  1333.8 10064.4  1334.5 10074.0  1334.8 10085.0
GR1334.7 10094.2  1334.4 10104.2  1334.7 10114.5  1335.6 10125.3  1336.1 10137.4
GR1336.4 10149.5  1336.7 10167.8  1336.5 10179.4  1336.7 10187.3  1337.7 10195.0
GR1339.1 10200.2  1339.4 10205.5  1340.6 10214.0  1342.3 10223.6  1343.5 10230.8
X1 2.825      34  9923.8 10034.2     270     270     270
GR1349.7  9750.0  1349.4  9753.2  1344.9  9766.6  1344.8  9773.1  1343.4  9781.1
GR1340.6  9797.6  1337.3  9813.2  1336.8  9822.5  1337.0  9837.9  1337.3  9859.2
GR1336.5  9877.4  1335.3  9900.1  1333.4  9923.8  1332.6  9945.3  1331.8  9964.7
GR1330.5  9983.4  1330.3  9994.2  1329.9 10000.0  1329.7 10007.6  1330.8 10019.8
GR1333.3 10034.2  1335.3 10047.0  1337.0 10060.3  1337.5 10077.3  1337.7 10100.4
GR1338.1 10128.2  1339.0 10160.5  1339.1 10179.7  1339.3 10191.2  1340.0 10199.7
GR1340.7 10207.0  1341.5 10211.2  1341.5 10220.1  1343.5 10236.8
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X1 2.876      45    9974 10025.0     300     205     267
GR1350.8  9742.5  1350.8  9749.5  1342.6  9771.4  1342.4  9778.4  1341.0  9785.2
GR1340.1  9796.8  1338.9  9813.6  1338.7  9831.2  1338.1  9853.6  1337.2  9888.3
GR1337.2  9905.1  1337.2  9920.7  1337.2  9934.2  1336.5  9944.0  1334.8  9957.1
GR1331.7  9974.0  1331.2  9983.5  1330.7  9991.6  1330.7 10000.0  1330.6 10000.2
GR1330.6 10004.7  1330.7 10010.9  1331.4 10017.5  1332.8 10025.0  1333.5 10033.4
GR1334.7 10044.5  1335.0 10053.6  1335.3 10066.4  1335.5 10080.5  1335.6 10089.8
GR1336.3 10102.7  1336.7 10111.1  1337.3 10119.9  1337.4 10128.3  1337.5 10142.7
GR1337.6 10152.0  1337.6 10167.0  1338.9 10175.5  1340.2 10183.8  1341.2 10197.1
GR1341.3 10205.5  1342.1 10210.3  1343.4 10214.8  1343.8 10220.5  1344.7 10226.3
X1 2.919      38  9979.5 10041.2     245     218     230
GR1350.9  9719.0  1351.0  9742.6  1344.5  9758.4  1343.4  9765.0  1343.4  9771.4
GR1341.8  9779.8  1340.0  9787.3  1338.1  9927.7  1338.0  9937.0  1336.8  9940.4
GR1336.0  9951.3  1334.5  9965.4  1334.0  9970.0  1332.5  9979.5  1331.4  9988.4
GR1330.5  9994.7  1331.2 10000.0  1331.2 10014.3  1333.9 10041.2  1335.3 10051.3
GR1336.0 10055.9  1336.0 10062.9  1336.0 10071.4  1335.0 10079.0  1334.0 10086.2
GR1333.7 10089.8  1334.4 10094.4  1335.0 10101.8  1336.1 10112.8  1336.2 10121.3
GR1336.7 10127.2  1338.4 10131.1  1338.5 10142.2  1339.7 10151.0  1343.3 10165.9
GR1344.7 10174.1  1345.1 10194.5  1345.4 10240.9
X1 2.960      43    9970 10019.5     205     213     212
GR1351.1  9765.1  1351.0  9769.3  1342.0  9792.5  1342.2  9798.5  1341.0  9806.5
GR1340.4  9814.7  1338.9  9825.8  1337.2  9837.8  1336.5  9847.1  1335.2  9857.2
GR1334.7  9870.5  1334.2  9884.8  1334.4  9896.3  1334.7  9905.8  1335.4  9915.5
GR1335.1  9926.7  1335.6  9936.4  1335.7  9944.3  1334.9  9956.0  1333.1  9970.0
GR1333.4  9982.4  1333.1  9998.1  1332.5 10000.0  1332.6 10007.7  1332.5 10016.1
GR1332.4 10019.5  1334.8 10029.2  1340.1 10068.5  1341.9 10081.3  1343.6 10107.3
GR1343.6 10123.4  1343.8 10142.2  1343.9 10154.2  1343.0 10161.5  1342.3 10167.4
GR1342.4 10173.5  1342.4 10180.7  1341.8 10185.5  1341.9 10203.6  1342.9 10226.2
GR1343.3 10237.3  1343.3 10245.0  1343.5 10246.5
X1 3.021      61  9930.3 10032.9     265     350     325
GR1348.3  9718.5  1347.3  9731.9  1345.4  9746.3  1344.5  9757.6  1343.4  9769.0
GR1341.3  9778.1  1340.4  9788.4  1340.2  9803.1  1339.7  9812.5  1339.1  9819.4
GR1338.8  9821.0  1338.8  9825.7  1337.9  9829.3  1338.0  9841.8  1337.6  9859.2
GR1337.2  9872.1  1337.2  9886.7  1336.4  9899.7  1333.7  9919.5  1332.8  9930.3
GR1332.3  9944.8  1331.7  9956.1  1331.7  9973.9  1332.0  9982.3  1331.7  9991.1
GR1331.7  9998.3  1332.1 10000.0  1332.2 10012.2  1332.7 10023.2  1332.7 10032.9
GR1333.2 10039.7  1334.0 10046.4  1335.2 10053.4  1335.6 10060.8  1335.8 10069.0
GR1335.9 10080.2  1335.8 10088.2  1335.1 10096.0  1335.1 10102.0  1335.2 10109.6
GR1335.3 10117.1  1335.7 10126.9  1336.2 10138.7  1336.6 10151.9  1337.0 10162.7
GR1338.6 10178.9  1339.1 10190.2  1339.1 10196.7  1339.1 10204.7  1339.1 10212.5
GR1339.2 10220.2  1339.6 10225.1  1339.7 10238.6  1340.0 10241.3  1340.1 10246.6
GR1340.6 10251.3  1341.0 10257.7  1341.8 10269.9  1342.8 10279.1  1343.5 10288.6
GR1343.7 10294.8
X1 3.076      35  9957.5 10079.5     268     257     290
GR1346.6  9843.6  1345.3  9853.7  1344.3  9866.2  1343.0  9880.4  1340.3  9905.9
GR1336.1  9930.5  1335.7  9942.7  1333.2  9957.5  1331.4  9971.8  1330.2  9982.6
GR1329.8  9996.5  1330.1 10000.0  1330.5 10008.0  1332.6 10019.1  1332.7 10032.6
GR1331.7 10039.6  1331.5 10043.5  1332.3 10050.0  1332.8 10062.9  1333.4 10071.7
GR1333.9 10079.5  1333.5 10089.5  1333.3 10098.1  1333.3 10111.7  1333.1 10123.7
GR1333.6 10136.9  1334.8 10157.1  1335.9 10168.1  1337.0 10176.2  1343.8 10202.7
GR1344.0 10208.0  1344.3 10219.3  1343.5 10220.1  1343.5 10228.1  1344.0 10234.2
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X1 3.134      34  9958.5 10049.5     344     260     305
GR1346.7  9679.6  1345.8  9695.5  1344.9  9714.7  1344.0  9737.3  1343.1  9756.5
GR1341.8  9767.5  1341.1  9777.3  1339.0  9790.4  1338.8  9802.0  1337.8  9805.4
GR1337.0  9810.7  1336.4  9816.8  1336.2  9833.2  1335.8  9882.3  1335.2  9890.4
GR1334.7  9897.8  1333.8  9907.3  1332.4  9914.3  1331.8  9921.9  1330.3  9929.4
GR1329.2  9934.9  1328.7  9945.2  1327.8  9955.3  1326.9  9958.5  1327.3 10000.0
GR1327.3 10049.5  1327.9 10054.0  1328.7 10059.2  1331.5 10077.1  1333.9 10097.5
GR1335.6 10113.4  1339.2 10138.6  1341.5 10153.6  1342.4 10160.1
X1 3.165      26  9974.8 10030.3     204     120     167
GR1345.5  9805.6  1344.2  9832.6  1343.9  9846.4  1343.1  9856.2  1341.9  9864.9
GR1340.6  9874.7  1340.6  9881.9  1339.5  9886.3  1337.0  9910.1  1335.1  9929.5
GR1331.8  9946.6  1329.5  9959.8  1328.3  9965.7  1327.8  9971.6  1327.0  9974.8
GR1327.4 10000.0  1327.4 10030.3  1328.3 10034.7  1328.9 10040.8  1329.2 10045.7
GR1330.0 10057.7  1332.3 10074.3  1335.9 10094.2  1339.8 10114.4  1340.8 10121.6
GR1341.7 10130.1
X1 3.192      36  9981.8 10047.2      65     181     143
GR1345.3  9876.1  1345.2  9901.7  1338.9  9931.8  1338.7  9939.6  1334.8  9958.3
GR1332.2  9981.8  1331.3  9992.4  1331.1  9995.9  1330.7  9997.2  1330.5 10000.0
GR1330.6 10003.2  1331.6 10006.8  1331.7 10012.6  1332.6 10047.2  1332.9 10060.5
GR1334.0 10074.1  1335.6 10083.9  1338.6 10099.3  1340.4 10111.0  1340.9 10118.5
GR1341.3 10130.6  1341.1 10145.5  1341.5 10162.0  1341.5 10166.6  1341.0 10167.1
GR1341.8 10200.1  1342.2 10202.0  1342.4 10207.3  1343.5 10210.8  1343.5 10213.6
GR1342.6 10217.1  1342.2 10223.3  1342.3 10235.7  1342.6 10249.6  1343.0 10261.9
GR1343.1 10273.9
X1 3.233      20  9975.2 10029.1     198     231     215
GR1342.7  9741.8  1342.5  9785.3  1341.6  9852.0  1341.0  9875.5  1340.2  9896.0
GR1339.3  9918.5  1336.4  9948.6  1334.2  9975.2  1333.8  9999.5  1333.6 10000.0
GR1334.0 10007.6  1334.2 10017.6  1334.4 10024.9  1334.3 10029.1  1335.3 10037.8
GR1336.3 10052.9  1337.2 10061.5  1339.0 10071.9  1340.5 10081.1  1340.6 10086.9
X1 3.275      15  9966.6 10030.5     255     210     223
GR1344.6  9909.9  1344.2  9919.8  1329.7  9966.6  1329.8  9974.6  1329.5  9987.8
GR1328.9  9999.0  1328.7 10000.0  1328.8 10012.8  1329.0 10021.7  1329.1 10030.5
GR1334.9 10052.8  1340.6 10088.0  1343.1 10108.9  1343.2 10112.9  1343.6 10130.6
X1 3.315      17  9957.9 10034.6     210     205     207
GR1341.1  9913.4  1341.1  9931.8  1331.0  9957.9  1330.5  9973.8  1330.2  9984.9
GR1330.3  9994.9  1330.4 10000.0  1330.4 10010.6  1330.4 10019.4  1330.3 10027.7
GR1330.3 10034.6  1331.3 10042.0  1341.0 10073.3  1342.1 10080.6  1342.5 10085.6
GR1342.7 10090.0  1342.8 10094.4
X1 3.353      14  9968.5 10052.1     197     205     202
GR1344.6  9913.8  1343.1  9920.5  1330.7  9968.5  1330.6  9979.7  1330.3  9997.4
GR1330.3 10000.0  1330.3 10017.2  1330.6 10033.5  1330.8 10045.0  1330.8 10052.1
GR1342.7 10094.4  1342.9 10102.3  1343.1 10109.1  1343.3 10128.1
X1 3.413      18  9953.7   10040     315     313     316
X3                                      10111.5  1343.6
GR1343.4  9833.6  1343.4  9852.3  1343.3  9869.3  1343.2  9879.4  1342.9  9883.3
GR1341.3  9891.6  1341.4  9910.5  1339.5  9915.3  1339.5  9930.4  1331.4  9953.7
GR1331.4 10000.0  1331.2 10000.2  1331.4 10032.1  1331.6 10040.0  1341.1 10072.2
GR1341.1 10081.0  1343.2 10099.5  1343.6 10111.5
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X1 3.454      12  9960.2 10036.5     218     217     217
GR1341.8  9914.4  1341.6  9924.7  1341.7  9935.1  1341.7  9939.0  1331.2  9960.2
GR1331.4 10000.0  1331.4 10020.0  1331.5 10036.5  1339.8 10056.8  1341.1 10063.7
GR1341.5 10071.1  1342.4 10074.2
X1 3.484      13  9983.5 10018.0     135     193     158
GR1342.0  9957.0  1340.0  9974.0  1338.0  9975.0  1336.0  9978.0  1334.0  9983.0
GR1332.0  9983.5  1331.3 10000.0  1332.0 10018.0  1334.0 10022.0  1336.0 10025.0
GR1338.0 10030.0  1340.0 10032.0  1342.0 10047.0
EJ
ER
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1*******************************************
 *  HEC-2 WATER SURFACE PROFILES           *
 *                                         *
 *  Version   4.6.0;  February 1991        *
 *                                         *
 *  RUN DATE    12JUL91    TIME   10:45:07 *
 *******************************************
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*********************************
*  U.S. ARMY CORPS OF ENGINEERS *
*  HYDROLOGIC ENGINEERING CENTER*
*  609 SECOND STREET, SUITE D   *
*  DAVIS, CALIFORNIA 95616-4687 *
*          (916) 756-1104       *
*********************************
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X     X  XXXXXXX   XXXXX             XXXXX
X     X  X        X     X           X     X
X     X  X        X                       X
XXXXXXX  XXXX     X         XXXXX    XXXXX
X     X  X        X                 X
X     X  X        X     X           X
X     X  XXXXXXX   XXXXX            XXXXXXX
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1
   12JUL91      10:45:07                                                                    PAGE    1
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                                                                THIS RUN EXECUTED 12JUL91    10:45:07
 *************************************
  HEC-2 WATER SURFACE PROFILES

