

# FLOOD INSURANCE STUDY

## FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 3 OF 3



### GUADALUPE COUNTY, TEXAS AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
CIBOLO, CITY OF	480267
GUADALUPE COUNTY, UNINCORPORATED AREAS	480266
LULING, CITY OF	480096
MARION, CITY OF	480268
NEW BERLIN, CITY OF	481625
NEW BRAUNFELS, CITY OF	485493
SAN MARCOS, CITY OF	485505
SANTA CLARA, CITY OF	480013
SCHERTZ, CITY OF	480269
SEGUIN, CITY OF	485508
SELMA, CITY OF	480046
STAPLES, CITY OF	481529



# FEMA

**REVISED:**  
**December 30, 2020**

Reprinted with corrections on January 21, 2021.

FLOOD INSURANCE STUDY NUMBER  
48187CV003B

Version Number 2.6.3.3

# TABLE OF CONTENTS

## Volume 1

	<u>Page</u>
<b>SECTION 1.0 – INTRODUCTION</b>	<b>1</b>
1.1 The National Flood Insurance Program	1
1.2 Purpose of this Flood Insurance Study Report	2
1.3 Jurisdictions Included in the Flood Insurance Study Project	2
1.4 Considerations for using this Flood Insurance Study Report	5
<b>SECTION 2.0 – FLOODPLAIN MANAGEMENT APPLICATIONS</b>	<b>15</b>
2.1 Floodplain Boundaries	15
2.2 Floodways	22
2.3 Base Flood Elevations	23
2.4 Non-Encroachment Zones	23
2.5 Coastal Flood Hazard Areas	23
2.5.1 Water Elevations and the Effects of Waves	23
2.5.2 Floodplain Boundaries and BFEs for Coastal Areas	24
2.5.3 Coastal High Hazard Areas	24
2.5.4 Limit of Moderate Wave Action	24
<b>SECTION 3.0 – INSURANCE APPLICATIONS</b>	<b>24</b>
3.1 National Flood Insurance Program Insurance Zones	24
<b>SECTION 4.0 – AREA STUDIED</b>	<b>25</b>
4.1 Basin Description	25
4.2 Principal Flood Problems	26
4.3 Non-Levee Flood Protection Measures	27
4.4 Levees	29
<b>SECTION 5.0 – ENGINEERING METHODS</b>	<b>29</b>
5.1 Hydrologic Analyses	29
5.2 Hydraulic Analyses	44
5.3 Coastal Analyses	54
5.3.1 Total Stillwater Elevations	54
5.3.2 Waves	54
5.3.3 Coastal Erosion	54
5.3.4 Wave Hazard Analyses	54
5.4 Alluvial Fan Analyses	55
<b>SECTION 6.0 – MAPPING METHODS</b>	<b>55</b>
6.1 Vertical and Horizontal Control	55
6.2 Base Map	56
6.3 Floodplain and Floodway Delineation	57

## Volume 1, Continued

### Figures

	<u>Page</u>
Figure 1: FIRM Index	7
Figure 2: FIRM Notes to Users	8
Figure 3: Map Legend for FIRM	11
Figure 4: Floodway Schematic	22
Figure 5: Wave Runup Transect Schematic	23
Figure 6: Coastal Transect Schematic	24
Figure 7: Frequency Discharge-Drainage Area Curves	43
Figure 8: 1% Annual Chance Total Stillwater Elevations for Coastal Areas	54
Figure 9: Transect Location Map	55

### Tables

	<u>Page</u>
Table 1: Listing of NFIP Jurisdictions	2
Table 2: Flooding Sources Included in this FIS Report	16
Table 3: Flood Zone Designations by Community	25
Table 4: Basin Characteristics	26
Table 5: Principal Flood Problems	27
Table 6: Historic Flooding Elevations	27
Table 7: Non-Levee Flood Protection Measures	28
Table 8: Levees	29
Table 9: Summary of Discharges	31
Table 10: Summary of Non-Coastal Stillwater Elevations	43
Table 11: Stream Gage Information used to Determine Discharges	44
Table 12: Summary of Hydrologic and Hydraulic Analyses	46
Table 13: Roughness Coefficients	53
Table 14: Summary of Coastal Analyses	54
Table 15: Tide Gage Analysis Specifics	54
Table 16: Coastal Transect Parameters	55
Table 17: Summary of Alluvial Fan Analyses	55
Table 18: Results of Alluvial Fan Analyses	55
Table 19: Countywide Vertical Datum Conversion	56
Table 20: Stream-Based Vertical Datum Conversion	56
Table 21: Base Map Sources	57
Table 22: Summary of Topographic Elevation Data used in Mapping	58
Table 23: Floodway Data	59

## Volume 2

	<u>Page</u>
<b>SECTION 6.0 – MAPPING METHODS</b>	
6.4 Coastal Flood Hazard Mapping	92
6.5 FIRM Revisions	92
6.5.1 Letters of Map Amendment	92

## Volume 2, Continued

### SECTION 6.0 – MAPPING METHODS, Continued

6.5	FIRM Revisions, Continued	
6.5.2	Letters of Map Revision Based on Fill	92
6.5.3	Letters of Map Revision	93
6.5.4	Physical Map Revisions	93
6.5.5	Contracted Restudies	94
6.5.6	Community Map History	94

### SECTION 7.0 – CONTRACTED STUDIES AND COMMUNITY COORDINATION 96

7.1	Contracted Studies	96
7.2	Community Meetings	102

### SECTION 8.0 – ADDITIONAL INFORMATION 107

### SECTION 9.0 – BIBLIOGRAPHY AND REFERENCES 109

#### Tables

	<u>Page</u>
Table 24: Flood Hazard and Non-Encroachment Data for Selected Streams	92
Table 25: Summary of Coastal Transect Mapping Considerations	92
Table 26: Incorporated Letters of Map Change	93
Table 27: Community Map History	95
Table 28: Summary of Contracted Studies Included in this FIS Report	97
Table 29: Community Meetings	103
Table 30: Map Repositories	107
Table 31: Additional Information	108
Table 32: Bibliography and References	110

#### Exhibits

Flood Profiles	<u>Panel</u>
INTENTIONALLY LEFT OUT	01 P
Alligator Creek	02-05 P
Cibolo Creek	06-22 P
Cibolo-Dietz Creek Diversion	23-24 P
Cibolo Creek Landfill Diversion	25 P
Cibolo Creek Tributary No. 13	26 P
Cottonwood Creek North	27-30 P
Cottonwood Creek South	31-39 P
Dietz Creek	40-44 P
East Branch Dietz Creek	45-48 P
Elm Creek North	49-50 P
Elm Creek South	51-54 P
Geronimo Creek	55-61 P

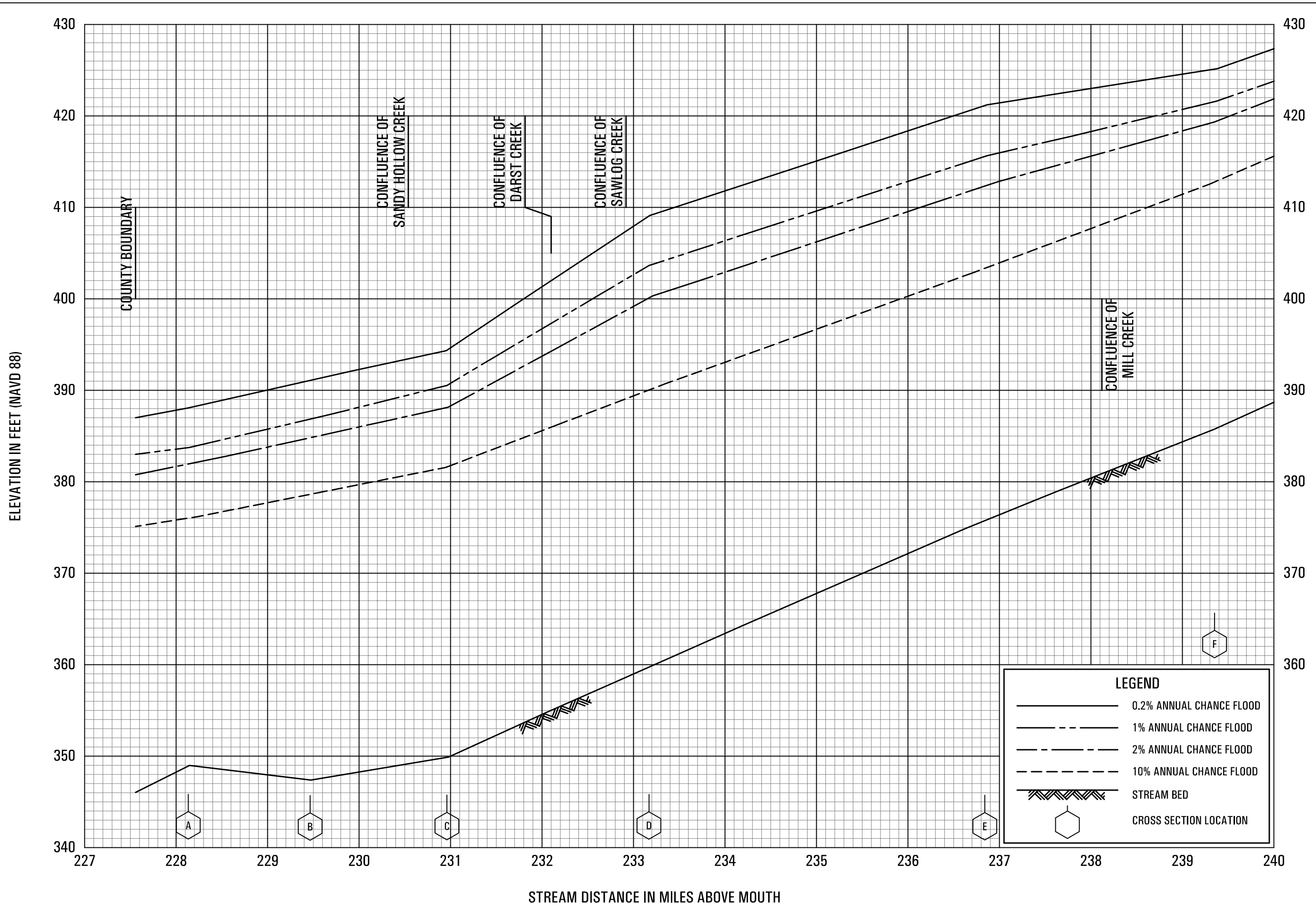
## Volume 3

### Exhibits

Flood Profiles	<u>Panel</u>
Guadalupe River	62-77 P
Interstate Highway-10 Diversion	78 P
Long Creek	79-81 P
San Marcos River	82-90 P
Santa Clara Creek	91-97 P
Santa Clara Creek Tributary No. 1	98-99 P
Santa Clara Creek Tributary No. 2	100 P
Town Creek	101-105 P
Town Creek Tributary No. 1	106 P
Walnut Branch	107-108 P
York Creek	109-117 P

### **Published Separately**

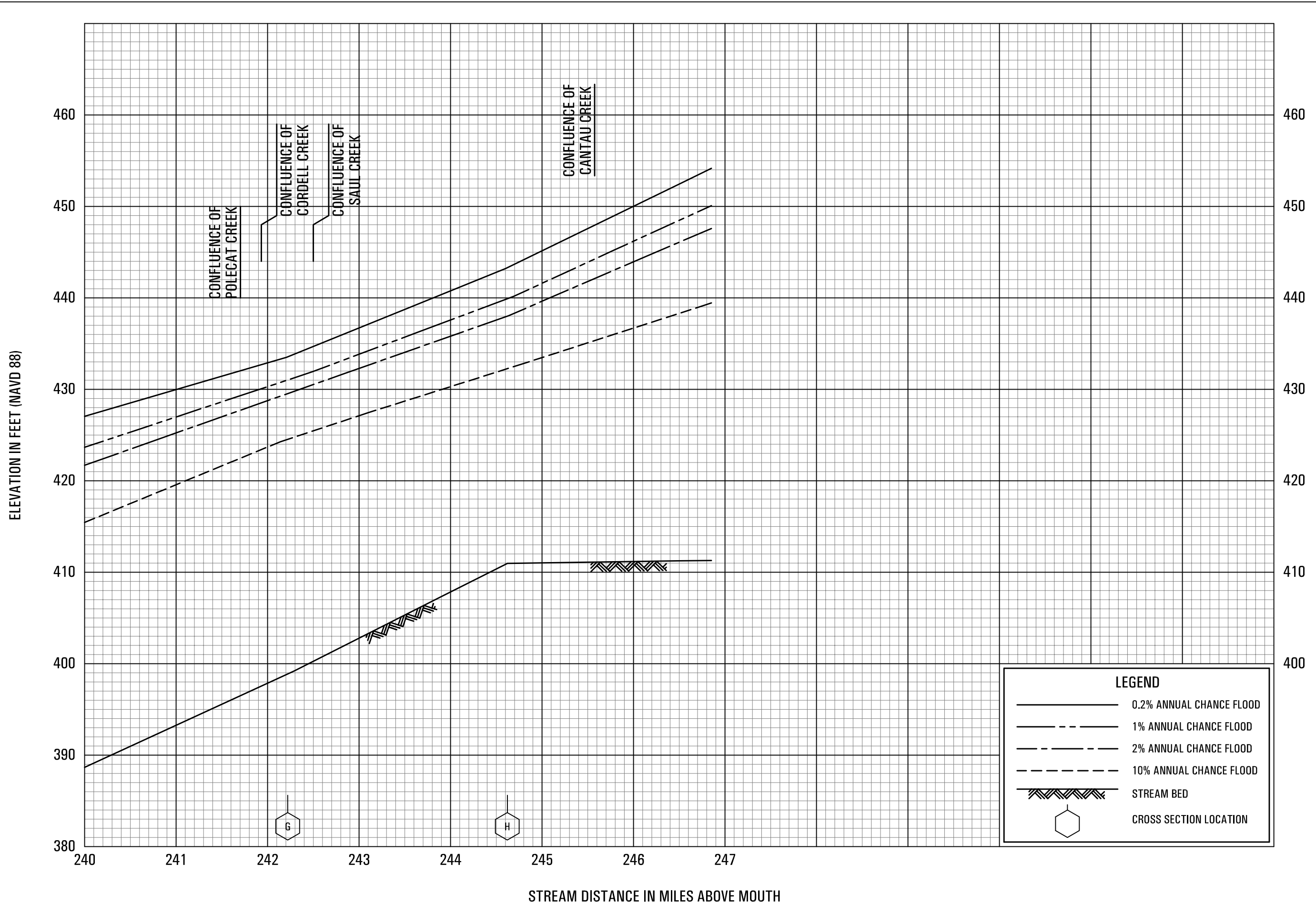
Flood Insurance Rate Map (FIRM)