  Version   4.6.0;  February 1991
 *************************************


T2      FLOOD HAZARD DETERMINEATION        7/91
T3         EMF--FLOODWAY

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

     -10        2                                                          1331.43

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      1                 -1


J3  VARIABLE CODES FOR SUMMARY PRINTOUT
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   12JUL91      10:45:07

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

*PROF 1

CCHV=     .300 CEHV=     .500
*SECNO  .000
      .000      8.93   1331.43       .00   1331.43   1332.11       .68       .00       .00   1322.50
    4900.0     263.8    4419.2     217.1      76.9     640.3      73.2        .0        .0   1323.30
       .00      3.43      6.90      2.97      .040      .030      .040      .000   1322.50   9944.95
   .001113        0.        0.        0.         0         0         0       .00    111.04  10056.00

*SECNO  .011
      .011      8.70   1331.50       .00       .00   1332.18       .68       .07       .00   1322.80
    4900.0     279.7    3870.4     749.9      78.8     542.5     171.6       1.1        .1   1322.90
       .00      3.55      7.13      4.37      .040      .030      .040      .000   1322.80   9944.13
   .001170       62.       58.       57.         0         0         0       .00    111.39  10055.52

*SECNO  .019

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.42

3470 ENCROACHMENT STATIONS=     9944.5   10058.0  TYPE=      1  TARGET=      113.500
 ELENCL=   1335.59  ELENCR=   1335.59

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1330.60 ELREA=      1335.59

      .019      9.21   1331.81       .00       .00   1332.28       .47       .03       .06   1330.60
    4900.0        .0    4900.0        .0        .0     893.0        .0       1.8        .2   1335.59
       .00       .00      5.49       .00      .000      .025      .000      .000   1322.60   9944.50
   .000581       49.       40.       22.         2         0         0       .00    113.50  10058.00

GUADALUPE ROAD BRIDGE
SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
      .95      1.56      2.60       .00     78.00      8.00   1048.30      2.30   1322.50   1322.50

*SECNO  .029
CLASS A LOW FLOW

   12JUL91      10:45:07

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST
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3420 BRIDGE W.S.=    1331.72 BRIDGE VELOCITY=       5.83     CALCULATED CHANNEL AREA=       841.

 EGPRS      EGLWC       H3       QWEIR      QLOW      BAREA   TRAPEZOID      ELLC     ELTRD     WEIRLN
                                                                 AREA
       .00   1332.32      .06        0.     4900.     1048.     1048.     1333.50   1336.70        0.

3470 ENCROACHMENT STATIONS=     9944.5   10058.0  TYPE=      1  TARGET=      113.500
 ELENCL=   1335.59  ELENCR=   1335.59

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1330.30 ELREA=      1335.59

        GUADALUPE ROAD BRIDGE
      .029      9.37   1331.87       .00       .00   1332.32       .45       .05       .00   1330.30
    4900.0        .0    4900.0        .0        .0     905.8        .0      3.0        .4   1335.59
      .01       .00      5.41       .00      .000      .025      .000      .000   1322.50   9944.50
   .000557       57.       57.       57.         0         0         0       .00    113.50  10058.00

CCHV=     .100 CEHV=     .300
*SECNO  .036

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .48

      .036      6.95   1331.45       .00       .00   1332.55      1.10       .03       .19   1324.90
    4900.0     153.9    4322.7     423.4      40.6     489.6      90.2       3.6        .5   1324.90
      .01      3.79      8.83      4.69      .040      .030      .040      .000   1324.50   9948.03
   .002447       25.       33.       42.         2         0         0       .00    108.08  10056.11

*SECNO  .040

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.07

      .040      8.84   1332.34       .00       .00   1332.66       .31       .03       .08   1324.80
    4900.0     467.9    4047.4     384.7     178.1     844.8     134.2       4.1        .6   1324.00
      .01      2.63      4.79      2.87      .040      .030      .040      .000   1323.50   9887.09
   .000570       30.       25.       25.         3         0         0       .00    170.47  10057.56

  12JUL91      10:45:07

   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST
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*SECNO  .075

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  3.30

      .075    14.35   1332.65      .00      .00   1332.71      .06      .02      .03   1318.30
    4900.0    603.4    3741.4    555.2    518.4    1772.1    489.0     12.4      1.5   1319.10
       .04     1.16      2.11     1.14     .040      .030     .040     .000  1318.30   9862.03
   .000052     195.      184.     178.        2         0        0      .00   261.08  10123.11

*SECNO  .093
      .093    14.28   1332.68      .00      .00   1332.71      .03      .00      .00   1318.50
    4900.0    709.2    3773.4    417.5    745.4    2323.5    481.0     21.8      2.5   1318.60
       .06      .95      1.62      .87     .040      .030     .040     .000  1318.40   9828.85
   .000031     202.       92.     188.        2         0        0      .00   326.41  10155.26

*SECNO  .131

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

      .131    15.30   1332.70      .00      .00   1332.72      .02      .00      .00   1319.00
    4900.0    452.2    4175.7    272.2    699.0    3620.3    439.1     41.1      4.1   1318.20
       .11      .65      1.15      .62     .040      .030     .040     .000  1317.40   9795.14
   .000015     165.      205.     245.        1         0        0      .00   391.18  10186.31

*SECNO  .175
      .175    14.30   1332.70      .00      .00   1332.72      .02      .00      .00   1318.40
    4900.0   1251.6    3283.2    365.1   1482.6    2360.2    473.7     64.8      6.2   1318.50
       .16      .84      1.39      .77     .040      .030     .040     .000  1318.40   9726.68
   .000023     218.      230.     229.        0         0        0      .00   397.52  10124.20

*SECNO  .194
      .194    14.10   1332.70      .00      .00   1332.73      .03      .00      .00   1318.70
    4900.0   2027.8    2354.3    517.9   1924.5    1498.1    560.6     74.1      7.0   1318.60
       .19     1.05      1.57      .92     .040      .030     .040     .000  1318.60   9770.72
   .000030     110.       98.      61.        0         0        0      .00   356.57  10127.29

*SECNO  .228
      .228    14.30   1332.70      .00      .00   1332.73      .03      .01      .00   1318.40
    4900.0    772.3    3707.9    419.8    821.9    2364.7    506.5     89.9      8.5   1318.50
       .22      .94      1.57      .83     .040      .030     .040     .000  1318.40   9827.08
   .000029     162.      179.     227.        0         0        0      .00   336.75  10163.83

  12JUL91      10:45:07

   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST
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*SECNO  .254
      .254     11.70   1332.70      .00      .00   1332.74      .04      .00      .00   1321.00
    4900.0     287.6    4201.0    411.5    310.0    2575.5    424.3    101.2      9.5   1321.00
      .25       .93      1.63      .97     .040      .030     .040     .000  1321.00   9853.23
   .000041      133.      142.     135.        0         0        0      .00   330.53  10183.77

*SECNO  .287

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .34

      .287      8.78   1332.58      .00      .00   1332.81      .23      .02      .06   1323.80
    4900.0     376.2    4461.0     62.8    173.4    1117.2     46.3    110.2     10.5   1323.80
      .26      2.17      3.99     1.36     .040      .030     .040     .000  1323.80   9888.89
   .000359      175.      170.     158.        2         0        0      .00   180.29  10069.18

*SECNO  .325

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

      .325      9.07   1332.77      .00      .00   1332.88      .11      .05      .01   1323.70
    4900.0     209.5    3999.0    691.5    139.5    1390.8    447.8    118.0     11.6   1323.90
      .28      1.50      2.88     1.54     .040      .030     .040     .000  1323.70   9890.58
   .000181      211.      204.     200.        2         0        0      .00   287.21  10177.79

*SECNO  .363
      .363      9.26   1332.76      .00      .00   1332.95      .19      .05      .02   1323.60
    4900.0     435.8    3178.6   1285.5    201.7     778.7    677.1    126.1     12.9   1324.20
      .30      2.16      4.08     1.90     .040      .030     .040     .000  1323.50   9916.49
   .000356      212.      199.     181.        2         0        0      .00   312.18  10228.67

*SECNO  .402
      .402      9.08   1332.88      .00      .00   1333.02      .14      .07      .00   1323.90
    4900.0    2714.2    1784.8    401.0   1302.7     430.8    170.8    133.7     14.3   1323.80
      .32      2.08      4.14     2.35     .040      .030     .040     .000  1323.80   9970.56
   .000372      162.      208.     195.        2         0        0      .00   360.53  10331.09

1490 NH CARD USED

   12JUL91      10:45:07

    SECNO     DEPTH     CWSEL     CRIWS     WSELK        EG        HV        HL     OLOSS   L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA     R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN   SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID  ENDST
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*SECNO  .441

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.20

3470 ENCROACHMENT STATIONS=        .0   10311.4  TYPE=      1  TARGET=    10311.400
      .441      9.32   1333.02      .00      .00   1333.06      .05      .03      .01   1323.80
    4900.0     173.8    4515.1    211.1    176.2    2564.3    196.7    145.2     16.1   1323.80
       .35       .99      1.76     1.07     .040      .031     .040     .000   1323.70   9895.06
   .000077      210.      205.     225.        2         0        0      .00    391.79  10286.85

*SECNO  .496

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .58

      .496      7.91   1333.01      .00      .00   1333.11      .10      .04      .02   1326.60
    4900.0     141.9    4616.8    141.3    102.1    1773.2    105.1    161.7     18.6   1326.80
       .38      1.39      2.60     1.34     .040      .030     .040     .000   1325.10   9811.98
   .000224      242.      294.     300.        2         0        0      .00    335.69  10147.67

*SECNO  .514

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .46

      .514      7.71   1332.91      .00      .00   1333.29      .39      .09      .09   1325.30
    4900.0     906.1    2250.4   1743.5    248.9     361.5    483.9    169.6     19.9   1325.80
       .39      3.64      6.23     3.60     .040      .030     .040     .000   1325.20   9918.13
   .001062      220.      233.     190.        2         0        0      .00    215.50  10133.63

*SECNO  .580

3265 DIVIDED FLOW

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

      .580      7.63   1333.03      .00      .00   1333.67      .64      .30      .08   1326.70
    4900.0     558.9    1893.4   2447.6    118.8     212.6    609.8    174.2     21.0   1326.30
       .40      4.70      8.90     4.01     .040      .030     .040     .000   1325.40   9952.98
   .002322      200.      210.     190.        0         0        0      .00    273.18  10227.70

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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST
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*SECNO  .616