**FLOOD PROFILES**

**GUADALUPE RIVER**

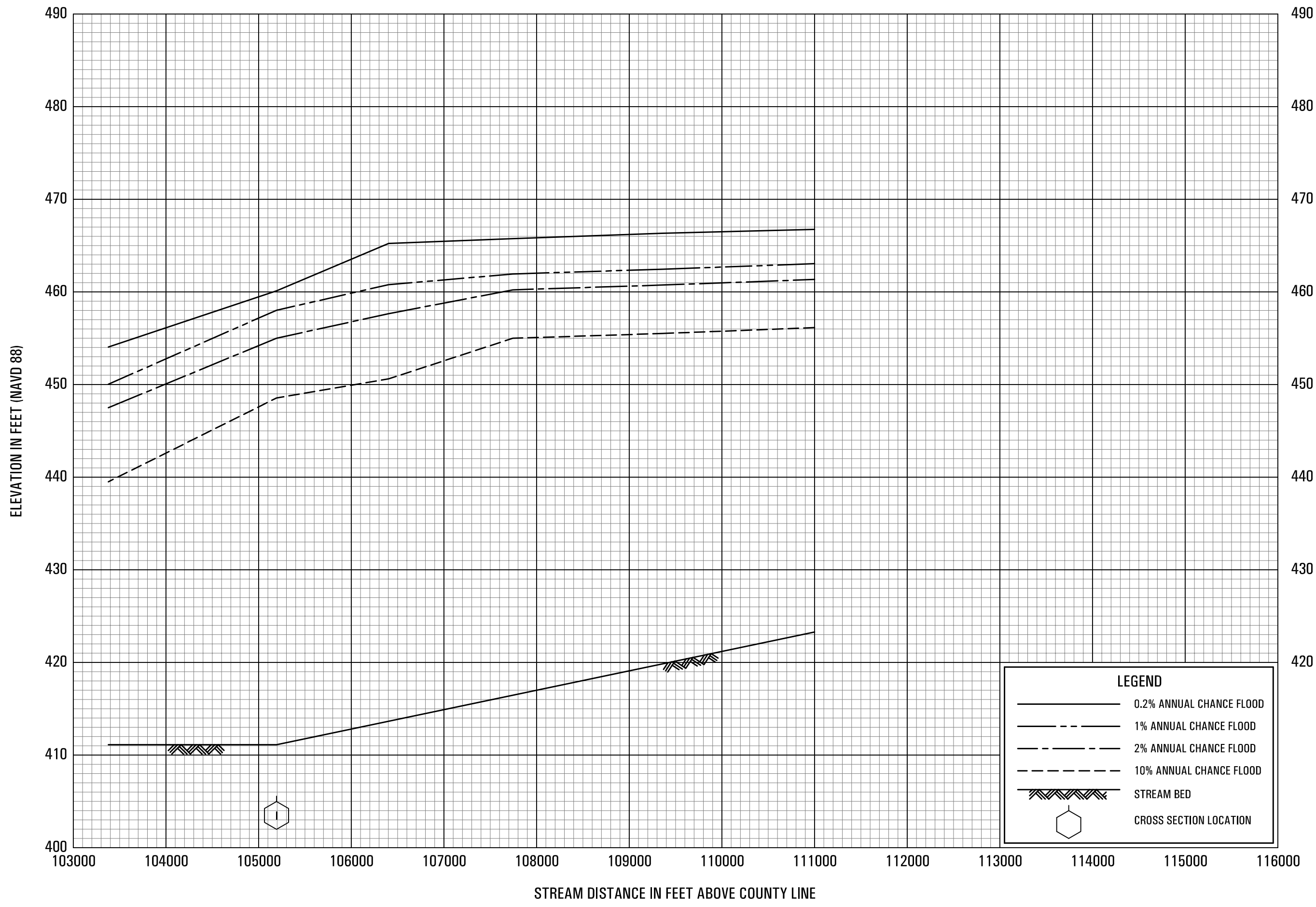
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**GUADALUPE COUNTY, TX**  
 AND INCORPORATED AREAS



**FLOOD PROFILES**

**GUADALUPE RIVER**

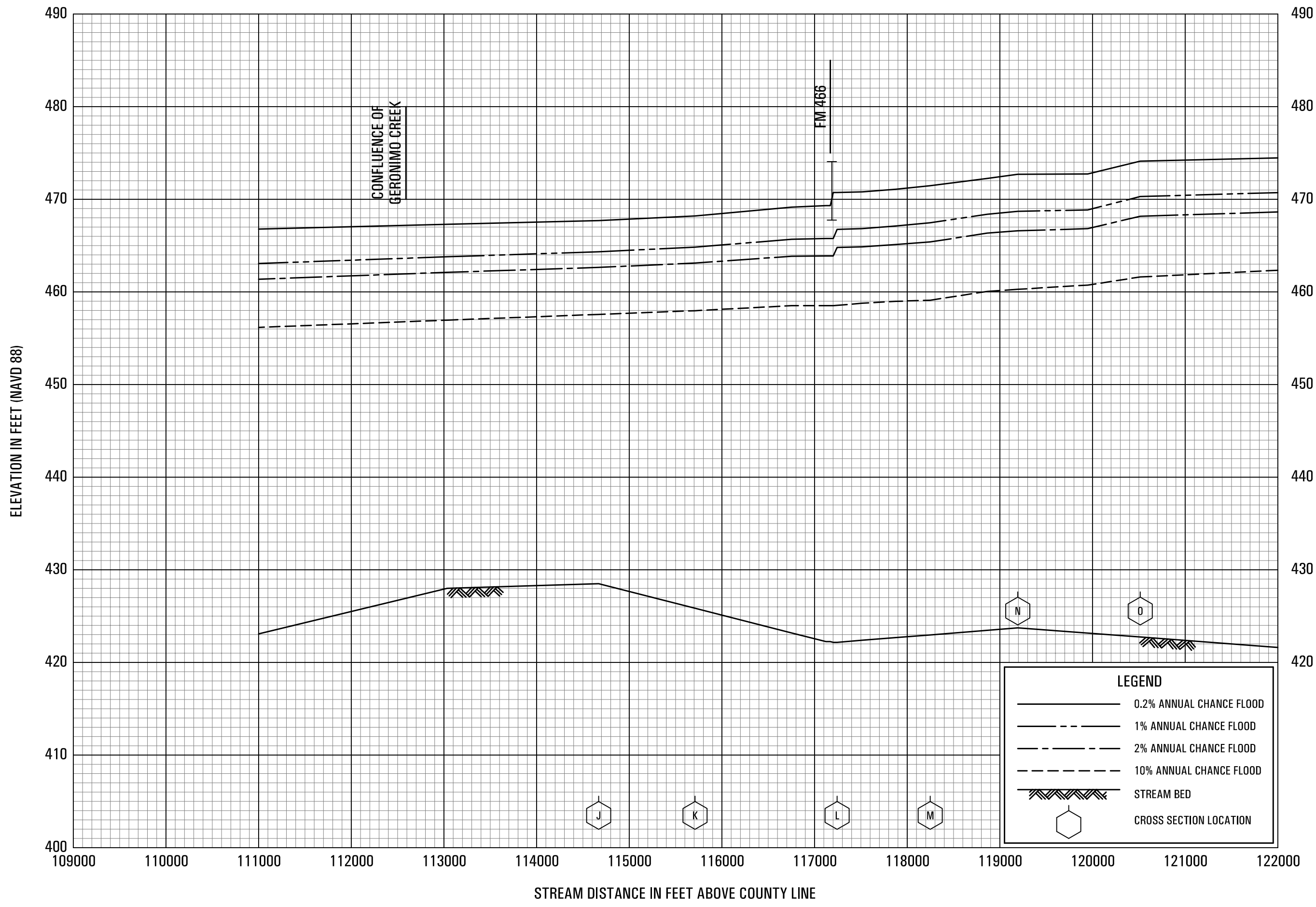
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**GUADALUPE COUNTY, TX**  
 AND INCORPORATED AREAS



FEDERAL EMERGENCY MANAGEMENT AGENCY  
**GUADALUPE COUNTY, TX**  
 AND INCORPORATED AREAS

**FLOOD PROFILES**  
 GUADALUPE RIVER

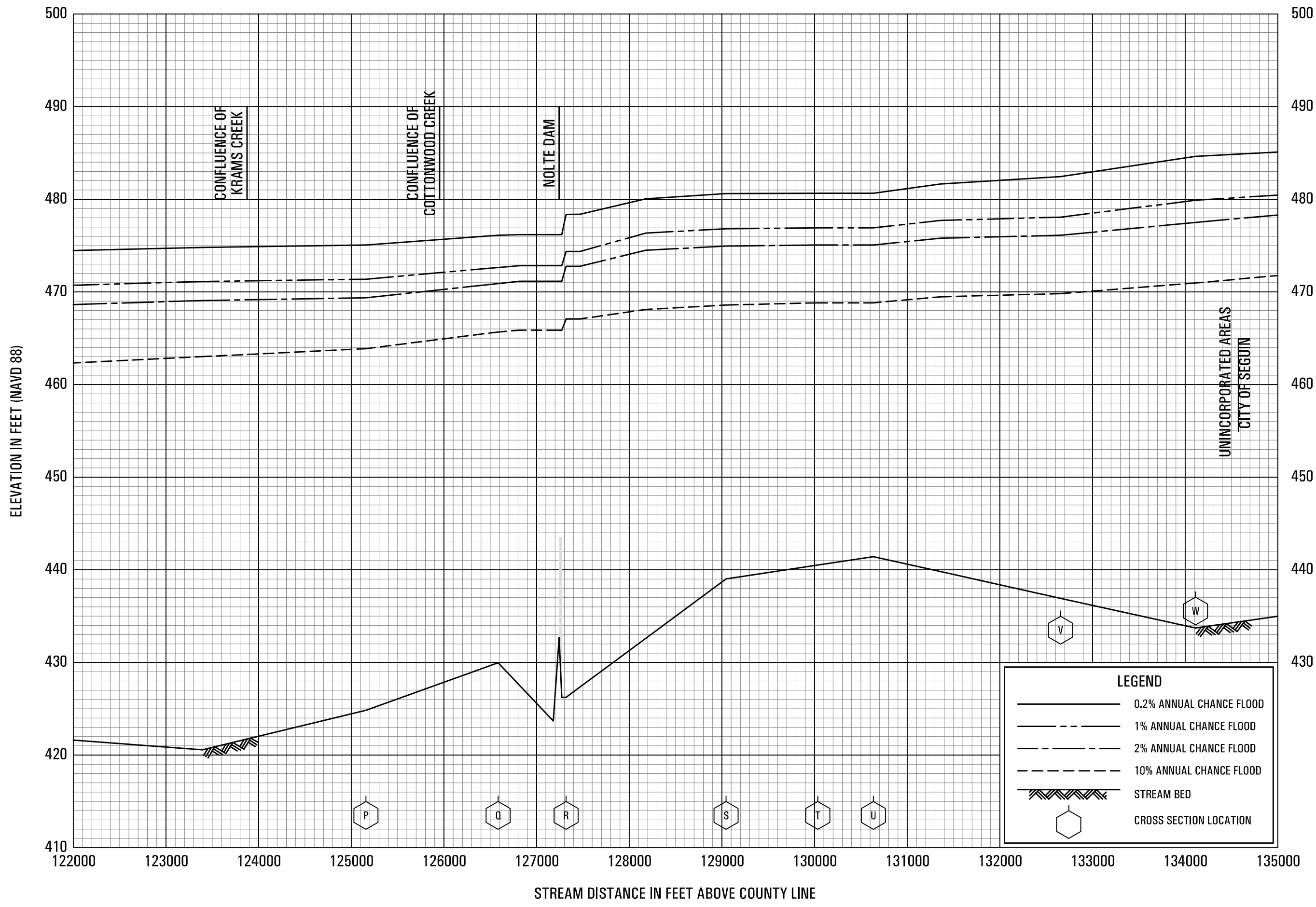




**FLOOD PROFILES**  
**GUADALUPE RIVER**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**  
**GUADALUPE COUNTY, TX**  
**AND INCORPORATED AREAS**