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.77

      .616      9.21   1333.71       .00       .00   1333.94       .23       .23       .04   1325.70
    4900.0     365.7    1424.6    3109.7     123.8     260.9    1034.0     179.2      22.2   1326.90
       .42      2.95      5.46      3.01      .040      .030      .040      .000   1324.50   9959.04
   .000745      191.      189.      183.         2         0         0       .00    274.21  10233.25

*SECNO  .639
      .639      8.97   1333.87       .00       .00   1334.01       .14       .06       .01   1325.90
    4900.0     302.1    1074.0    3523.9     137.2     259.0    1368.5     183.5      23.0   1325.20
       .43      2.20      4.15      2.57      .040      .030      .040      .000   1324.90   9947.69
   .000393      125.      112.      120.         1         0         0       .00    294.24  10241.93

*SECNO  .678
      .678      8.33   1333.93       .00       .00   1334.12       .19       .10       .02   1327.90
    4900.0     139.6    1833.7    2926.8      72.1     414.0    1050.9     191.4      24.3   1327.70
       .45      1.94      4.43      2.78      .040      .030      .040      .000   1325.60   9945.80
   .000554      179.      207.      209.         2         0         0       .00    281.25  10227.05

*SECNO  .718

3470 ENCROACHMENT STATIONS=          .0   10220.6  TYPE=      1  TARGET=    10220.600
      .718      9.37   1334.07       .00       .00   1334.23       .16       .10       .00   1325.70
    4900.0     482.8    1467.9    2949.3     216.8     344.0    1127.2     199.4      25.7   1325.70
       .47      2.23      4.27      2.62      .040      .030      .040      .000   1324.70   9928.65
   .000395      210.      210.      220.         2         0         0       .00    281.88  10210.52

*SECNO  .762
      .762      9.64   1334.04       .00       .00   1334.41       .37       .12       .06   1325.50
    4900.0     772.5    2876.5    1251.0     237.9     498.5     395.5     206.8      27.0   1325.00
       .48      3.25      5.77      3.16      .040      .030      .040      .000   1324.40   9922.08
   .000712      210.      231.      235.         2         0         0       .00    198.20  10120.28

*SECNO  .830

  12JUL91      10:45:07

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

3265 DIVIDED FLOW

      .830      8.70   1334.30       .00       .00   1334.69       .39       .27       .01   1326.90
    4900.0    1339.0    3014.2     546.9     516.2     502.4     173.2     216.0      28.9   1326.40
       .50      2.59      6.00      3.16      .040      .030      .040      .000   1325.60   9766.59
   .000868      385.      352.      270.         2         0         0       .00    294.55  10074.10
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*SECNO  .871

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.92

      .871     10.11   1334.71      .00      .00   1334.80      .09      .09      .03   1326.80
    4900.0    2125.7    1823.2    951.1   1210.4     547.3    561.9    224.8     30.8   1327.20
      .52      1.76      3.33     1.69     .040      .030     .040     .000   1324.60   9713.17
   .000234      233.      218.     185.        2         0        0      .00    449.33  10162.50

*SECNO  .907
      .907     8.66   1334.76      .00      .00   1334.85      .09      .05      .00   1328.60
    4900.0   1546.4    1524.1   1829.5    819.5     466.2    905.3    234.9     32.8   1328.70
      .55      1.89      3.27     2.02     .040      .030     .040     .000   1326.10   9788.08
   .000301      200.      190.     192.        2         0        0      .00    428.84  10216.92

*SECNO  .957

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

      .957     9.35   1334.85      .00      .00   1334.89      .04      .03      .01   1325.50
    4900.0    231.4    3805.9    862.7    259.6    2139.4    871.1    251.2     35.5   1326.00
      .59      .89      1.78      .99     .040      .030     .040     .000   1325.50   9795.59
   .000067      250.      265.     260.        1         0        0      .00    488.78  10284.37

*SECNO  .997
      .997     9.16   1334.86      .00      .00   1334.91      .05      .02      .00   1325.70
    4900.0    229.8    3680.1    990.1    217.4    1853.6    869.2    265.7     37.7   1325.90
      .63      1.06      1.99     1.14     .040      .030     .040     .000   1325.70   9853.73
   .000084      250.      210.     177.        2         0        0      .00    443.11  10296.84

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

*SECNO 1.031
     1.031     8.97   1334.87      .00      .00   1334.93      .07      .02      .00   1325.90
    4900.0    410.1    3252.2   1237.7    293.9    1378.9   1005.0    277.4     39.6   1326.20
      .65      1.40      2.36     1.23     .040      .030     .040     .000   1325.90   9847.46
   .000123      230.      180.     167.        0         0        0      .00    452.70  10300.16
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1490 NH CARD USED
*SECNO 1.067

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.55

     1.067      8.83   1334.93       .00       .00   1334.95       .02       .01       .00   1326.10
    4900.0    1840.3    2894.7     165.1    1714.1    2258.8     214.2     291.1      41.8   1326.30
       .69      1.07      1.28       .77      .033      .031      .040      .000   1326.10   9583.12
   .000051      112.      199.      205.         2         0         0       .00    725.91  10309.03

1490 NH CARD USED
*SECNO 1.099

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

     1.099      8.72   1334.92       .00       .00   1334.97       .05       .01       .01   1326.50
    4900.0     525.3    4175.0     199.6     498.0    2199.7     165.4     303.8      44.1   1326.30
       .72      1.05      1.90      1.21      .040      .027      .040      .000   1326.20   9780.86
   .000119      144.      165.      143.         2         0         0       .00    568.47  10349.33

*SECNO 1.112
     1.112      8.42   1334.92       .00       .00   1334.99       .08       .01       .01   1326.70
    4900.0     247.8    4451.2     201.0     251.6    1949.3     158.9     310.9      45.4   1326.50
       .73       .98      2.28      1.26      .040      .030      .040      .000   1326.50   9868.45
   .000126      100.      119.      154.         1         0         0       .00    358.16  10226.61

CCHV=     .300 CEHV=     .500
*SECNO 1.145

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .33

     1.145      8.33   1334.73       .00       .00   1335.25       .52       .03       .22   1326.90
    4900.0     657.3    3196.0    1046.8     206.6     475.5     306.3     315.5      46.2   1326.40
       .74      3.18      6.72      3.42      .040      .030      .040      .000   1326.40   9891.91
   .001126      101.      125.      113.         2         0         0       .00    226.14  10118.05

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    SECNO     DEPTH     CWSEL     CRIWS     WSELK        EG        HV        HL     OLOSS   L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB       ACH      AROB       VOL       TWA   R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL        XNCH     XNR       WTN       ELMIN   SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL     IDC      ICONT     CORAR     TOPWID  ENDST
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*SECNO 1.165

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

3470 ENCROACHMENT STATIONS=     9907.4   10090.1  TYPE=      1  TARGET=      182.659
 ELENCL=   1338.00  ELENCR=   1338.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1337.99 ELREA=      1338.00

     1.165      8.57   1335.20       .00       .00   1335.40       .20       .05       .10   1337.99
    4900.0        .0    4900.0        .0        .0    1378.8        .0     318.5      46.7   1338.00
       .75       .00      3.55       .00      .000      .025      .000      .000   1326.63   9908.99
   .000247       67.      109.      137.         2         0         0       .00    181.03  10090.03

BASELINE ROAD BRIDGE
SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
      .95      1.56      2.60       .00    159.50     20.00   1716.00      1.75   1326.97   1326.63

*SECNO 1.182
CLASS A LOW FLOW

3420 BRIDGE W.S.=    1335.32 BRIDGE VELOCITY=       3.72     CALCULATED CHANNEL AREA=      1287.

 EGPRS      EGLWC       H3       QWEIR      QLOW      BAREA   TRAPEZOID      ELLC      ELTRD     WEIRLN
                                                                  AREA
       .00   1335.42      .03        0.     4900.     1716.     1716.     1337.80   1340.80        0.

3470 ENCROACHMENT STATIONS=     9907.4   10090.1  TYPE=      1  TARGET=      182.659
 ELENCL=   1338.00  ELENCR=   1338.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1337.80 ELREA=      1338.00

        BASELINE ROAD BRIDGE
     1.182      8.29   1335.22       .00       .00   1335.42       .20       .02       .00   1337.80
    4900.0        .0    4900.0        .0        .0    1379.8        .0     321.4      47.0   1338.00
       .75       .00      3.55       .00      .000      .025      .000      .000   1326.93   9909.43
   .000247       90.       90.       90.         0         0         0       .00    180.60  10090.03

   12JUL91      10:45:07

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST
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CCHV=     .100 CEHV=     .300
*SECNO 1.203
     1.203      7.84   1335.34       .00       .00   1335.46       .12       .03       .01   1328.10
    4900.0    1091.2    2925.3     883.6     662.4     898.6     461.7     325.6      47.8   1328.20
       .77      1.65      3.26      1.91      .040      .030      .040      .000   1327.50   9722.92
   .000293       91.       110.      120.         2         0         0       .00    423.07  10145.98

*SECNO 1.251
     1.251      8.93   1335.33       .00       .00   1335.60       .26       .10       .04   1328.00
    4800.0     354.7    3304.2    1141.1     151.0     709.2     452.6     335.2      49.8   1327.50
       .78      2.35      4.66      2.52      .040      .030      .040      .000   1326.40   9915.62
   .000510      250.       250.      258.         2         0         0       .00    262.51  10178.12

*SECNO 1.295
     1.295      9.08   1335.38       .00       .00   1335.79       .42       .15       .05   1330.50
    4800.0     369.6    3604.9     825.5     155.3     619.8     340.4     341.6      51.1   1328.70
       .80      2.38      5.82      2.42      .040      .030      .040      .000   1326.30   9907.65
   .000860      190.       235.      235.         2         0         0       .00    264.74  10172.38

*SECNO 1.356

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.71

     1.356      9.13   1335.73       .00       .00   1335.89       .16       .08       .03   1327.60
    4800.0     529.7    3505.6     764.7     264.1     970.6     384.8     346.6      52.1   1327.30
       .81      2.01      3.61      1.99      .040      .030      .040      .000   1326.60   9898.31
   .000294      188.       161.      142.         2         0         0       .00    268.53  10166.84

*SECNO 1.366
     1.366      9.26   1335.76       .00       .00   1336.01       .25       .09       .03   1327.80
    4800.0     535.9    2370.0    1894.1     251.1     467.8     711.3     354.3      53.6   1328.30
       .83      2.13      5.07      2.66      .040      .030      .040      .000   1326.50   9889.62
   .000597      210.       215.      232.         2         0         0       .00    300.41  10190.03

*SECNO 1.408
     1.408     10.05   1335.95       .00       .00   1336.14       .19       .12       .01   1328.60
    4800.0     585.6    1160.2    3054.3     227.9     233.0    1069.6     361.6      55.0   1327.50
       .84      2.57      4.98      2.86      .040      .030      .040      .000   1325.90   9929.18
   .000558      200.       221.      212.         2         0         0       .00    299.66  10228.83

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   SECNO     DEPTH     CWSEL     CRIWS     WSELK        EG        HV        HL     OLOSS  L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB       ACH      AROB       VOL       TWA  R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH       XNR       WTN     ELMIN  SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL     IDC      ICONT     CORAR    TOPWID  ENDST
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*SECNO 1.452

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.64

     1.452      9.53   1336.13       .00       .00   1336.23       .10       .09       .01   1328.00
    4800.0     262.9    2580.1    1957.0     205.6     847.7    1054.3     372.9      57.1   1328.00
       .87      1.28      3.04      1.86      .040      .030      .040      .000   1326.60   9864.79
   .000207      245.      229.      299.         2         0         0       .00    364.57  10229.36

*SECNO 1.484

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .67

     1.484      9.09   1336.09       .00       .00   1336.32       .23       .05       .04   1329.10
    4800.0     302.9    3630.3     866.8     131.7     841.7     458.2     379.8      58.4   1328.90
       .89      2.30      4.31      1.89      .040      .030      .040      .000   1327.00   9921.54
   .000461      159.      170.      170.         2         0         0       .00    292.45  10213.98

*SECNO 1.501
     1.501      8.81   1336.11       .00       .00   1336.38       .27       .05       .01   1328.40
    4800.0    1771.5    2361.5     667.0     620.4     447.4     253.6     382.5      58.9   1328.40
       .89      2.86      5.28      2.63      .040      .030      .040      .000   1327.30   9817.35
   .000685       57.       92.      105.         0         0         0       .00    271.85  10089.19