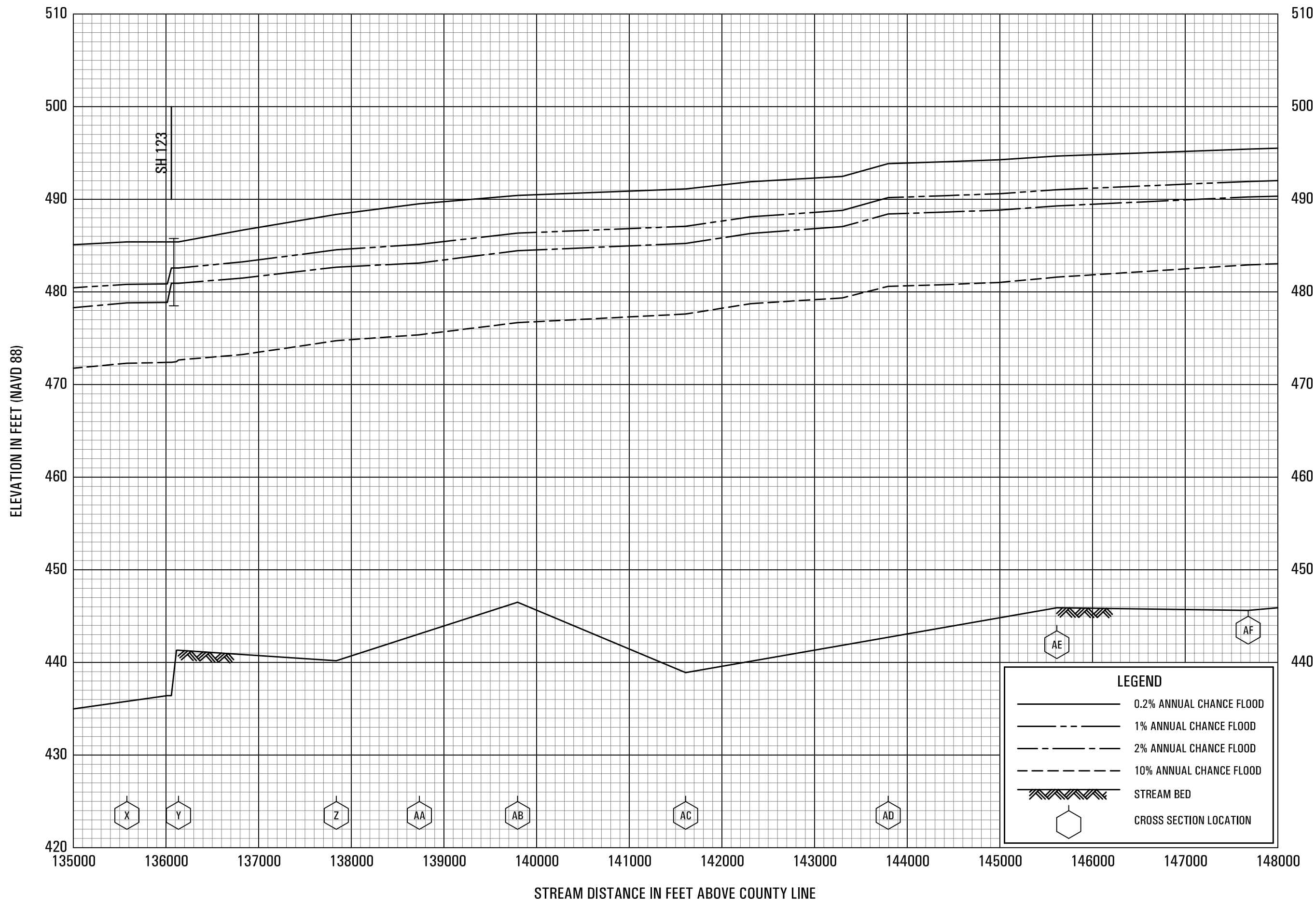
**65P**



**FLOOD PROFILES**  
**GUADALUPE RIVER**

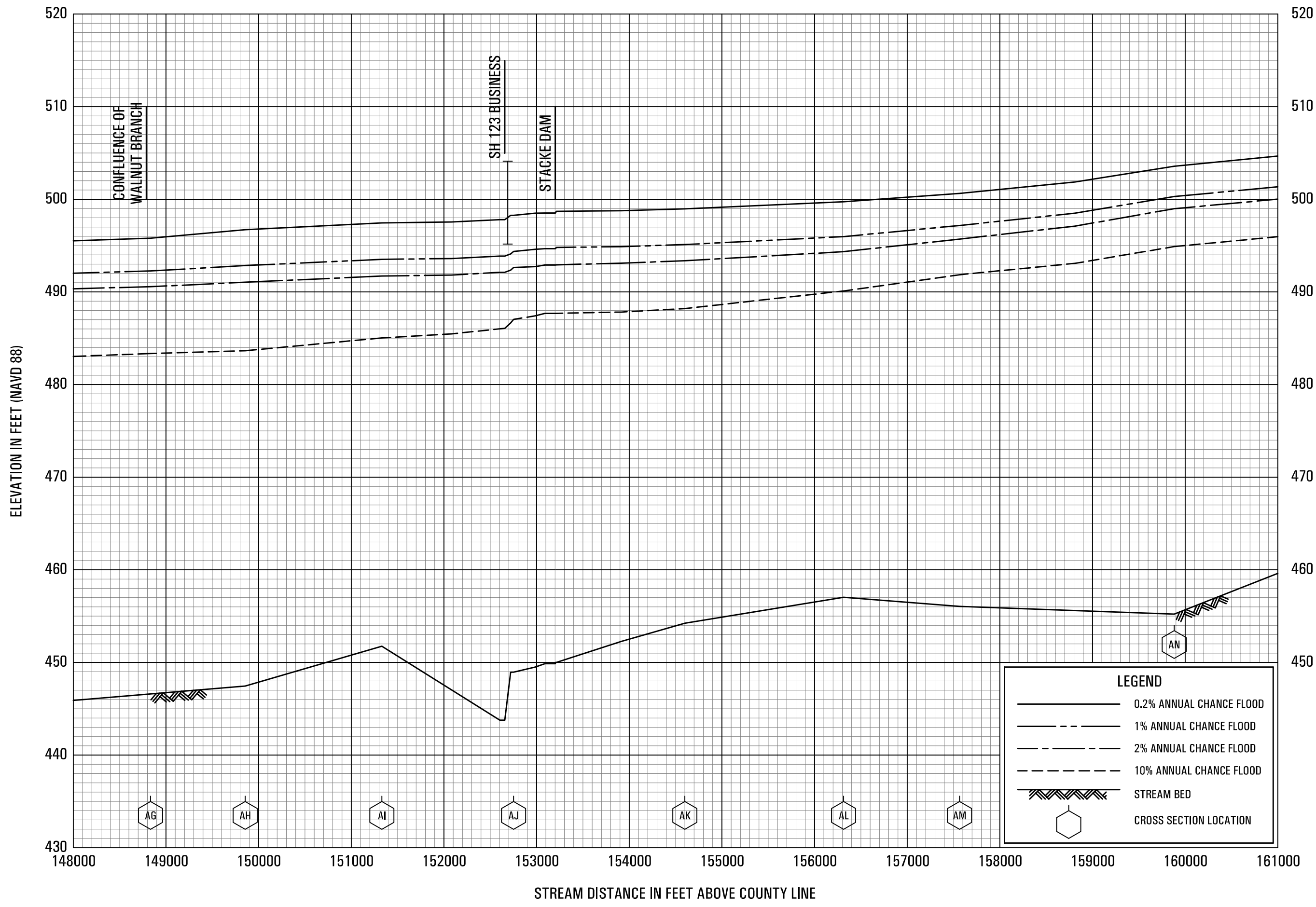
**FEDERAL EMERGENCY MANAGEMENT AGENCY**  
**GUADALUPE COUNTY, TX**  
**AND INCORPORATED AREAS**

**66P**



**FLOOD PROFILES  
GUADALUPE RIVER**

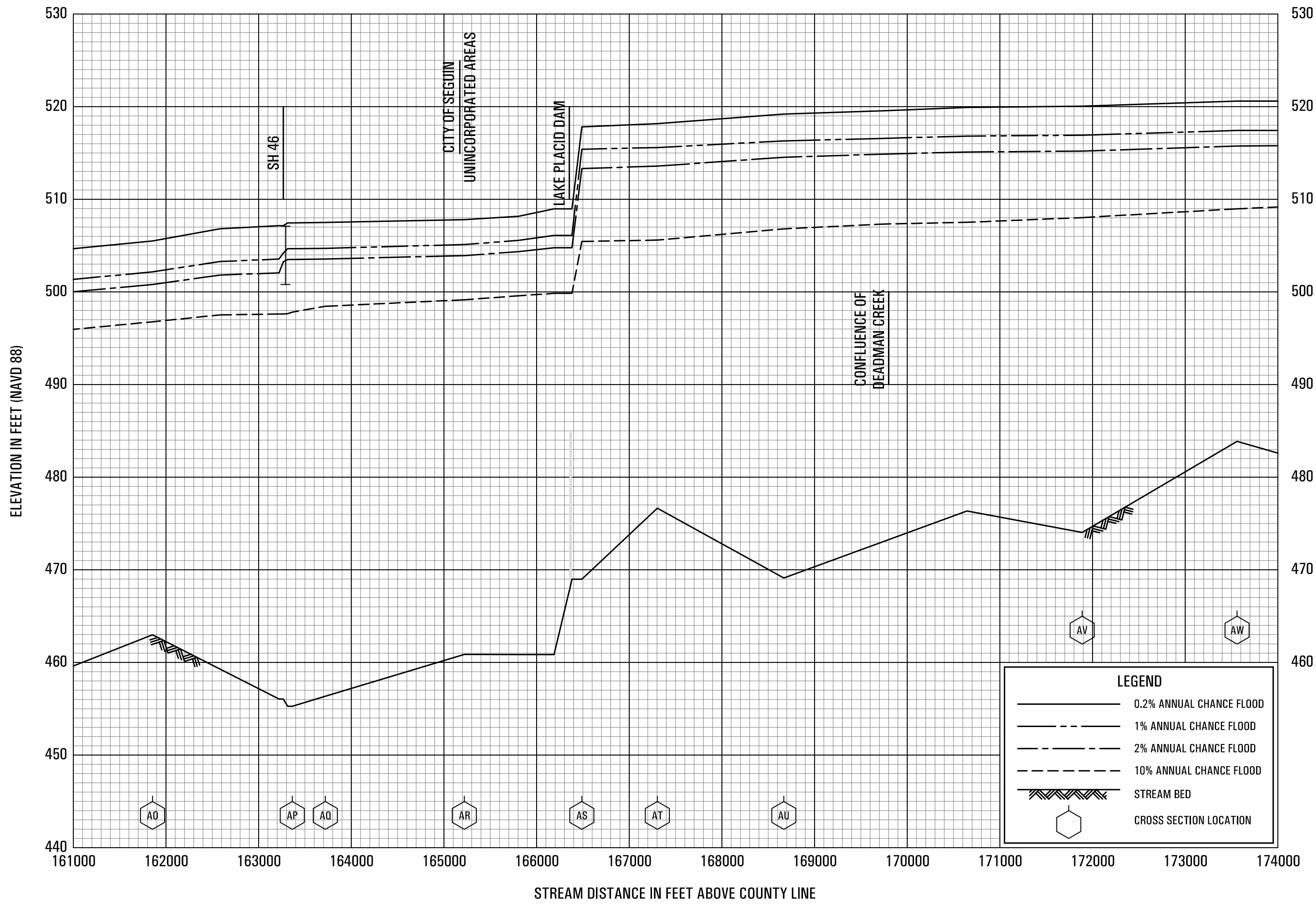
**FEDERAL EMERGENCY MANAGEMENT AGENCY  
GUADALUPE COUNTY, TX  
AND INCORPORATED AREAS**