*SECNO 1.543

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.72

3470 ENCROACHMENT STATIONS=          .0   10121.1  TYPE=      1  TARGET=    10121.100
     1.543     10.03   1336.33       .00       .00   1336.47       .15       .08       .01   1326.30
    4800.0     918.6    3365.8     515.5     496.0     965.4     303.3     390.1      60.3   1326.40
       .91      1.85      3.49      1.70      .040      .030      .040      .000   1326.30   9834.53
   .000231      225.      220.      189.         2         0         0       .00    283.04  10117.56

*SECNO 1.585

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.43

   12JUL91      10:45:07

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

3470 ENCROACHMENT STATIONS=     9723.8   10251.9  TYPE=      1  TARGET=    -9723.800
 ELENCL=   1338.20  ELENCR= 100000.00
     1.585      9.95   1336.45       .00       .00   1336.52       .06       .04       .01   1326.50
    4800.0    1421.2    2891.3     487.6    1115.4    1201.1     414.6     402.1      62.2   1326.60
       .95      1.27      2.41      1.18      .040      .030      .040      .000   1326.50   9743.38
   .000113      270.      225.      170.         2         0         0       .00    444.08  10187.46
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*SECNO 1.661

3265 DIVIDED FLOW

     1.661     12.90   1336.50       .00       .00   1336.56       .06       .04       .00   1325.60
    4800.0     573.4    3755.2     471.4     527.3    1817.6     443.0     429.4      65.9   1324.70
      1.01      1.09      2.07      1.06      .040      .030      .040      .000   1323.60   9841.85
   .000062      313.      502.      402.         2         0         0       .00    354.93  10215.81

CCHV=     .300 CEHV=     .500
*SECNO 1.693

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .48

     1.693     12.15   1336.45       .00       .00   1336.64       .19       .02       .07   1326.70
    4800.0     759.1    2955.6    1085.3     379.4     715.3     537.9     438.0      67.1   1327.50
      1.03      2.00      4.13      2.02      .040      .030      .040      .000   1324.30   9892.75
   .000271      180.      169.      165.         2         0         0       .00    238.77  10131.52

*SECNO 1.739

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.49

3470 ENCROACHMENT STATIONS=     9901.8   10147.5  TYPE=      1  TARGET=      245.700
 ELENCL=   1339.00  ELENCR=   1338.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1338.89 ELREA=      1338.00

     1.739     11.72   1336.61       .00       .00   1336.71       .10       .04       .03   1338.89
    4800.0        .0    4800.0        .0        .0    1859.3        .0     447.7      68.4   1338.00
      1.05       .00      2.58       .00      .000      .025      .000      .000   1324.89   9909.60
   .000122      338.      244.      165.         2         0         0       .00    235.02  10144.62

   12JUL91      10:45:07

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

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     .95      1.56      2.60       .00     161.87     16.00    1998.00     3.45    1327.64   1327.40

*SECNO 1.765
CLASS A LOW FLOW

3420 BRIDGE W.S.=    1336.70 BRIDGE VELOCITY=       2.94     CALCULATED CHANNEL AREA=      1606.

 EGPRS      EGLWC       H3       QWEIR      QLOW      BAREA   TRAPEZOID      ELLC     ELTRD     WEIRLN
                                                                 AREA
      .00   1336.72      .01        0.     4800.     1998.     5918.     1353.00   1358.60        0.

3470 ENCROACHMENT STATIONS=     9901.8   10147.3  TYPE=      1  TARGET=      245.500
 ELENCL=   1339.00  ELENCR=   1338.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1339.43 ELREA=      1338.00

         SUPERSTITION ROAD BRIDGE
    1.765     10.45   1336.61       .00       .00   1336.72       .11       .01       .00   1339.43
   4800.0        .0    4800.0        .0        .0    1843.9        .0     453.5      69.1   1338.00
     1.07       .00      2.60       .00      .000      .025      .000      .000   1326.16   9911.81
  .000122      135.      135.      135.         0         0         0       .00    231.19  10143.00

CCHV=     .100 CEHV=     .300
*SECNO 1.784
    1.784      9.54   1336.64       .00       .00   1336.73       .10       .01       .00   1327.10
   4800.0     211.3    4490.1      98.6     151.4    1759.2      92.9     457.8      69.7   1329.20
     1.08      1.40      2.55      1.06      .040      .030      .040      .000   1327.10   9833.25
  .000150       59.      100.      130.         1         0         0       .00    261.36  10094.61

*SECNO 1.822

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

3470 ENCROACHMENT STATIONS=     9905.7   10125.7  TYPE=      1  TARGET=    -9905.700
 ELENCL=   1337.50  ELENCR= 100000.00
    1.822      8.09   1336.59       .00       .00   1336.82       .22       .05       .04   1329.10
   4800.0     292.5    4224.5     283.0     130.6    1068.8     126.0     465.6      70.7   1328.70
     1.09      2.24      3.95      2.25      .040      .030      .040      .000   1328.50   9909.54
  .000403      198.      202.      208.         2         0         0       .00    190.91  10100.45

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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST
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*SECNO 1.858

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .67

     1.858      8.85   1336.55       .00       .00   1337.00       .45       .11       .07   1330.00
    4800.0     566.3    3849.2     384.5     236.6     654.1     136.8     470.8      71.7   1331.40
      1.10      2.39      5.88      2.81      .040      .030      .040      .000   1327.70   9817.79
   .000909      220.      190.      173.         2         0         0       .00    264.95  10082.74

*SECNO 1.907

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  3.02

     1.907      9.74   1337.04       .00       .00   1337.09       .05       .06       .04   1327.30
    4800.0     297.6    2602.7    1899.8     252.1    1157.1    1640.0     481.9      73.9   1327.40
      1.14      1.18      2.25      1.16      .040      .030      .040      .000   1327.30   9591.96
   .000100      255.      259.      210.         2         0         0       .00    527.14  10119.09

*SECNO 1.962
     1.962     10.07   1337.07       .00       .00   1337.14       .06       .04       .00   1328.40
    4800.0    2296.7    1130.0    1373.3    1364.7     371.0     921.3     500.9      77.2   1328.60
      1.19      1.68      3.05      1.49      .040      .030      .040      .000   1327.00   9733.72
   .000191      290.      289.      290.         2         0         0       .00    488.11  10221.84

*SECNO 2.006

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.55

3470 ENCROACHMENT STATIONS=          .0   10219.9  TYPE=      1  TARGET=    10219.900
     2.006     10.81   1337.11       .00       .00   1337.16       .05       .03       .00   1326.30
    4800.0     878.4    3478.7     443.0     784.8    1724.8     399.3     514.4      79.4   1327.90
      1.22      1.12      2.02      1.11      .040      .030      .040      .000   1326.30   9811.09
   .000079      197.      231.      207.         0         0         0       .00    401.08  10212.17

*SECNO 2.049

3470 ENCROACHMENT STATIONS=     9751.9   10127.4  TYPE=      1  TARGET=      375.500
 ELENCL=   1338.00  ELENCR=   1337.70

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

     2.049     10.21   1337.11       .00       .00   1337.20       .09       .02       .01   1326.90
    4800.0    1256.7    3476.3      67.0     903.1    1274.9      82.3     527.6      81.3   1327.10
      1.25      1.39      2.73       .81      .040      .030      .040      .000   1326.90   9758.96
   .000139      185.      228.      310.         2         0         0       .00    354.56  10113.52
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*SECNO 2.089

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

3470 ENCROACHMENT STATIONS=          .0   10074.6  TYPE=      1  TARGET=    10074.600
    2.089      9.70   1337.10       .00       .00   1337.26       .16       .04       .02   1327.50
   4800.0    1876.6    2796.9     126.4     944.3     736.8      74.9     536.8      82.8   1327.60
     1.26      1.99      3.80      1.69      .040      .030      .040      .000   1327.40   9759.95
  .000287      190.      210.      212.         2         0         0       .00    308.65  10068.60

*SECNO 2.129

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

    2.129      8.77   1337.17       .00       .00   1337.35       .18       .09       .01   1329.30
   4800.0    1371.7     938.2    2490.1     517.1     189.2     827.2     545.2      84.5   1329.40
     1.28      2.65      4.96      3.01      .040      .030      .040      .000   1328.40   9833.07
  .000600      220.      211.      235.         2         0         0       .00    336.90  10169.97

*SECNO 2.173
    2.173      9.59   1337.29       .00       .00   1337.50       .22       .14       .01   1332.40
   4800.0      90.3    2698.7    2011.0      49.1     609.7     774.6     553.1      86.1   1332.80
     1.30      1.84      4.43      2.60      .040      .030      .040      .000   1327.70   9933.12
  .000588      174.      235.      252.         1         0         0       .00    280.90  10214.03

*SECNO 2.213
    2.213     10.10   1337.40       .00       .00   1337.64       .23       .13       .01   1332.30
   4800.0      89.7    2159.6    2550.8      48.1     428.2     976.8     560.0      87.5   1331.70
     1.32      1.86      5.04      2.61      .040      .030      .040      .000   1327.30   9941.33
  .000674      220.      208.      210.         0         0         0       .00    307.34  10248.67

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

*SECNO 2.254
    2.254     11.03   1337.43       .00       .00   1337.80       .37       .12       .04   1327.40
   4800.0     484.6    3688.1     627.3     227.6     684.2     262.2     566.3      88.7   1326.40
     1.33      2.13      5.39      2.39      .040      .030      .040      .000   1326.40   9894.75
  .000501      228.      221.      190.         2         0         0       .00    231.16  10125.91
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*SECNO 2.304

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.23

3470 ENCROACHMENT STATIONS=          .0   10138.0  TYPE=      1  TARGET=    10138.000
     2.304     11.00   1337.80      .00       .00   1337.88      .08      .05      .03   1327.10
    4800.0     400.1    4073.8    326.1     319.3    1673.5    257.6    576.4     90.3   1326.80
      1.36      1.25      2.43     1.27      .040      .030     .040     .000   1326.80   9821.94
   .000100      276.      261.     222.         2         0        0      .00    286.67  10108.61

CCHV=     .100 CEHV=     .300
*SECNO 2.340

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .43

     2.340      9.39   1337.79      .00       .00   1337.92      .13      .03      .01   1328.90
    3500.0     527.0    1433.7   1539.3     306.0     393.1    693.5    584.3     91.4   1328.80
      1.38      1.72      3.65     2.22      .040      .030     .040     .000   1328.40   9875.67
   .000283      220.      189.     166.         2         0        0      .00    251.07  10126.74

*SECNO 2.350

3470 ENCROACHMENT STATIONS=     9937.0   10061.5  TYPE=      1  TARGET=      124.500
 ELENCL=   1338.90  ELENCR=   1339.70

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1339.68 ELREA=      1339.70

     2.350      9.32   1337.72      .00       .00   1337.97      .25      .02      .04   1339.68
    3500.0        .0    3500.0       .0        .0     880.3       .0    585.7     91.7   1339.70
      1.38       .00      3.98      .00      .000      .025     .000     .000   1328.40   9941.63
   .000317       68.       56.      50.         2         0        0      .00    117.06  10058.70

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

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.95	1.56	2.60	.00	73.00	9.00	916.00	2.40	1328.58	1328.40

*SECNO 2.370
CLASS A LOW FLOW

3420 BRIDGE W.S.= 1337.76 BRIDGE VELOCITY= 4.38 CALCULATED CHANNEL AREA= 790.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
.00	1337.99	.03	0.	3500.	916.	916.	1338.90	1341.60	0.