**FLOOD PROFILES**  
**GUADALUPE RIVER**







**FEDERAL EMERGENCY MANAGEMENT AGENCY**  
**GUADALUPE COUNTY, TX**  
**AND INCORPORATED AREAS**

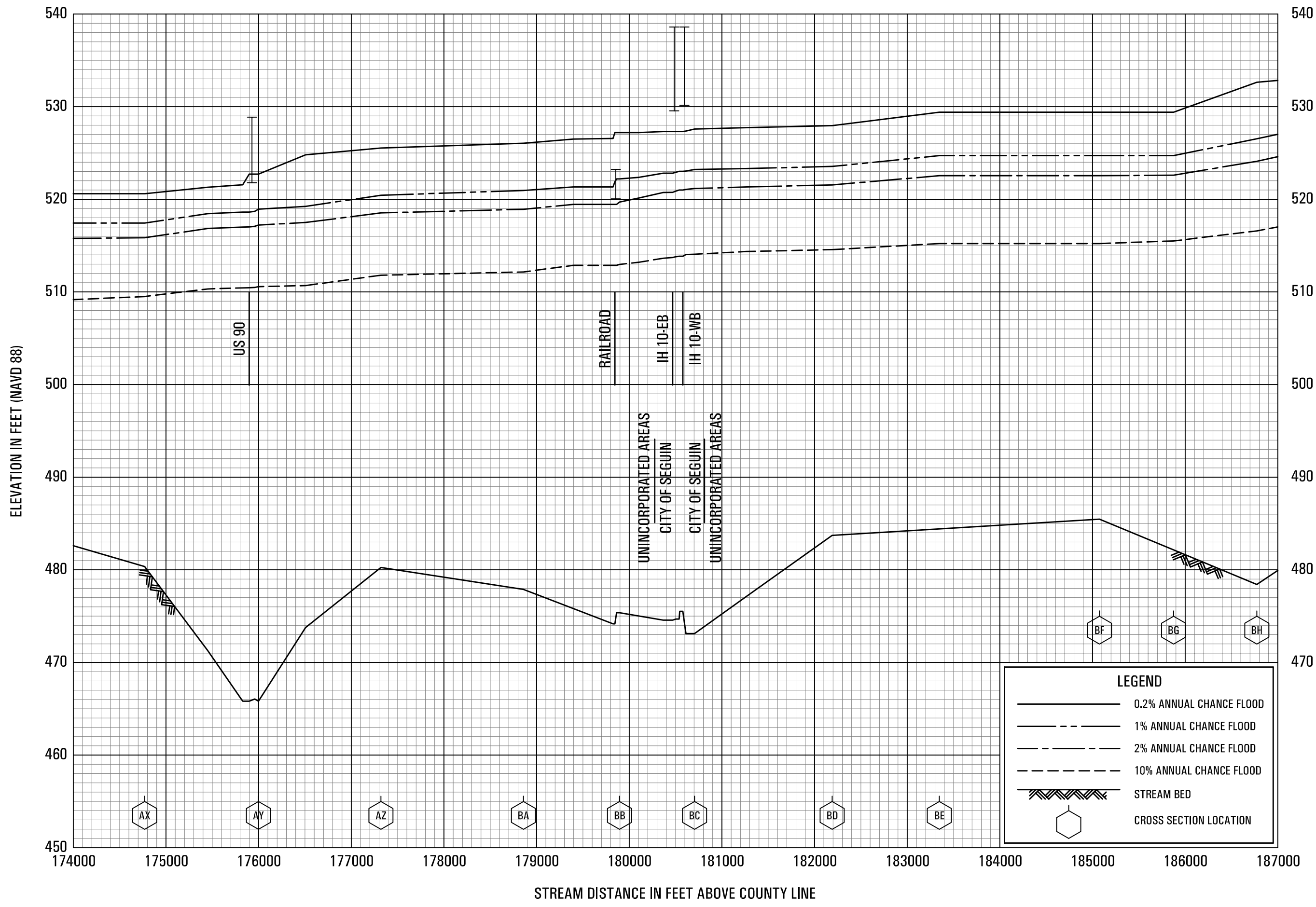
**68P**



**FLOOD PROFILES**  
**GUADALUPE RIVER**

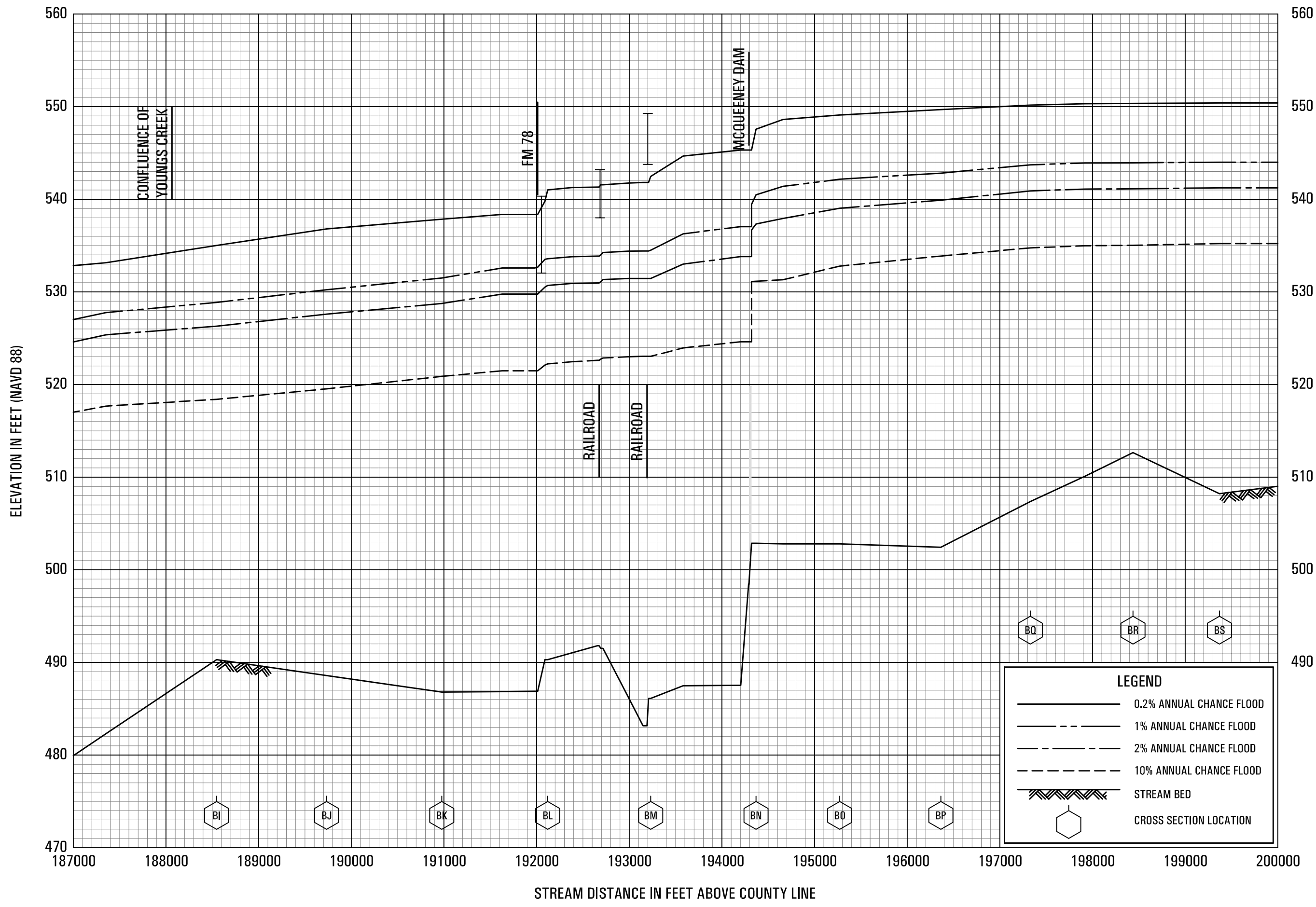
**FEDERAL EMERGENCY MANAGEMENT AGENCY**  
**GUADALUPE COUNTY, TX**  
**AND INCORPORATED AREAS**

LEGEND	
	0.2% ANNUAL CHANCE FLOOD
	1% ANNUAL CHANCE FLOOD
	2% ANNUAL CHANCE FLOOD
	10% ANNUAL CHANCE FLOOD
	STREAM BED
	CROSS SECTION LOCATION



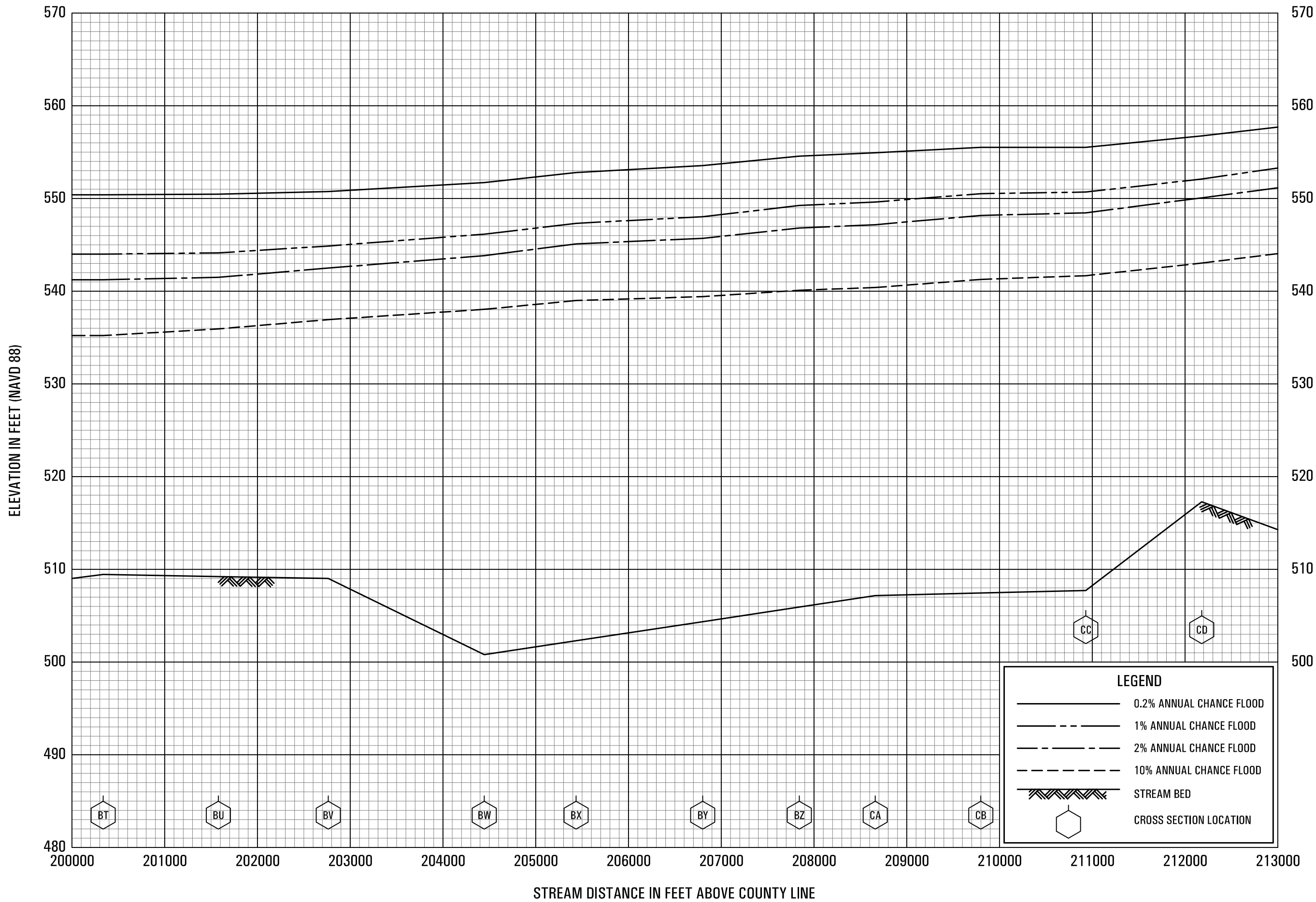
**FLOOD PROFILES  
GUADALUPE RIVER**

**FEDERAL EMERGENCY MANAGEMENT AGENCY  
GUADALUPE COUNTY, TX  
AND INCORPORATED AREAS**



**FLOOD PROFILES  
GUADALUPE RIVER**

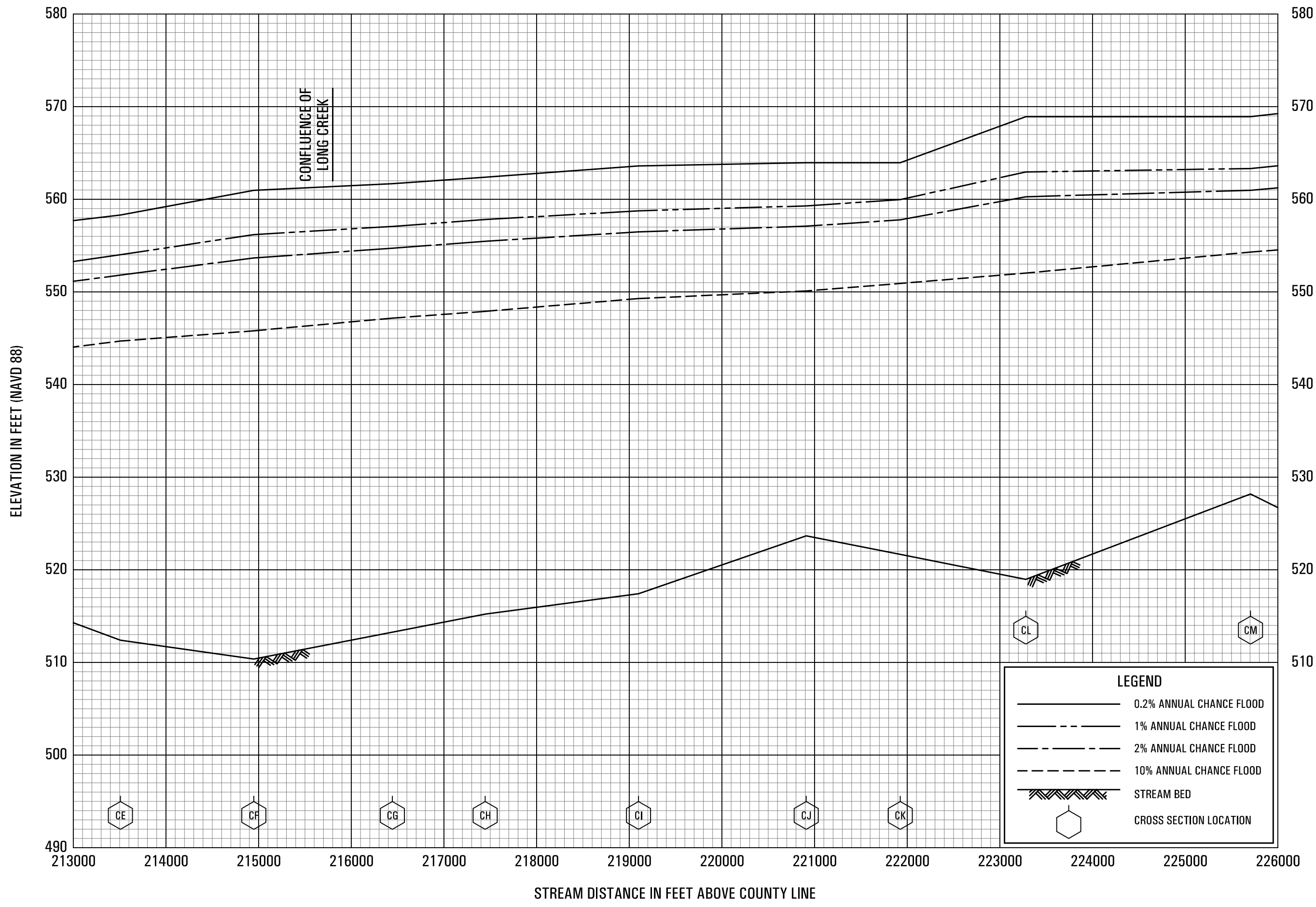
**FEDERAL EMERGENCY MANAGEMENT AGENCY  
GUADALUPE COUNTY, TX  
AND INCORPORATED AREAS**



**FLOOD PROFILES**  
**GUADALUPE RIVER**

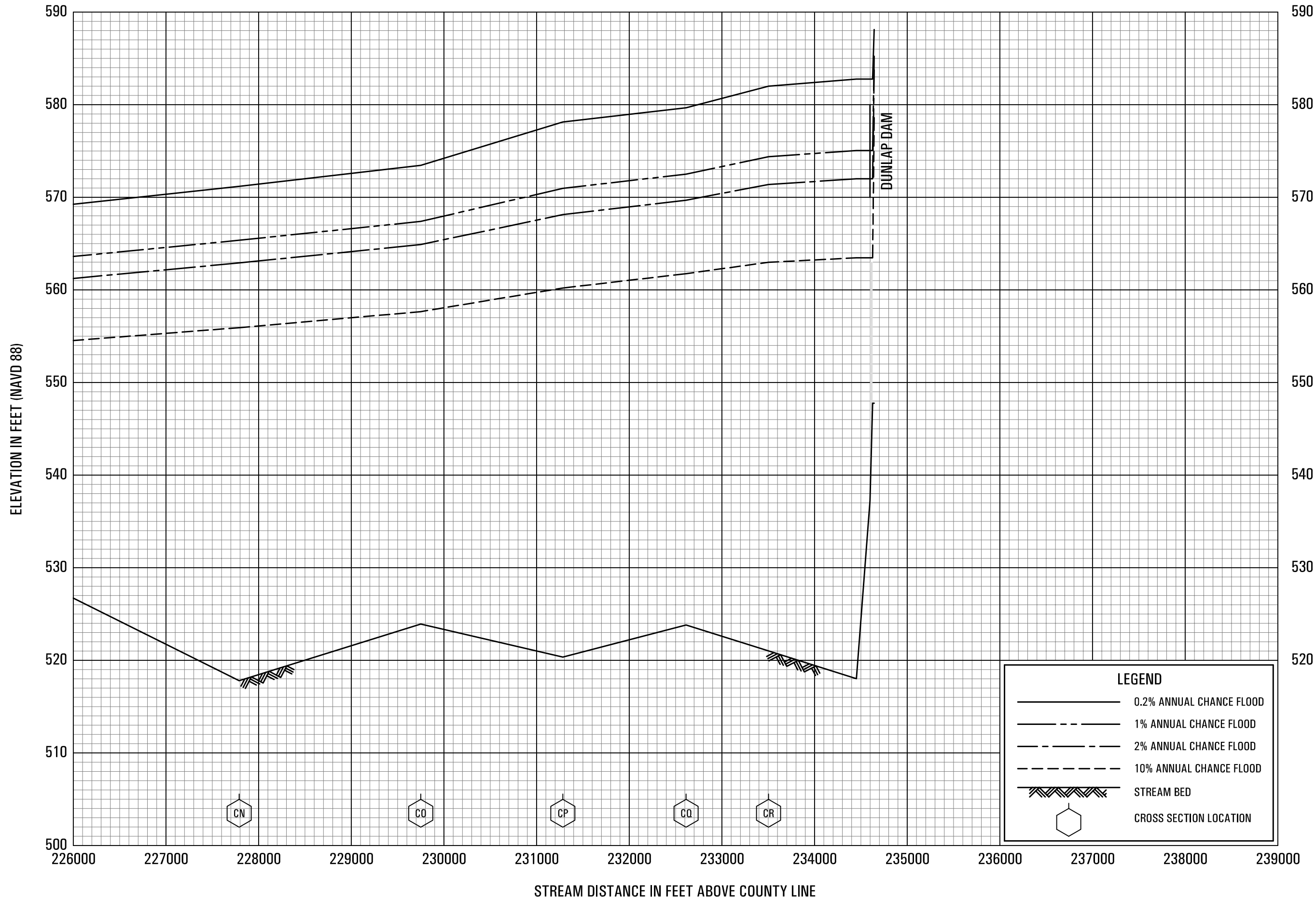
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**GUADALUPE COUNTY, TX**  
AND INCORPORATED AREAS





**FLOOD PROFILES  
GUADALUPE RIVER**

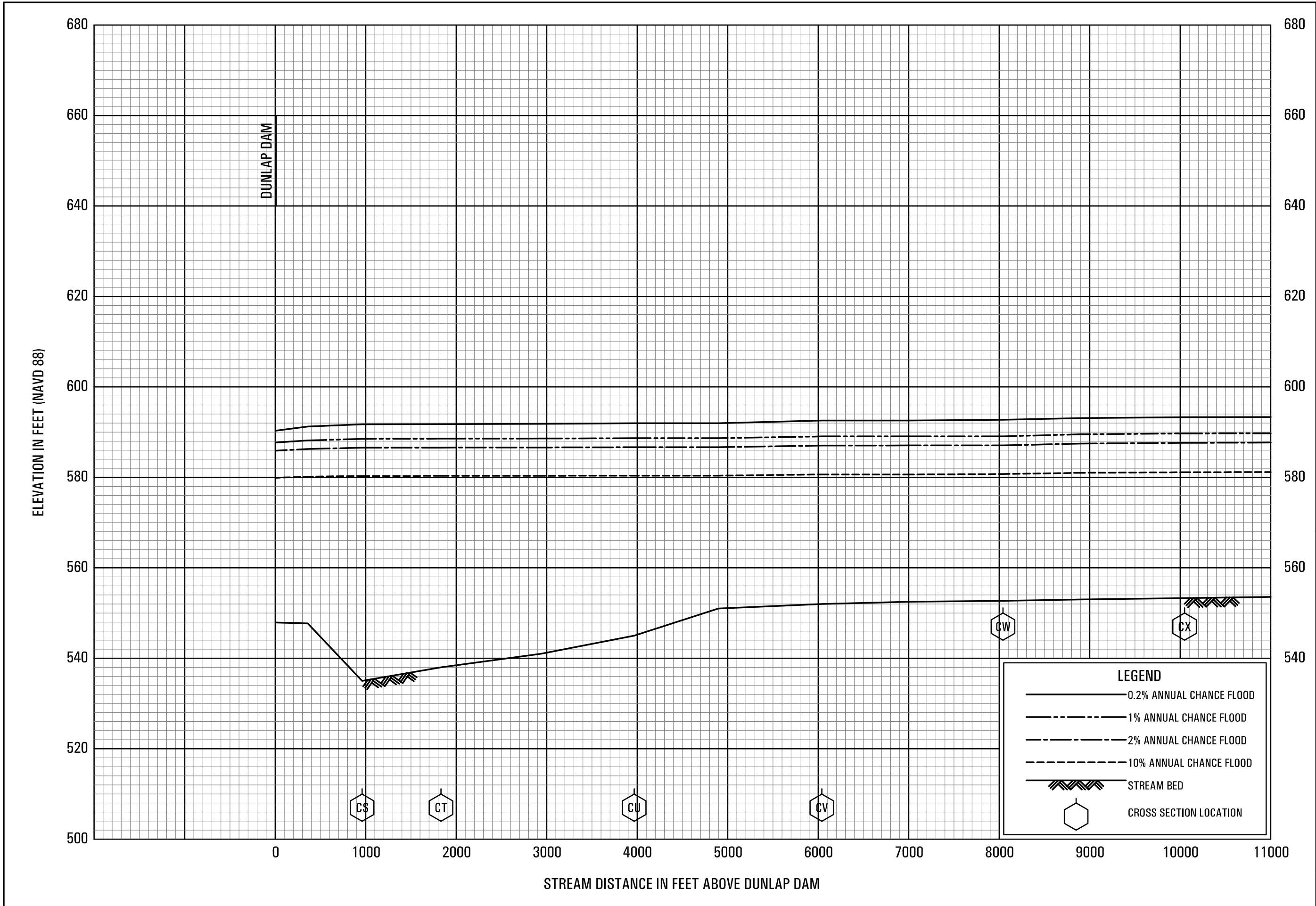
**FEDERAL EMERGENCY MANAGEMENT AGENCY  
GUADALUPE COUNTY, TX  
AND INCORPORATED AREAS**



**FLOOD PROFILES**

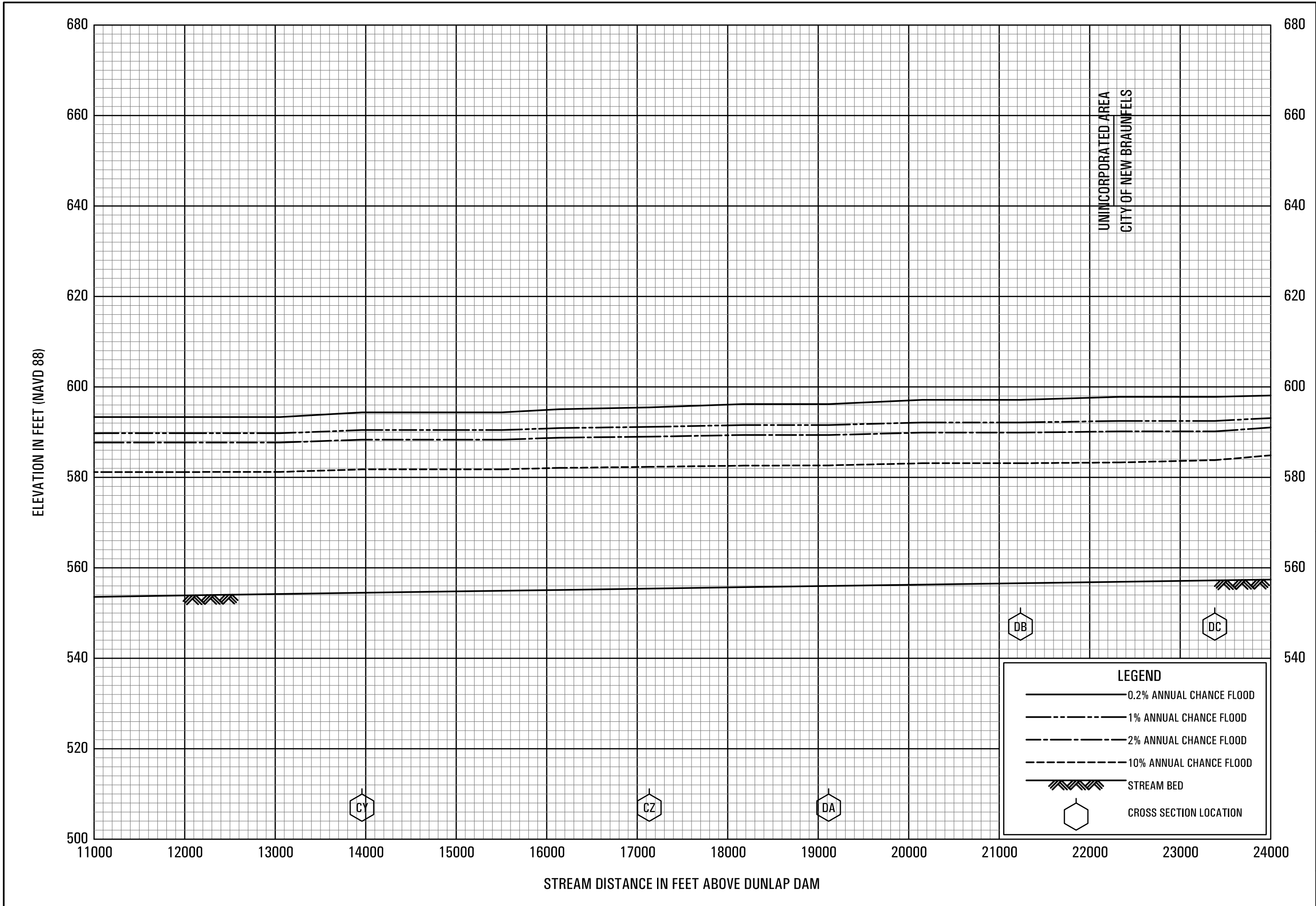
**GUADALUPE RIVER**

**FEDERAL EMERGENCY MANAGEMENT AGENCY  
GUADALUPE COUNTY, TX  
AND INCORPORATED AREAS**



**FLOOD PROFILES**  
**GUADALUPE RIVER**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**GUADALUPE COUNTY, TX**  
 AND INCORPORATED AREAS