3470 ENCROACHMENT STATIONS= 9937.0 10061.5 TYPE= 1 TARGET= 124.500
ELENCL= 1339.70 ELENCR= 1338.90

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1339.30 ELREA= 1339.03

SOUTHERN ROAD BRIDGE

2.370	9.47	1337.75	.00	.00	1337.99	.24	.02	.00	1339.30
3500.0	.0	3500.0	.0	.0	886.0	.0	587.9	92.0	1339.03
1.39	.00	3.95	.00	.000	.025	.000	.000	1328.28	9940.72
.000312	105.	105.	105.	0	0	0	.00	117.74	10058.47

CCHV= .100 CEHV= .300
*SECNO 2.377

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.50

2.377	9.36	1337.96	.00	.00	1338.03	.07	.01	.02	1330.00
3500.0	1382.2	2000.3	117.5	1023.6	814.1	101.9	590.1	92.3	1330.00
1.40	1.35	2.46	1.15	.040	.030	.040	.000	1328.60	9730.55
.000138	60.	73.	108.	2	0	0	.00	336.29	10066.84

1490 NH CARD USED
*SECNO 2.391

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 3.61

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
2.391	11.43	1338.03	.00	.00	1338.03	.01	.00	.01	1326.60
3500.0	2348.5	766.8	384.7	3473.9	936.9	777.7	592.8	92.7	1326.60
1.41	.68	.82	.49	.033	.030	.040	.000	1326.60	9537.64
.000011	28.	36.	53.	2	0	0	.00	595.42	10133.06

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*SECNO 2.440

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .17

     2.440      8.24   1337.94       .00       .00   1338.08       .15       .01       .04   1330.80
    3500.0     638.8    1807.4    1053.7     300.2     477.4     530.0     612.8      95.5   1330.10
      1.44      2.13      3.79      1.99      .040      .030      .040      .000   1329.70   9881.03
   .000383      235.      258.      375.         2         0         0       .00    275.02  10156.05

*SECNO 2.482
     2.482      8.09   1337.99       .00       .00   1338.20       .21       .10       .02   1330.90
    3500.0    1242.2    1753.3     504.4     519.0     383.0     216.0     618.4      96.7   1331.40
      1.46      2.39      4.58      2.34      .040      .030      .040      .000   1329.90   9824.58
   .000584      230.      223.      135.         1         0         0       .00    269.16  10093.75

*SECNO 2.526

3470 ENCROACHMENT STATIONS=     9830.2   10337.7  TYPE=      1  TARGET=    -9830.200
 ELENCL=   1339.10  ELENCR= 100000.00
     2.526      7.49   1338.19       .00       .00   1338.34       .15       .14       .01   1332.60
    3500.0     654.3    1504.5    1341.2     339.0     375.4     589.8     625.2      98.4   1332.80
      1.48      1.93      4.01      2.27      .040      .030      .040      .000   1330.70   9845.77
   .000533      293.      235.      207.         2         0         0       .00    339.18  10184.95

*SECNO 2.572
2.572      6.74   1338.34       .00       .00   1338.47       .13       .13       .00   1334.00
    3500.0     230.0    2238.9    1031.1     128.0     676.0     600.1     633.4     100.6   1334.10
      1.51      1.80      3.31      1.72      .040      .030      .040      .000   1331.60   9882.19
   .000462      227.      241.      298.         1         0         0       .00    375.57  10257.76

*SECNO 2.613
     2.613      6.23   1338.43       .00       .00   1338.61       .18       .12       .02   1333.50
    3500.0     745.4    1812.1     942.5     319.4     427.7     441.3     639.8     102.4   1333.90
      1.52      2.33      4.24      2.14      .040      .030      .040      .000   1332.20   9874.53
   .000738      218.      215.      218.         2         0         0       .00    348.74  10223.27

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

*SECNO 2.654
     2.654      6.41   1338.61       .00       .00   1338.74       .14       .13       .00   1334.30
    3500.0     373.0    2765.2     361.8     226.2     852.7     283.5     646.5     104.6   1334.00
      1.55      1.65      3.24      1.28      .040      .030      .040      .000   1332.20   9806.96
   .000442      203.      220.      258.         2         0         0       .00    445.84  10252.80
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*SECNO 2.702

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  3.64

3470 ENCROACHMENT STATIONS=     9690.5   10246.6  TYPE=      1  TARGET=    -9690.500
 ELENCL=   1339.70  ELENCR= 100000.00
     2.702     12.35   1338.75       .00       .00   1338.77       .02       .02       .01   1326.40
    3500.0    1300.5    1704.1     495.4    1586.1    1122.5     632.6     659.7     106.9   1326.80
      1.60       .82      1.52       .78      .040      .030      .040      .000   1326.40   9713.20
   .000033      278.      250.      171.         0         0         0       .00    432.58  10145.78

*SECNO 2.741

3470 ENCROACHMENT STATIONS=     9841.6   10263.3  TYPE=      1  TARGET=    -9841.600
 ELENCL=   1340.60  ELENCR= 100000.00
     2.741     12.55   1338.75       .00       .00   1338.79       .04       .01       .00   1326.60
    3500.0     604.4    1653.0    1242.6     609.9     821.6    1107.3     674.3     108.8   1326.30
      1.64       .99      2.01      1.12      .040      .030      .040      .000   1326.20   9852.03
   .000057      205.      208.      238.         2         0         0       .00    340.12  10192.15

*SECNO 2.774

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .59

3470 ENCROACHMENT STATIONS=     9838.0   10205.5  TYPE=      1  TARGET=      367.490
 ELENCL=   1340.40  ELENCR=   1339.41
     2.774     10.03   1338.73       .00       .00   1338.82       .08       .02       .01   1331.20
    3500.0     500.0    2262.4     737.6     342.6     831.6     593.7     682.9     110.2   1331.10
      1.67      1.46      2.72      1.24      .040      .030      .040      .000   1328.70   9853.99
   .000167      183.      174.      167.         2         0         0       .00    344.85  10198.83

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

*SECNO 2.825

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .67

     2.825      9.04   1338.74       .00       .00   1338.91       .17       .06       .03   1333.40
    3500.0     411.8    2870.5     217.7     284.5     800.0     173.4     692.2     112.3   1333.30
      1.69      1.45      3.59      1.26      .040      .030      .040      .000   1329.70   9806.40
   .000376      270.      270.      270.         2         0         0       .00    344.68  10151.08
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*SECNO 2.876
     2.876      8.20   1338.80       .00       .00   1339.07       .28       .13       .03   1331.70
    3500.0     563.7    2048.7     887.6     277.2     392.0     398.6     699.2     114.4   1332.80
      1.71      2.03      5.23      2.23      .040      .030      .040      .000   1330.60   9822.25
   .000738      300.      267.      205.         1         0         0       .00    352.60  10174.86

*SECNO 2.919
     2.919      8.46   1338.96       .00       .00   1339.25       .29       .17       .00   1332.50
    3500.0     457.8    2248.2     794.0     197.1     439.2     324.1     704.5     116.1   1333.90
      1.72      2.32      5.12      2.45      .040      .030      .040      .000   1330.50   9864.21
   .000785      245.      230.      218.         2         0         0       .00    281.36  10145.57

*SECNO 2.960
     2.960      6.79   1339.19       .00       .00   1339.43       .25       .18       .00   1333.10
    3500.0    1620.8    1558.1     321.2     561.5     308.8     125.6     709.2     117.3   1332.40
      1.74      2.89      5.05      2.56      .040      .030      .040      .000   1332.40   9823.66
   .000906      205.      212.      213.         2         0         0       .00    238.08  10061.75

*SECNO 3.021

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.89

     3.021      7.78   1339.48       .00       .00   1339.58       .10       .13       .01   1332.80
    3500.0     417.0    2254.0     829.1     307.7     756.5     568.0     718.6     119.6   1332.70
      1.77      1.36      2.98      1.46      .040      .030      .040      .000   1331.70   9814.99
   .000252      265.      325.      350.         2         0         0       .00    408.69  10223.67

*SECNO 3.076
     3.076      9.76   1339.56       .00       .00   1339.64       .08       .06       .00   1333.20
    3500.0     188.4    2457.0     854.5     155.4     947.0     547.6     729.0     121.7   1333.90
      1.81      1.21      2.59      1.56      .040      .030      .040      .000   1329.80   9910.23
   .000180      268.      290.      257.         2         0         0       .00    275.95  10186.18

   12JUL91      10:45:07

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

*SECNO 3.134

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.91

     3.134     12.74   1339.64       .00       .00   1339.67       .04       .03       .00   1326.90
    3500.0     824.4    2109.8     565.8     882.0    1130.4     559.5     743.7     123.9   1327.30
      1.86       .93      1.87      1.01      .040      .030      .040      .000   1326.90   9786.46
   .000049      344.      305.      260.         1         0         0       .00    354.95  10141.41
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*SECNO 3.165

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

     3.165     12.62   1339.62       .00       .00   1339.70       .08       .01       .01   1327.00
    3500.0     732.0    1858.5     909.5     496.4     683.2     577.3     752.0     125.1   1327.40
      1.89      1.47      2.72      1.58      .040      .030      .040      .000   1327.00   9885.82
   .000106      204.      167.      120.         2         0         0       .00    227.65  10113.47

*SECNO 3.192

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .44

     3.192      9.03   1339.53       .00       .00   1339.78       .25       .03       .05   1332.20
    3500.0     499.8    2307.2     693.0     200.3     508.0     259.5     756.2     125.7   1332.60
      1.89      2.49      4.54      2.67      .040      .030      .040      .000   1330.50   9928.79
   .000549       65.       143.      181.         2         0         0       .00    176.56  10105.35

*SECNO 3.233

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .46

     3.233      5.83   1339.43       .00       .00   1340.14       .71       .22       .14   1334.20
    3500.0     661.7    2262.1     576.3     157.6     289.6     132.5     760.0     126.5   1334.30
      1.90      4.20      7.81      4.35      .040      .030      .040      .000   1333.60   9915.28
   .002645      198.      215.      231.         2         0         0       .00    159.25  10074.53

*SECNO 3.275

   12JUL91      10:45:07

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

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  3.26

     3.275     11.43   1340.13       .00       .00   1340.32       .19       .13       .05   1329.70
    3500.0     300.3    2685.9     513.8     175.7     698.6     266.0     764.5     127.3   1329.10
      1.92      1.71      3.84      1.93      .040      .030      .040      .000   1328.70   9932.92
   .000249      255.      223.      210.         2         0         0       .00    152.21  10085.13

*SECNO 3.315
     3.315      9.98   1340.18       .00       .00   1340.38       .21       .06       .00   1331.00
    3500.0     183.4    2907.7     408.9     108.9     747.9     196.6     769.7     128.0   1330.30
      1.94      1.68      3.89      2.08      .040      .030      .040      .000   1330.20   9934.18
   .000296      210.      207.      205.         2         0         0       .00    136.47  10070.65
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*SECNO 3.353
     3.353      9.96   1340.27       .00       .00   1340.44       .18       .06       .00   1330.70
    3500.0     292.0    2948.4     259.7     177.1     815.9     159.2     774.8     128.7   1330.80
      1.96      1.65      3.61      1.63      .040      .030      .040      .000   1330.30   9931.47
   .000255      197.      202.      205.         2         0         0       .00    154.27  10085.74

*SECNO 3.413

3470 ENCROACHMENT STATIONS=          .0   10111.5  TYPE=      1  TARGET=    10111.500
     3.413      9.13   1340.33       .00       .00   1340.55       .22       .09       .01   1331.40
    3500.0     223.8    3046.1     230.0     127.1     773.1     129.2     782.7     129.8   1331.60
      1.98      1.76      3.94      1.78      .040      .030      .040      .000   1331.20   9913.20
   .000340      315.      316.      313.         2         0         0       .00    156.39  10069.59

*SECNO 3.454
     3.454      9.16   1340.36       .00       .00   1340.65       .29       .08       .02   1331.20
    3500.0     171.4    3127.0     201.6      84.7     686.8      96.4     787.4     130.5   1331.50
      1.99      2.02      4.55      2.09      .040      .030      .040      .000   1331.20   9941.71
   .000451      218.      217.      217.         2         0         0       .00    118.07  10059.77

   12JUL91      10:45:07

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

*SECNO 3.484

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .37

     3.484      8.18   1339.48       .00       .00   1341.25      1.77       .15       .44   1332.00
    3500.0     160.1    3043.3     296.6      33.7     270.2      52.9     789.7     130.8   1332.00
      2.00      4.76     11.26      5.61      .040      .030      .040      .000   1331.30   9974.26
   .003326      135.      158.      193.         3         0         0       .00     57.22  10031.48
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THIS RUN EXECUTED 12JUL91 10:45:30