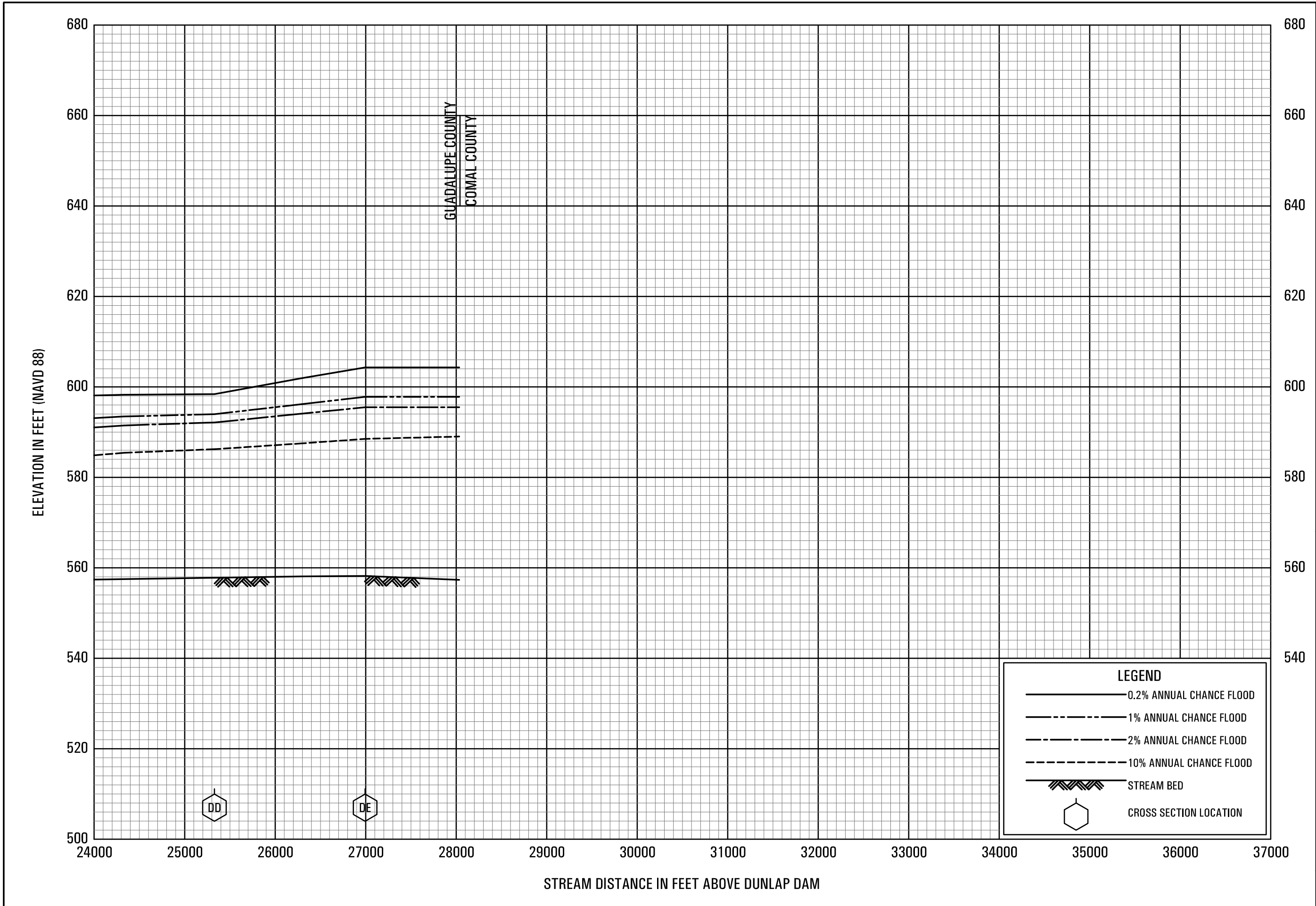


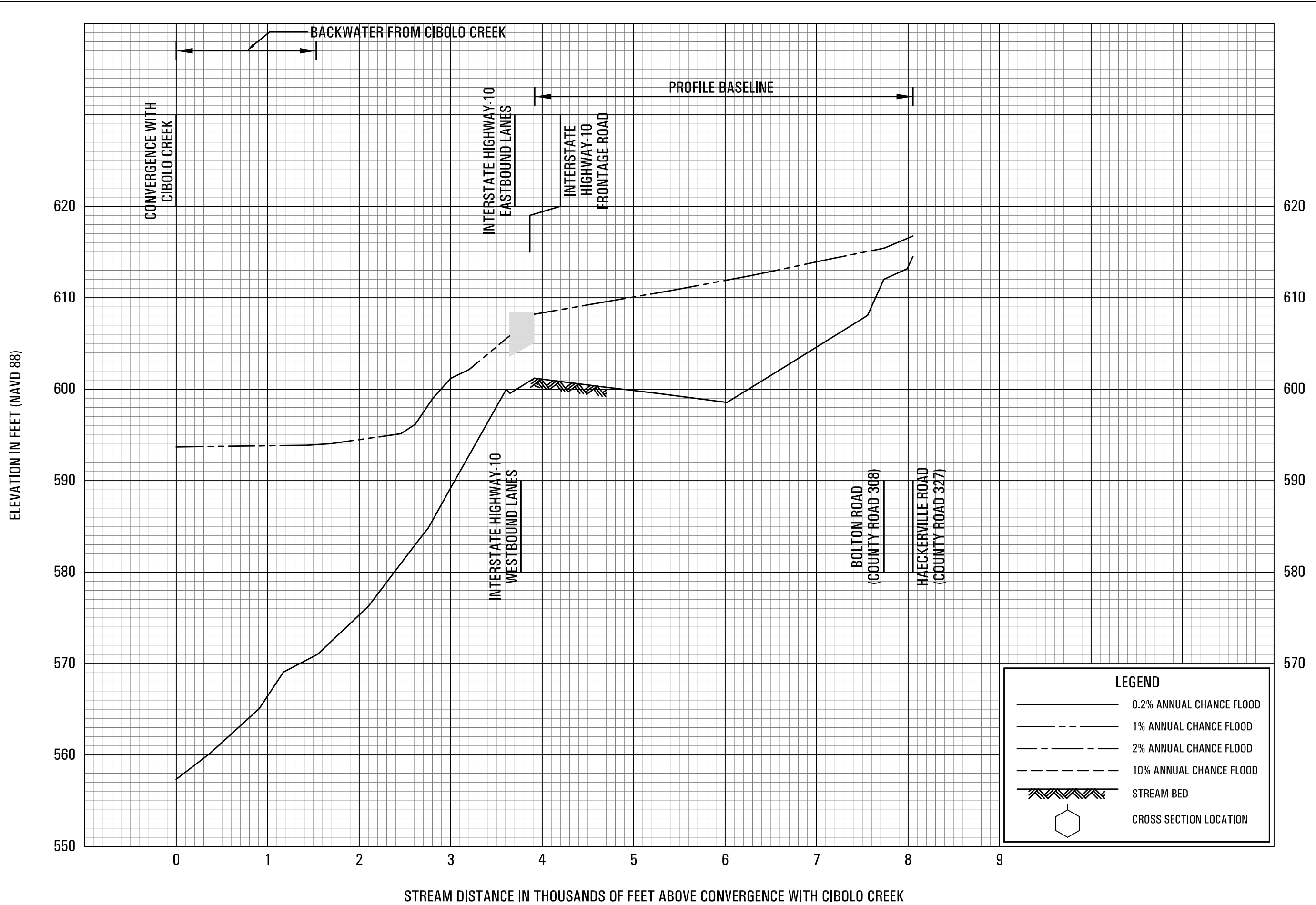
**FLOOD PROFILES**

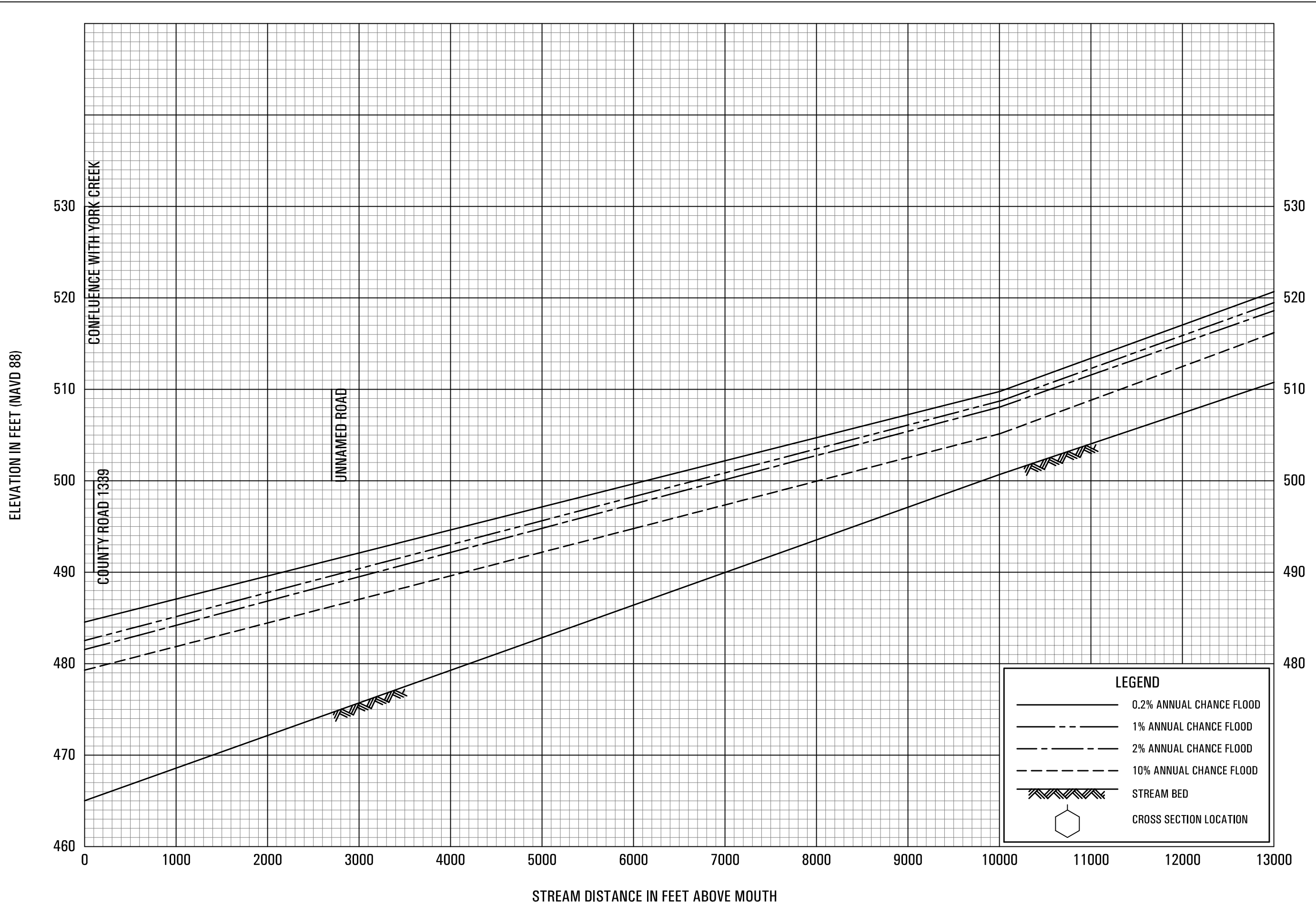
**GUADALUPE RIVER**

**FEDERAL EMERGENCY MANAGEMENT AGENCY  
GUADALUPE COUNTY, TX  
AND INCORPORATED AREAS**

**76P**



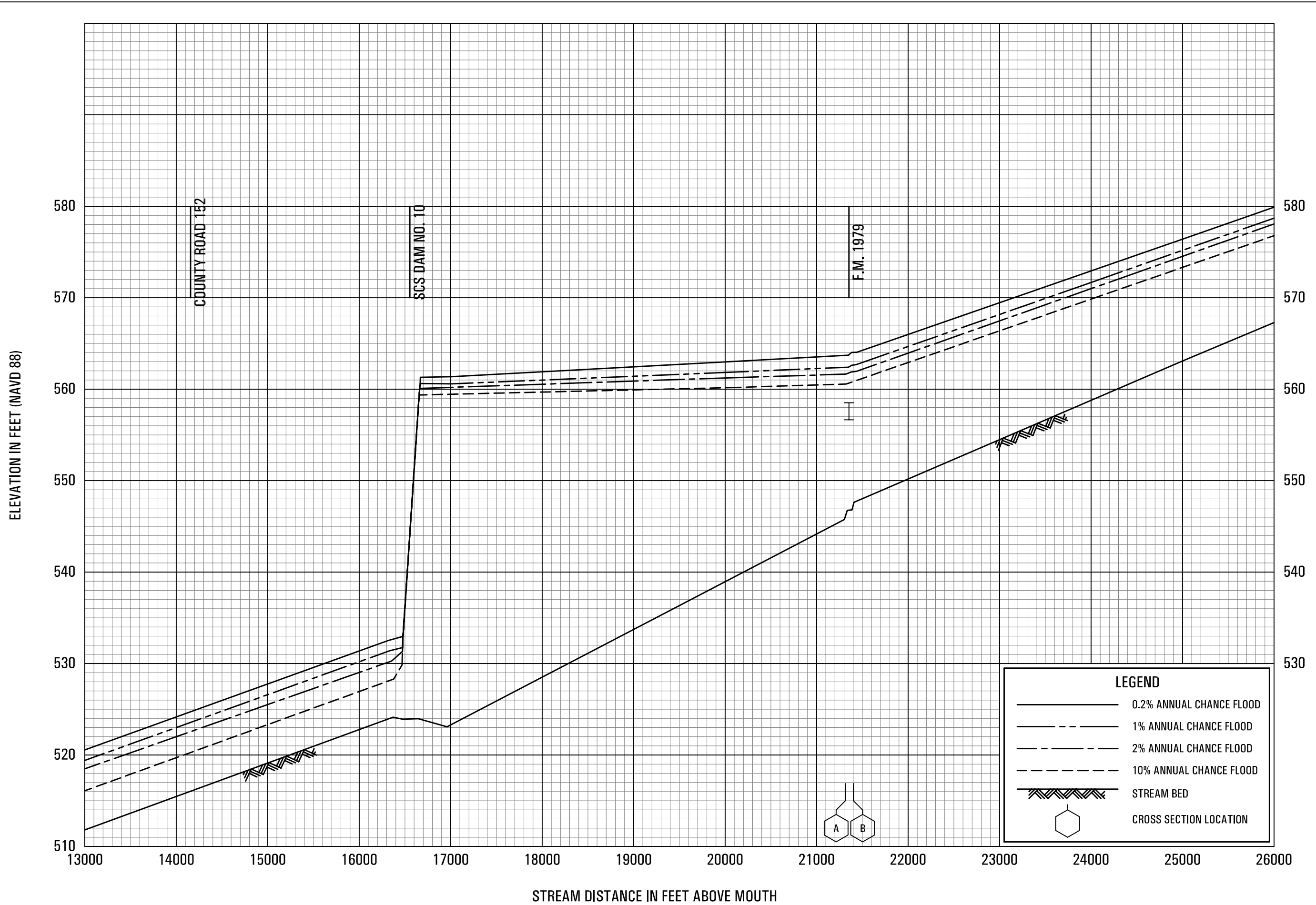




**FLOOD PROFILES**

**LONG CREEK**

**FEDERAL EMERGENCY MANAGEMENT AGENCY  
GUADALUPE COUNTY, TX  
AND INCORPORATED AREAS**



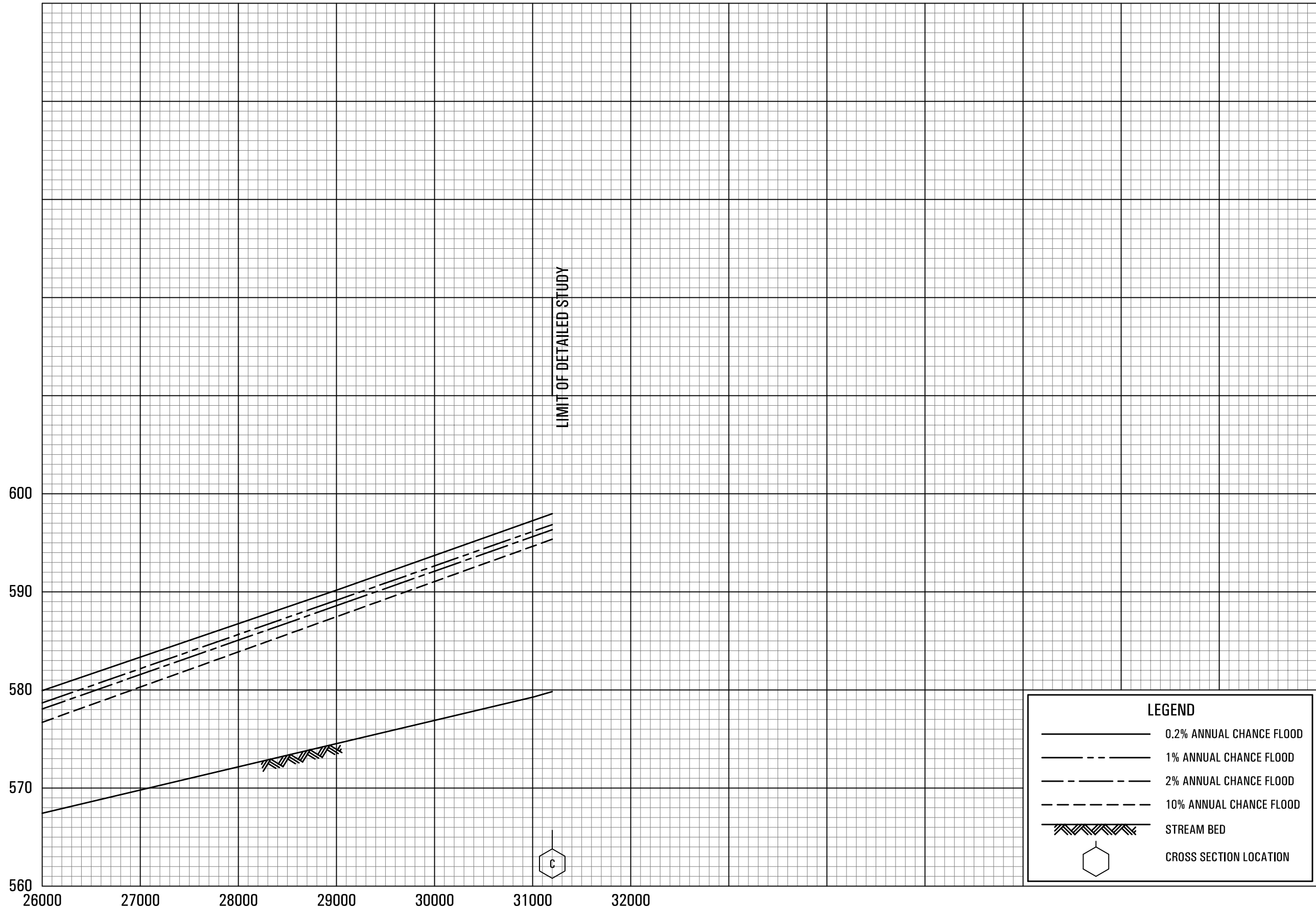
**FLOOD PROFILES**

LONG CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**GUADALUPE COUNTY, TX**  