****
HEC-2 WATER SURFACE PROFILES
Version 4.6.0; February 1991
****

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

EMF--FLOODWAY

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
.000	.00	.00	.00	1322.50	4900.00	1331.43	.00	1332.11	11.13	6.90	790.31	1468.82
.011	58.00	.00	.00	1322.80	4900.00	1331.50	.00	1332.18	11.70	7.13	792.86	1432.24
*.019	40.00	.00	.00	1322.60	4900.00	1331.81	.00	1332.28	5.81	5.49	892.96	2032.53
.029	57.00	1336.70	1333.50	1322.50	4900.00	1331.87	.00	1332.32	5.57	5.41	905.82	2076.17
*.036	33.00	.00	.00	1324.50	4900.00	1331.45	.00	1332.55	24.47	8.83	620.50	990.48
*.040	25.00	.00	.00	1323.50	4900.00	1332.34	.00	1332.66	5.70	4.79	1157.11	2051.51
*.075	184.00	.00	.00	1318.30	4900.00	1332.65	.00	1332.71	.52	2.11	2779.46	6768.89
.093	92.00	.00	.00	1318.40	4900.00	1332.68	.00	1332.71	.31	1.62	3549.87	8765.46
*.131	205.00	.00	.00	1317.40	4900.00	1332.70	.00	1332.72	.15	1.15	4758.39	12704.56
.175	230.00	.00	.00	1318.40	4900.00	1332.70	.00	1332.72	.23	1.39	4316.45	10273.73
.194	98.00	.00	.00	1318.60	4900.00	1332.70	.00	1332.73	.30	1.57	3983.18	9006.28
.228	179.00	.00	.00	1318.40	4900.00	1332.70	.00	1332.73	.29	1.57	3693.21	9111.74
.254	142.00	.00	.00	1321.00	4900.00	1332.70	.00	1332.74	.41	1.63	3309.83	7672.27
*.287	170.00	.00	.00	1323.80	4900.00	1332.58	.00	1332.81	3.59	3.99	1336.95	2587.85
*.325	204.00	.00	.00	1323.70	4900.00	1332.77	.00	1332.88	1.81	2.88	1978.05	3643.56
.363	199.00	.00	.00	1323.50	4900.00	1332.76	.00	1332.95	3.56	4.08	1657.46	2597.14
.402	208.00	.00	.00	1323.80	4900.00	1332.88	.00	1333.02	3.72	4.14	1904.27	2540.95

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
* .441	205.00	.00	.00	1323.70	4900.00	1333.02	.00	1333.06	.77	1.76	2937.17	5598.99
* .496	294.00	.00	.00	1325.10	4900.00	1333.01	.00	1333.11	2.24	2.60	1980.31	3271.33
* .514	233.00	.00	.00	1325.20	4900.00	1332.91	.00	1333.29	10.62	6.23	1094.24	1503.81
* .580	210.00	.00	.00	1325.40	4900.00	1333.03	.00	1333.67	23.22	8.90	941.29	1016.77
* .616	189.00	.00	.00	1324.50	4900.00	1333.71	.00	1333.94	7.45	5.46	1418.72	1795.33
.639	112.00	.00	.00	1324.90	4900.00	1333.87	.00	1334.01	3.93	4.15	1764.65	2471.67
.678	207.00	.00	.00	1325.60	4900.00	1333.93	.00	1334.12	5.54	4.43	1537.03	2082.54
.718	210.00	.00	.00	1324.70	4900.00	1334.07	.00	1334.23	3.95	4.27	1688.04	2466.46
.762	231.00	.00	.00	1324.40	4900.00	1334.04	.00	1334.41	7.12	5.77	1131.85	1835.98
.830	352.00	.00	.00	1325.60	4900.00	1334.30	.00	1334.69	8.68	6.00	1191.78	1663.02
* .871	218.00	.00	.00	1324.60	4900.00	1334.71	.00	1334.80	2.34	3.33	2319.60	3200.40
.907	190.00	.00	.00	1326.10	4900.00	1334.76	.00	1334.85	3.01	3.27	2190.93	2824.34
* .957	265.00	.00	.00	1325.50	4900.00	1334.85	.00	1334.89	.67	1.78	3270.10	5974.59
.997	210.00	.00	.00	1325.70	4900.00	1334.86	.00	1334.91	.84	1.99	2940.21	5330.71
1.031	180.00	.00	.00	1325.90	4900.00	1334.87	.00	1334.93	1.23	2.36	2677.79	4424.36
*1.067	199.00	.00	.00	1326.10	4900.00	1334.93	.00	1334.95	.51	1.28	4187.07	6875.29
*1.099	165.00	.00	.00	1326.20	4900.00	1334.92	.00	1334.97	1.19	1.90	2863.16	4498.75
1.112	119.00	.00	.00	1326.50	4900.00	1334.92	.00	1334.99	1.26	2.28	2359.77	4371.80
*1.145	125.00	.00	.00	1326.40	4900.00	1334.73	.00	1335.25	11.26	6.72	988.48	1460.10
*1.165	109.00	.00	.00	1326.63	4900.00	1335.20	.00	1335.40	2.47	3.55	1378.79	3119.22
1.182	90.00	1340.80	1337.80	1326.93	4900.00	1335.22	.00	1335.42	2.47	3.55	1379.84	3120.32
1.203	110.00	.00	.00	1327.50	4900.00	1335.34	.00	1335.46	2.93	3.26	2022.70	2863.48
1.251	250.00	.00	.00	1326.40	4800.00	1335.33	.00	1335.60	5.10	4.66	1312.85	2125.11
1.295	235.00	.00	.00	1326.30	4800.00	1335.38	.00	1335.79	8.60	5.82	1115.51	1637.10
*1.356	161.00	.00	.00	1326.60	4800.00	1335.73	.00	1335.89	2.94	3.61	1619.54	2799.26
1.366	215.00	.00	.00	1326.50	4800.00	1335.76	.00	1336.01	5.97	5.07	1430.11	1964.71

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
1.408	221.00	.00	.00	1325.90	4800.00	1335.95	.00	1336.14	5.58	4.98	1530.59	2031.96
*1.452	229.00	.00	.00	1326.60	4800.00	1336.13	.00	1336.23	2.07	3.04	2107.56	3336.39
*1.484	170.00	.00	.00	1327.00	4800.00	1336.09	.00	1336.32	4.61	4.31	1431.64	2236.65
1.501	92.00	.00	.00	1327.30	4800.00	1336.11	.00	1336.38	6.85	5.28	1321.41	1833.89
*1.543	220.00	.00	.00	1326.30	4800.00	1336.33	.00	1336.47	2.31	3.49	1764.71	3155.82
*1.585	225.00	.00	.00	1326.50	4800.00	1336.45	.00	1336.52	1.13	2.41	2731.08	4524.17
1.661	502.00	.00	.00	1323.60	4800.00	1336.50	.00	1336.56	.62	2.07	2787.95	6081.60
*1.693	169.00	.00	.00	1324.30	4800.00	1336.45	.00	1336.64	2.71	4.13	1632.66	2916.35
*1.739	244.00	.00	.00	1324.89	4800.00	1336.61	.00	1336.71	1.22	2.58	1859.25	4349.42
1.765	135.00	1358.60	1353.00	1326.16	4800.00	1336.61	.00	1336.72	1.22	2.60	1843.90	4342.48
1.784	100.00	.00	.00	1327.10	4800.00	1336.64	.00	1336.73	1.50	2.55	2003.52	3918.34
*1.822	202.00	.00	.00	1328.50	4800.00	1336.59	.00	1336.82	4.03	3.95	1325.37	2391.95
*1.858	190.00	.00	.00	1327.70	4800.00	1336.55	.00	1337.00	9.09	5.88	1027.55	1592.11
*1.907	259.00	.00	.00	1327.30	4800.00	1337.04	.00	1337.09	1.00	2.25	3049.23	4804.87
1.962	289.00	.00	.00	1327.00	4800.00	1337.07	.00	1337.14	1.91	3.05	2657.09	3472.14
*2.006	231.00	.00	.00	1326.30	4800.00	1337.11	.00	1337.16	.79	2.02	2908.89	5390.11
2.049	228.00	.00	.00	1326.90	4800.00	1337.11	.00	1337.20	1.39	2.73	2260.25	4075.22
*2.089	210.00	.00	.00	1327.40	4800.00	1337.10	.00	1337.26	2.87	3.80	1755.97	2832.90
*2.129	211.00	.00	.00	1328.40	4800.00	1337.17	.00	1337.35	6.00	4.96	1533.47	1958.79
2.173	235.00	.00	.00	1327.70	4800.00	1337.29	.00	1337.50	5.88	4.43	1433.43	1980.08
2.213	208.00	.00	.00	1327.30	4800.00	1337.40	.00	1337.64	6.74	5.04	1453.10	1848.75
2.254	221.00	.00	.00	1326.40	4800.00	1337.43	.00	1337.80	5.01	5.39	1173.94	2144.74
*2.304	261.00	.00	.00	1326.80	4800.00	1337.80	.00	1337.88	1.00	2.43	2250.52	4788.29
*2.340	189.00	.00	.00	1328.40	3500.00	1337.79	.00	1337.92	2.83	3.65	1392.65	2081.61
2.350	56.00	.00	.00	1328.40	3500.00	1337.72	.00	1337.97	3.17	3.98	880.29	1967.20
2.370	105.00	1341.60	1338.90	1328.28	3500.00	1337.75	.00	1337.99	3.12	3.95	886.00	1980.47

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*2.377	73.00	.00	.00	1328.60	3500.00	1337.96	.00	1338.03	1.38	2.46	1939.61	2975.06
*2.391	36.00	.00	.00	1326.60	3500.00	1338.03	.00	1338.03	.11	.82	5188.54	10746.76
*2.440	258.00	.00	.00	1329.70	3500.00	1337.94	.00	1338.08	3.83	3.79	1307.62	1789.13
2.482	223.00	.00	.00	1329.90	3500.00	1337.99	.00	1338.20	5.84	4.58	1117.99	1448.64
2.526	235.00	.00	.00	1330.70	3500.00	1338.19	.00	1338.34	5.33	4.01	1304.23	1515.79
2.572	241.00	.00	.00	1331.60	3500.00	1338.34	.00	1338.47	4.62	3.31	1404.08	1628.13
2.613	215.00	.00	.00	1332.20	3500.00	1338.43	.00	1338.61	7.38	4.24	1188.41	1288.10
2.654	220.00	.00	.00	1332.20	3500.00	1338.61	.00	1338.74	4.42	3.24	1362.34	1664.40
*2.702	250.00	.00	.00	1326.40	3500.00	1338.75	.00	1338.77	.33	1.52	3341.21	6052.60
2.741	208.00	.00	.00	1326.20	3500.00	1338.75	.00	1338.79	.57	2.01	2538.80	4624.05
*2.774	174.00	.00	.00	1328.70	3500.00	1338.73	.00	1338.82	1.67	2.72	1767.81	2710.92
*2.825	270.00	.00	.00	1329.70	3500.00	1338.74	.00	1338.91	3.76	3.59	1257.88	1805.48
2.876	267.00	.00	.00	1330.60	3500.00	1338.80	.00	1339.07	7.38	5.23	1067.75	1288.31
2.919	230.00	.00	.00	1330.50	3500.00	1338.96	.00	1339.25	7.85	5.12	960.43	1249.07
2.960	212.00	.00	.00	1332.40	3500.00	1339.19	.00	1339.43	9.06	5.05	995.96	1163.03
*3.021	325.00	.00	.00	1331.70	3500.00	1339.48	.00	1339.58	2.52	2.98	1632.19	2203.27
3.076	290.00	.00	.00	1329.80	3500.00	1339.56	.00	1339.64	1.80	2.59	1650.05	2611.74
*3.134	305.00	.00	.00	1326.90	3500.00	1339.64	.00	1339.67	.49	1.87	2571.94	4982.76
*3.165	167.00	.00	.00	1327.00	3500.00	1339.62	.00	1339.70	1.06	2.72	1756.97	3398.24
*3.192	143.00	.00	.00	1330.50	3500.00	1339.53	.00	1339.78	5.49	4.54	967.79	1493.26
*3.233	215.00	.00	.00	1333.60	3500.00	1339.43	.00	1340.14	26.45	7.81	579.65	680.48
*3.275	223.00	.00	.00	1328.70	3500.00	1340.13	.00	1340.32	2.49	3.84	1140.30	2220.13
3.315	207.00	.00	.00	1330.20	3500.00	1340.18	.00	1340.38	2.96	3.89	1053.37	2035.20
3.353	202.00	.00	.00	1330.30	3500.00	1340.27	.00	1340.44	2.55	3.61	1152.18	2190.99
3.413	316.00	.00	.00	1331.20	3500.00	1340.33	.00	1340.55	3.40	3.94	1029.41	1896.82
3.454	217.00	.00	.00	1331.20	3500.00	1340.36	.00	1340.65	4.51	4.55	867.95	1647.78
*3.484	158.00	.00	.00	1331.30	3500.00	1339.48	.00	1341.25	33.26	11.26	356.80	606.93

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EMF--FLOODWAY

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	.000	4900.00	1331.43	.00	.00	.00	111.04	.00
	.011	4900.00	1331.50	.00	.07	.00	111.39	58.00
*	.019	4900.00	1331.81	.00	.31	.00	113.50	40.00
	.029	4900.00	1331.87	.00	.06	.00	113.50	57.00
*	.036	4900.00	1331.45	.00	-.42	.00	108.08	33.00
*	.040	4900.00	1332.34	.00	.89	.00	170.47	25.00
*	.075	4900.00	1332.65	.00	.31	.00	261.08	184.00
	.093	4900.00	1332.68	.00	.03	.00	326.41	92.00
*	.131	4900.00	1332.70	.00	.02	.00	391.18	205.00
	.175	4900.00	1332.70	.00	.00	.00	397.52	230.00
	.194	4900.00	1332.70	.00	.00	.00	356.57	98.00
	.228	4900.00	1332.70	.00	.00	.00	336.75	179.00
	.254	4900.00	1332.70	.00	.00	.00	330.53	142.00
*	.287	4900.00	1332.58	.00	-.12	.00	180.29	170.00
*	.325	4900.00	1332.77	.00	.18	.00	287.21	204.00
	.363	4900.00	1332.76	.00	-.01	.00	312.18	199.00
	.402	4900.00	1332.88	.00	.12	.00	360.53	208.00
*	.441	4900.00	1333.02	.00	.14	.00	391.79	205.00
*	.496	4900.00	1333.01	.00	.00	.00	335.69	294.00
*	.514	4900.00	1332.91	.00	-.11	.00	215.50	233.00
*	.580	4900.00	1333.03	.00	.12	.00	273.18	210.00
*	.616	4900.00	1333.71	.00	.67	.00	274.21	189.00
	.639	4900.00	1333.87	.00	.17	.00	294.24	112.00
	.678	4900.00	1333.93	.00	.06	.00	281.25	207.00

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SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH	
	.718	4900.00	1334.07	.00	.13	.00	281.88	210.00
	.762	4900.00	1334.04	.00	-.03	.00	198.20	231.00
	.830	4900.00	1334.30	.00	.26	.00	294.55	352.00
*	.871	4900.00	1334.71	.00	.41	.00	449.33	218.00
	.907	4900.00	1334.76	.00	.05	.00	428.84	190.00
*	.957	4900.00	1334.85	.00	.09	.00	488.78	265.00
	.997	4900.00	1334.86	.00	.01	.00	443.11	210.00
	1.031	4900.00	1334.87	.00	.01	.00	452.70	180.00
*	1.067	4900.00	1334.93	.00	.06	.00	725.91	199.00
*	1.099	4900.00	1334.92	.00	-.01	.00	568.47	165.00
	1.212	4900.00	1334.92	.00	.00	.00	358.16	119.00
*	1.145	4900.00	1334.73	.00	-.19	.00	226.14	125.00
*	1.165	4900.00	1335.20	.00	.47	.00	181.03	109.00
	1.182	4900.00	1335.22	.00	.03	.00	180.60	90.00
	1.203	4900.00	1335.34	.00	.11	.00	423.07	110.00
	1.251	4800.00	1335.33	.00	-.01	.00	262.51	250.00
	1.295	4800.00	1335.38	.00	.04	.00	264.74	235.00
*	1.356	4800.00	1335.73	.00	.35	.00	268.53	161.00
	1.366	4800.00	1335.76	.00	.03	.00	300.41	215.00
	1.408	4800.00	1335.95	.00	.19	.00	299.66	221.00
*	1.452	4800.00	1336.13	.00	.18	.00	364.57	229.00
*	1.484	4800.00	1336.09	.00	-.04	.00	292.45	170.00
	1.501	4800.00	1336.11	.00	.02	.00	271.85	92.00
*	1.543	4800.00	1336.33	.00	.22	.00	283.04	220.00
*	1.585	4800.00	1336.45	.00	.13	.00	444.08	225.00
	1.661	4800.00	1336.50	.00	.05	.00	354.93	502.00

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	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	1.693	4800.00	1336.45	.00	-.05	.00	238.77	169.00
*	1.739	4800.00	1336.61	.00	.15	.00	235.02	244.00
	1.765	4800.00	1336.61	.00	.01	.00	231.19	135.00
	1.784	4800.00	1336.64	.00	.02	.00	261.36	100.00
*	1.822	4800.00	1336.59	.00	-.04	.00	190.91	202.00
*	1.858	4800.00	1336.55	.00	-.05	.00	264.95	190.00
*	1.907	4800.00	1337.04	.00	.49	.00	527.14	259.00
	1.962	4800.00	1337.07	.00	.03	.00	488.11	289.00
*	2.006	4800.00	1337.11	.00	.04	.00	401.08	231.00
	2.049	4800.00	1337.11	.00	-.01	.00	354.56	228.00
*	2.089	4800.00	1337.10	.00	-.01	.00	308.65	210.00
*	2.129	4800.00	1337.17	.00	.07	.00	336.90	211.00
	2.173	4800.00	1337.29	.00	.11	.00	280.90	235.00
	2.213	4800.00	1337.40	.00	.12	.00	307.34	208.00
	2.254	4800.00	1337.43	.00	.03	.00	231.16	221.00
*	2.304	4800.00	1337.80	.00	.36	.00	286.67	261.00
*	2.340	3500.00	1337.79	.00	.00	.00	251.07	189.00
	2.350	3500.00	1337.72	.00	-.07	.00	117.06	56.00
	2.370	3500.00	1337.75	.00	.03	.00	117.74	105.00
*	2.377	3500.00	1337.96	.00	.21	.00	336.29	73.00
*	2.391	3500.00	1338.03	.00	.06	.00	595.42	36.00
*	2.440	3500.00	1337.94	.00	-.09	.00	275.02	258.00
	2.482	3500.00	1337.99	.00	.05	.00	269.16	223.00
	2.526	3500.00	1338.19	.00	.20	.00	339.18	235.00
	2.572	3500.00	1338.34	.00	.15	.00	375.57	241.00
	2.613	3500.00	1338.43	.00	.09	.00	348.74	215.00

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	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	2.654	3500.00	1338.61	.00	.18	.00	445.84	220.00
*	2.702	3500.00	1338.75	.00	.15	.00	432.58	250.00
	2.741	3500.00	1338.75	.00	.00	.00	340.12	208.00
*	2.774	3500.00	1338.73	.00	-.02	.00	344.85	174.00
*	2.825	3500.00	1338.74	.00	.01	.00	344.68	270.00
	2.876	3500.00	1338.80	.00	.06	.00	352.60	267.00
	2.919	3500.00	1338.96	.00	.16	.00	281.36	230.00
	2.960	3500.00	1339.19	.00	.23	.00	238.08	212.00
*	3.021	3500.00	1339.48	.00	.29	.00	408.69	325.00
	3.076	3500.00	1339.56	.00	.08	.00	275.95	290.00
*	3.134	3500.00	1339.64	.00	.08	.00	354.95	305.00
*	3.165	3500.00	1339.62	.00	-.02	.00	227.65	167.00
*	3.192	3500.00	1339.53	.00	-.09	.00	176.56	143.00
*	3.233	3500.00	1339.43	.00	-.10	.00	159.25	215.00
*	3.275	3500.00	1340.13	.00	.71	.00	152.21	223.00
	3.315	3500.00	1340.18	.00	.04	.00	136.47	207.00
	3.353	3500.00	1340.27	.00	.09	.00	154.27	202.00
	3.413	3500.00	1340.33	.00	.07	.00	156.39	316.00
	3.454	3500.00	1340.36	.00	.03	.00	118.07	217.00
*	3.484	3500.00	1339.48	.00	-.88	.00	57.22	158.00

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12JUL91 10:45:07

SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO=	.019	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	.036	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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WARNING SECNO=	3.484	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

SUMMARY OF DISCHARGES

ELEVATION REFERENCE MARKS

SUMMARY OF DISCHARGES

LOCATION	100-YEAR DISCHARGE
GUADALUPE ROAD	4,900 cfs
BASELINE ROAD	4,800 cfs
SOUTHERN ROAD	3,500 cfs
BROADWAY ROAD	3,500 cfs

ELEVATION REFERENCE MARKS

ID NUMBER	ELEVATION	DESCRIPTION/LOCATION
ERM #1	1335.75	Maricopa County Highway Department B/C flush on the north east corner of bridge at Guadalupe Road and East Maricopa Floodway.
ERM #2	1334.97	Chiseled [x] on the top of west side of Roosevelt Water Canal District crossover 1/2 mile plus or minus, north of Guadalupe Road.
ERM #3	1341.92	Maricopa County Highway Department B/C on top of wall on curb line at southwest corner of bridge at Baseline Road and East Maricopa Floodway.
EMF #4	1337.59	Chiseled "+" center of north walk way on west side of Roosevelt Water Canal District gate sturcture just south of Superstition Springs Freeway.
ERM #5	1342.26	Maricopa County Highway Department B/C flush in sidewalk north east corner of bridge at Southern Road and the East Maricopa Floodway.
ERM #6	1350.32	Maricopa County Highway Department B/C flush at center of Valiente Circle culde-sac.
ERM #7	1345.4	Chiseled [x] south of wall on south east corner at bridge at Broadway Road and the East Maricopa Floodway.

SECTION 6: REFERENCE MATERIALS

REFERENCES

1. Cooper Aerial Survey Co., Topographic Maps, Scale 1:100, contour interval 2 feet, East Maricopa Floodway, July 1990.

2. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study Guidelines and Specification for Study Contractors, March 1991.

3. Federal Insurance Rate Maps, Effective April 15, 1988.

4. Indian Bend Wash Design Memorandum No. 1. General Design Memorandum Phase II, Project Design for Indian Bend Wash. Los Angeles District, U.S. Army Corps of Engineers, may 1975.

5. U.S. Department of the Army, Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, version 4.6, Users Manual, Davis California, September 1990.

6. Williams Chandler Watershed Protection and Flood Prevention Project, Maricopa and Pinal Counties, Arizona. Plans for the construction of the Roosevelt Water Conservation District (RWCD) Floodway Reaches 5 and 6. Prepared for the Flood Control District of Maricopa County, Board of Supervisors of Pinal County, and East Maricopa Natural Resource Conservation District by the Soil Conservation Service, U.S. Department of Agriculture, March 1984.