 AND INCORPORATED AREAS



ELEVATION IN FEET (NAVD 88)



STREAM DISTANCE IN FEET ABOVE MOUTH

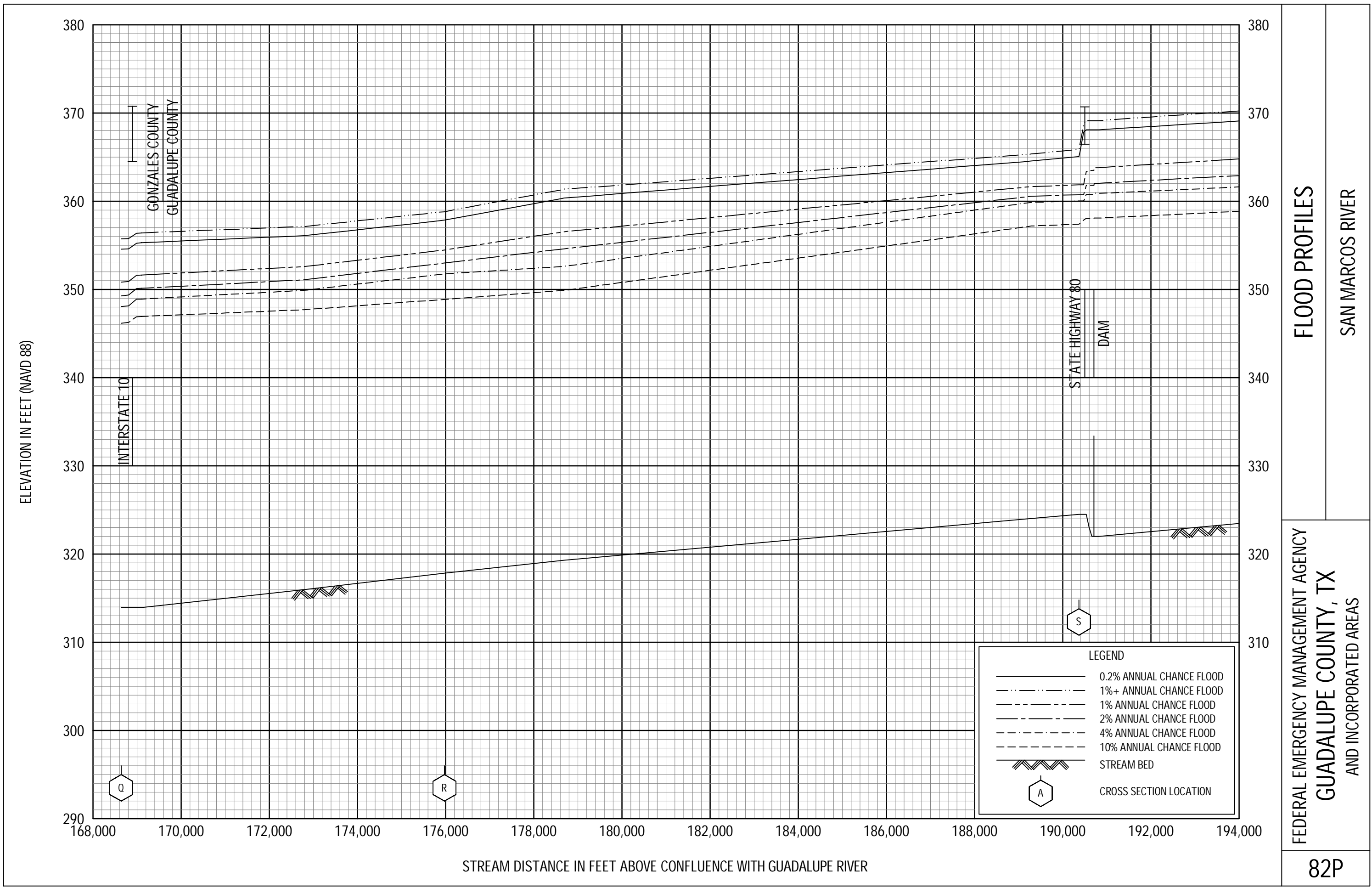
**LEGEND**

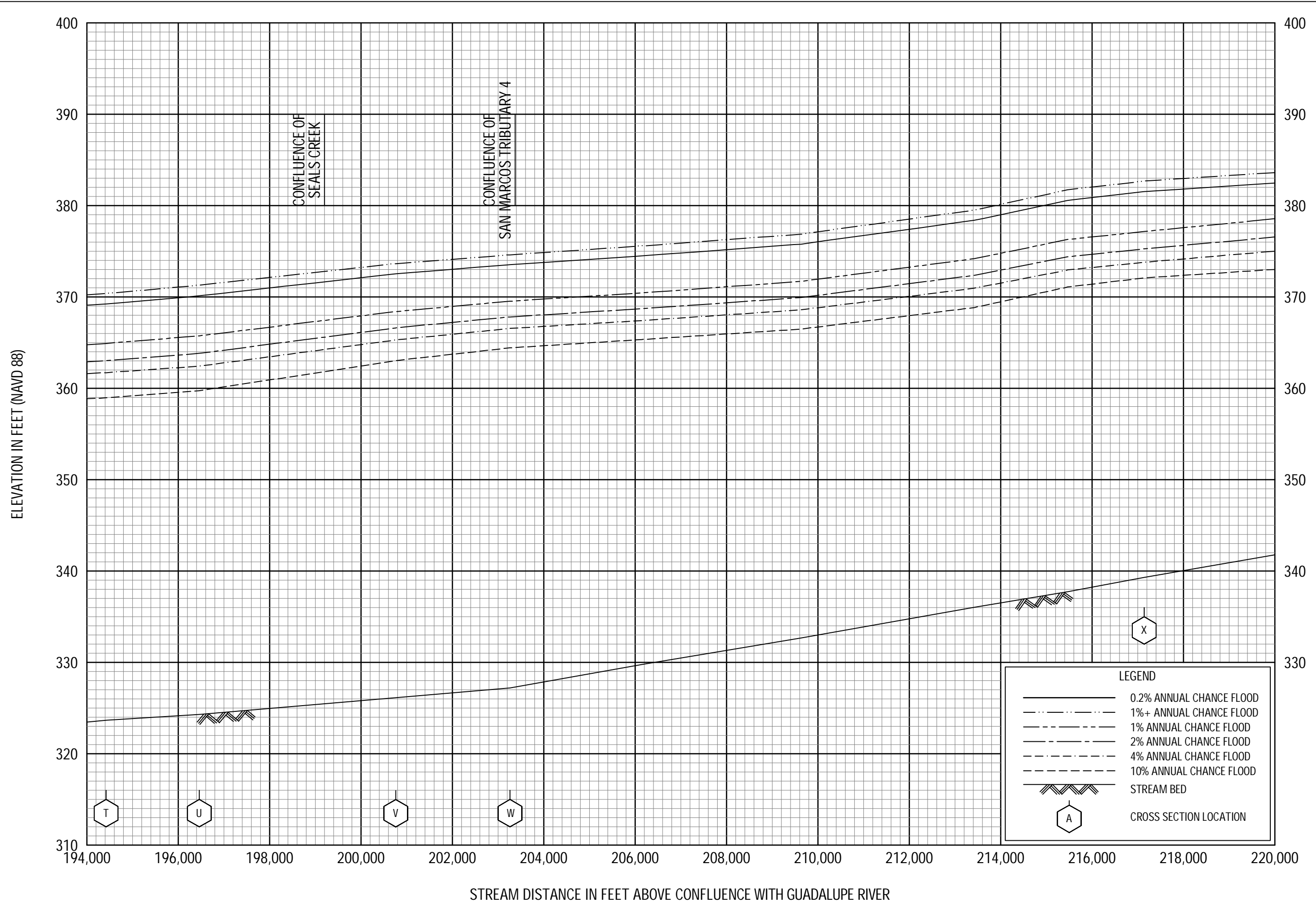
- 0.2% ANNUAL CHANCE FLOOD
- 1% ANNUAL CHANCE FLOOD
- 2% ANNUAL CHANCE FLOOD
- 10% ANNUAL CHANCE FLOOD
- STREAM BED
- CROSS SECTION LOCATION

**FLOOD PROFILES**

LONG CREEK

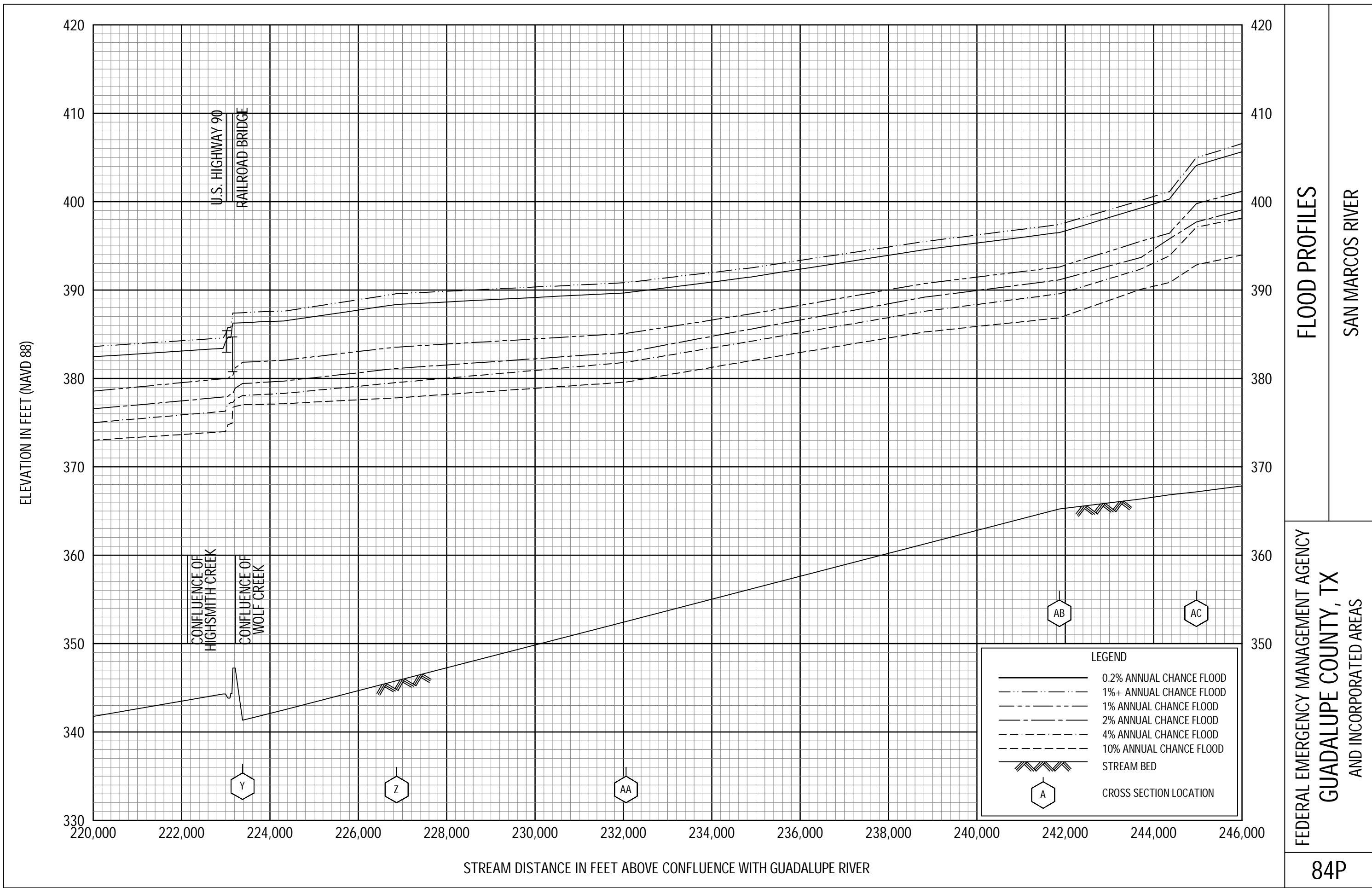
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**GUADALUPE COUNTY, TX**  
AND INCORPORATED AREAS