APPENDIX A

EMF/SUPERSTITION SPRINGS GOLF COURSE

Guadalupe Road Bridge - looking downstream

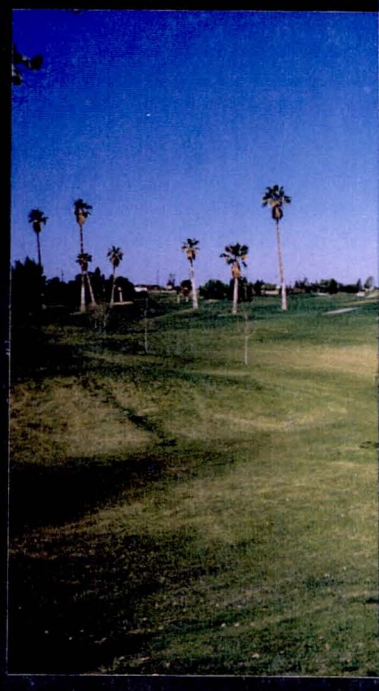
Note: 3ft grade differential

PHOTO DATE 4/9/90

Grade Control Sturcture looking upstream

Standing on Grade Control Structure
looking downstream at Guadalupe Road Bridge

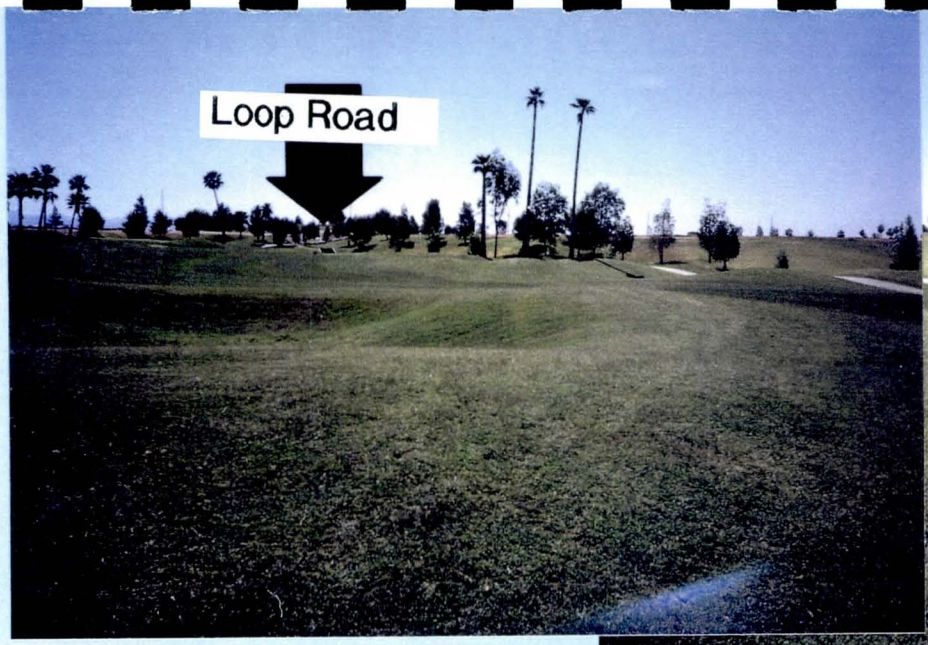
Photo Date 4/9/90

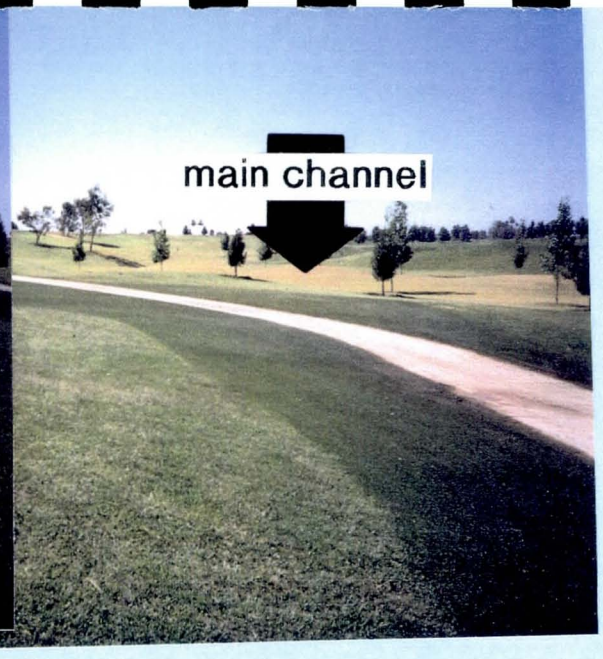


Looking upstream main channel - To the right-area of flow to Loop Road Looking downstream of main channel

Main Channel - looking downstream

Photo Date 4/9/90





Area approaching Loop Road
left overbank

upstream side looking west at
Loop Road entrance at golf cart crossing

Photo Date 5/17/91

looking downstream

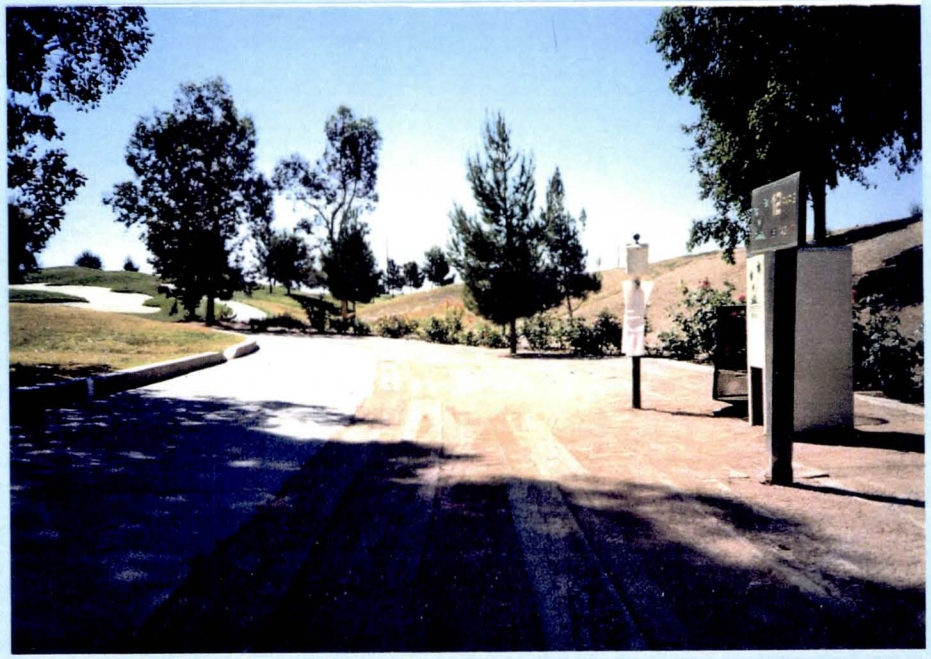
Area approaching Loop Road golf cart crossing

standing on green that seperates
approach to Loop Road

looking downstream

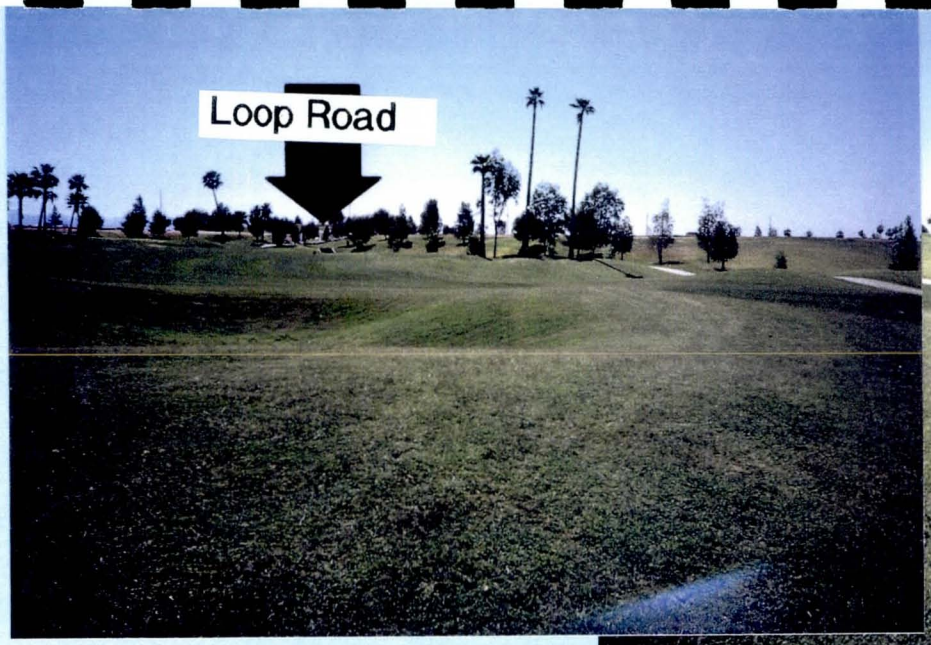
Photo Date 5/17/91

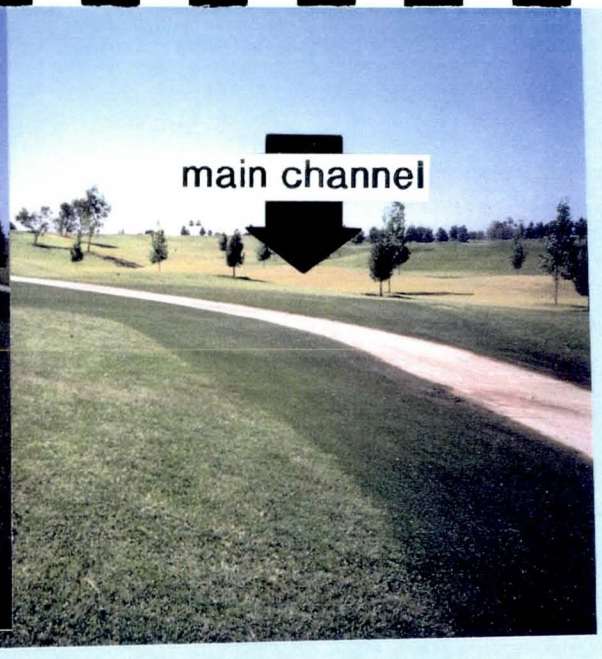
Loop Road entrance at golf cart crossing
looking east note uphill grade to crossing



Loop road down stream of golf cart crossing
slope continues uphill

Photo Date 5/17/91





Area approaching Loop Road
left overbank

upstream side looking west at
Loop Road entrance at golf cart crossing

Photo Date 5/17/91

Downstream of Baseline Road

Baseline Road Bridge looking upstream

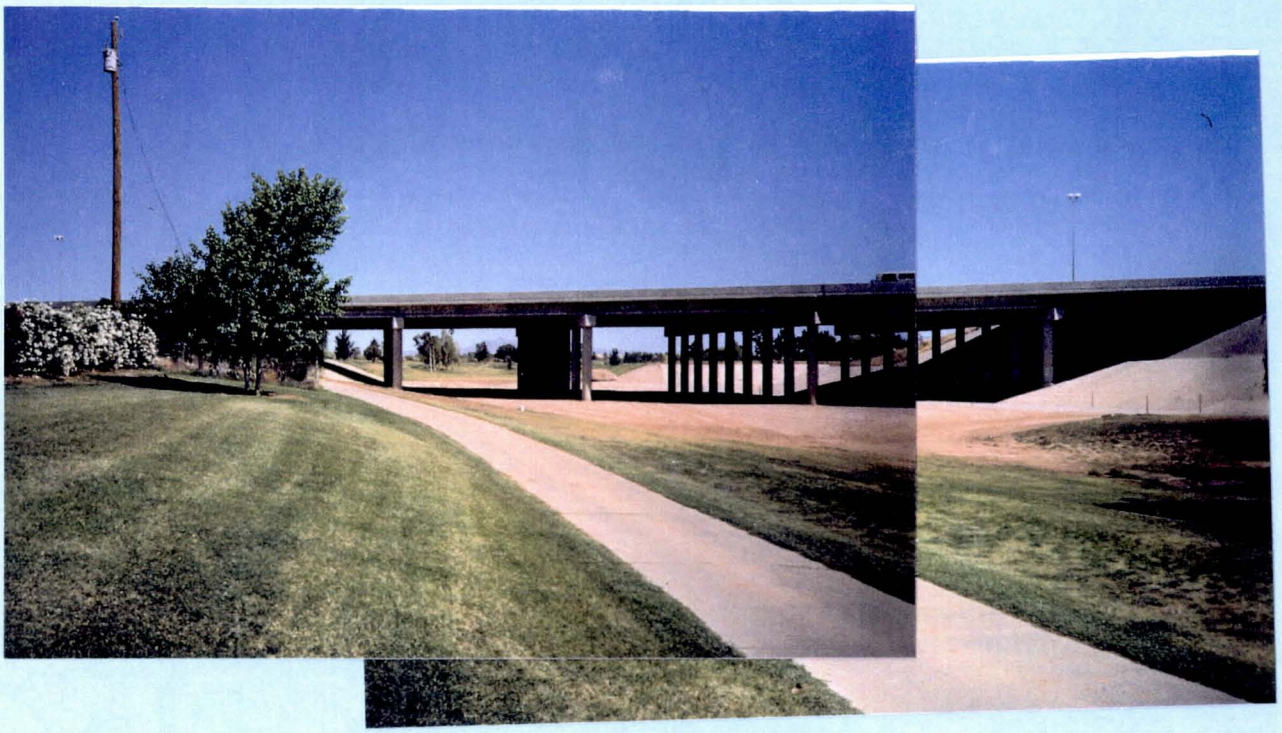
Photo Date 4/9/90

Looking downstream – under Baseline Road Bridge

Supersition Freeway Bridge – looking upstream

Photo Date 4/9/90

Supersition Freeway Bridge looking upstream right overbank



Supersition Freeway Bridge looking upstream

Photo Date 5/17

EMF/LEISURE WORLD GOLF COURSE

Looking upstream from Southern Road Bridge

Photo Date 4/9/90

South of Boadway Road Bridge looking downstream
- transition between EMF & Leisure World Golf Course

Looking upstream at EMF & Leisure World Golf Course - Transition
Broadway Road Bridge/ EMF in background

Photo Date 4/9/90