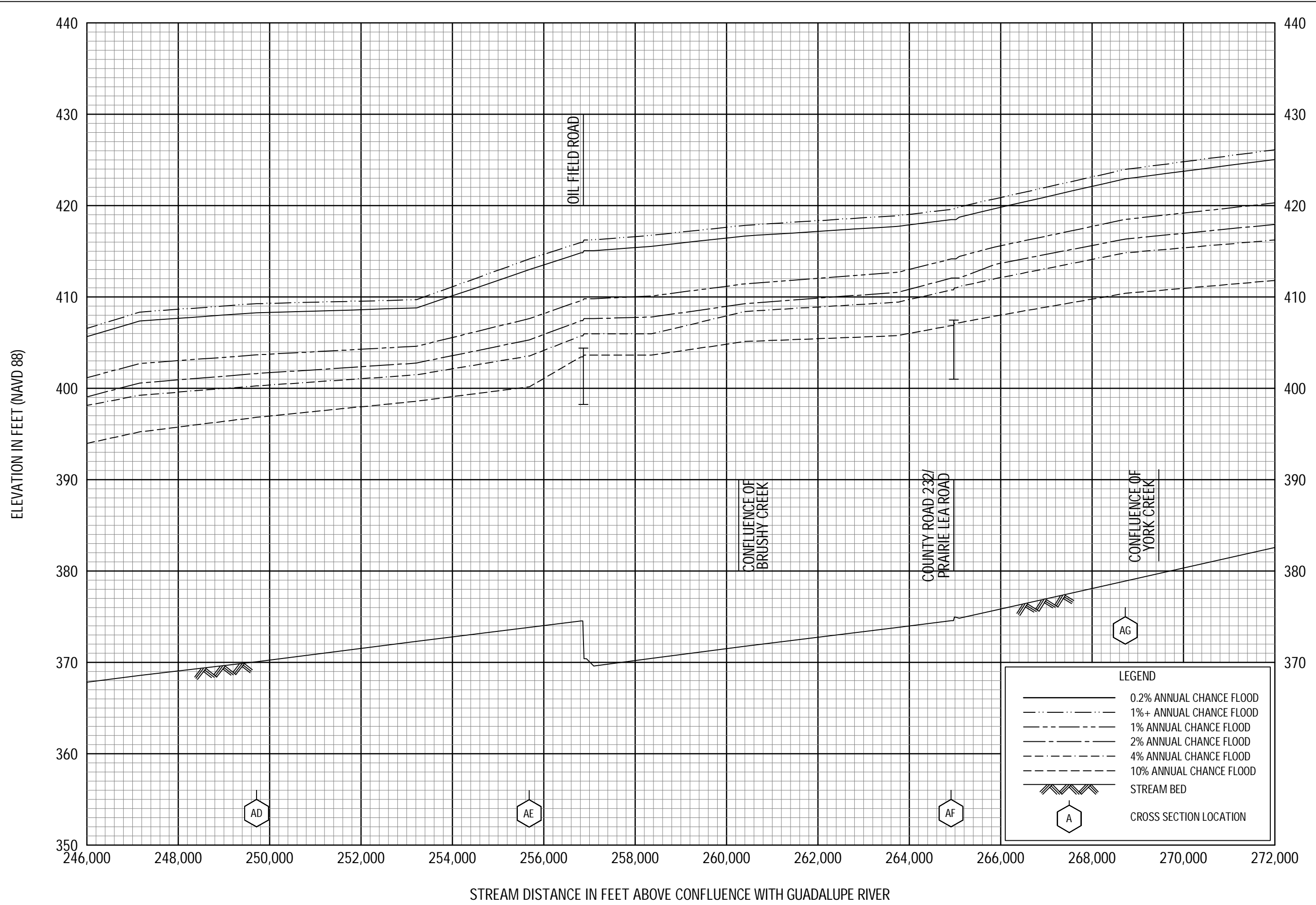
**FLOOD PROFILES**  
SAN MARCOS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**GUADALUPE COUNTY, TX**  
AND INCORPORATED AREAS



FLOOD PROFILES  
SAN MARCOS RIVER

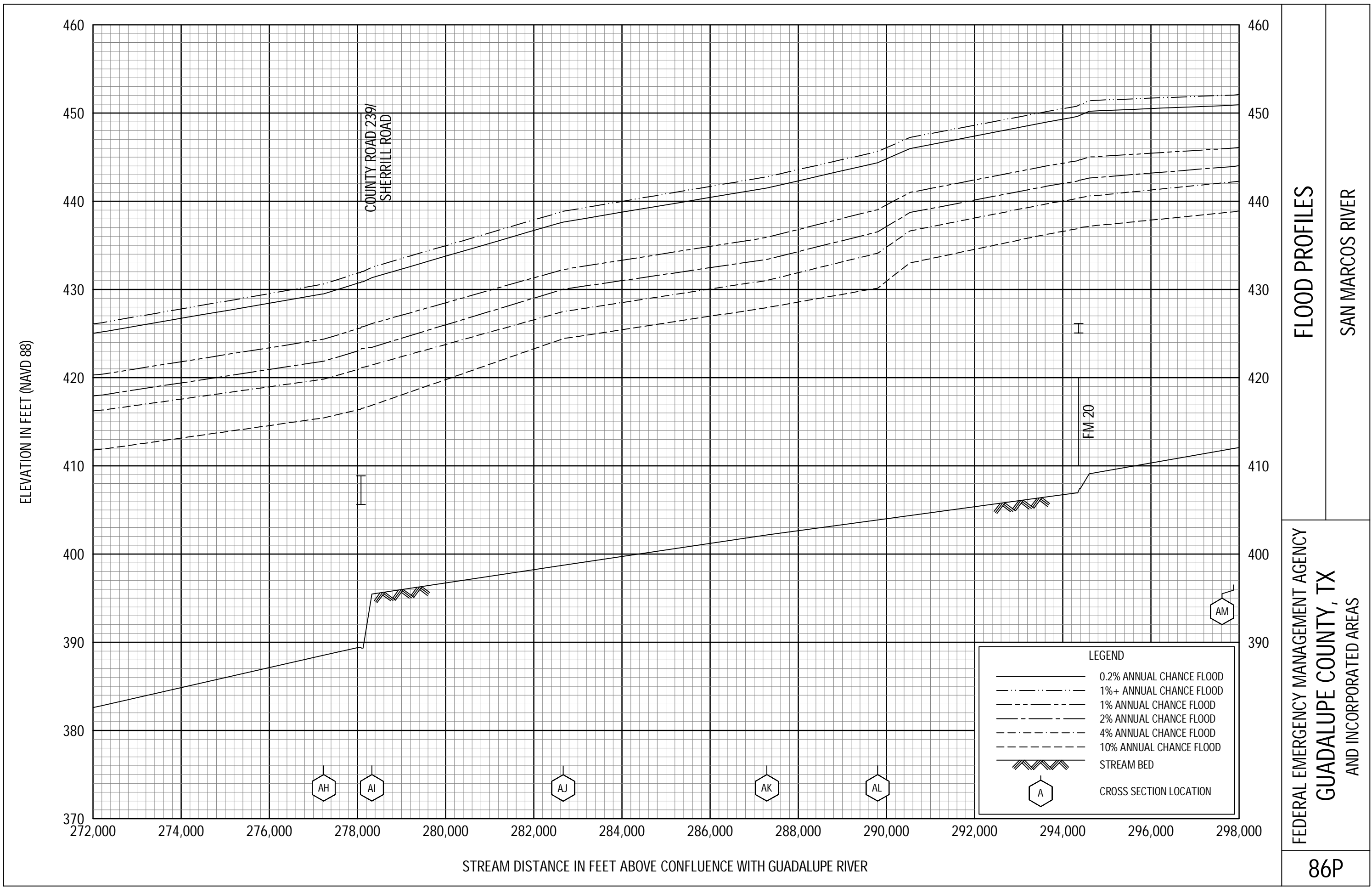
FEDERAL EMERGENCY MANAGEMENT AGENCY  
GUADALUPE COUNTY, TX  
AND INCORPORATED AREAS

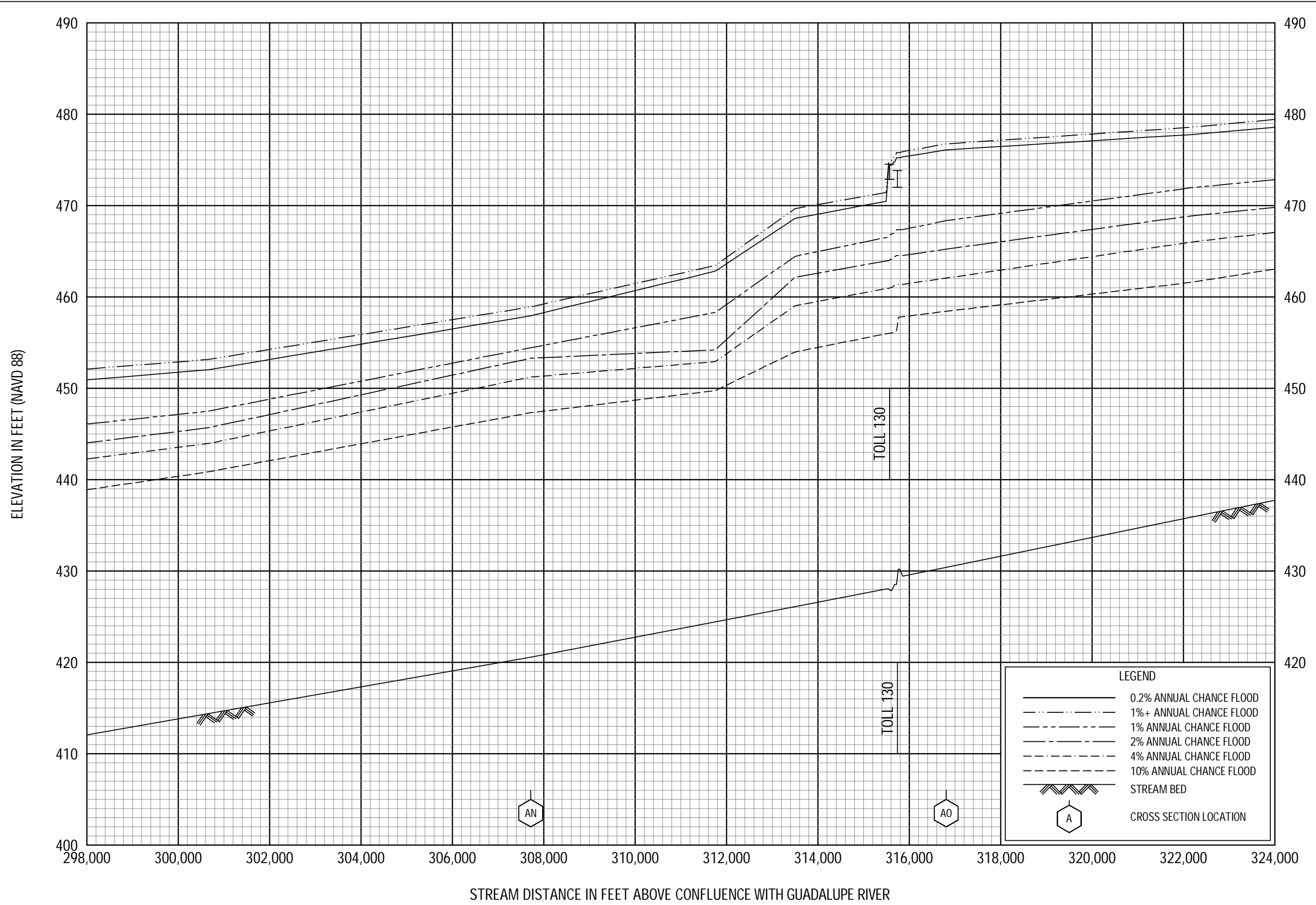


FLOOD PROFILES  
SAN MARCOS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY  
GUADALUPE COUNTY, TX  
AND INCORPORATED AREAS

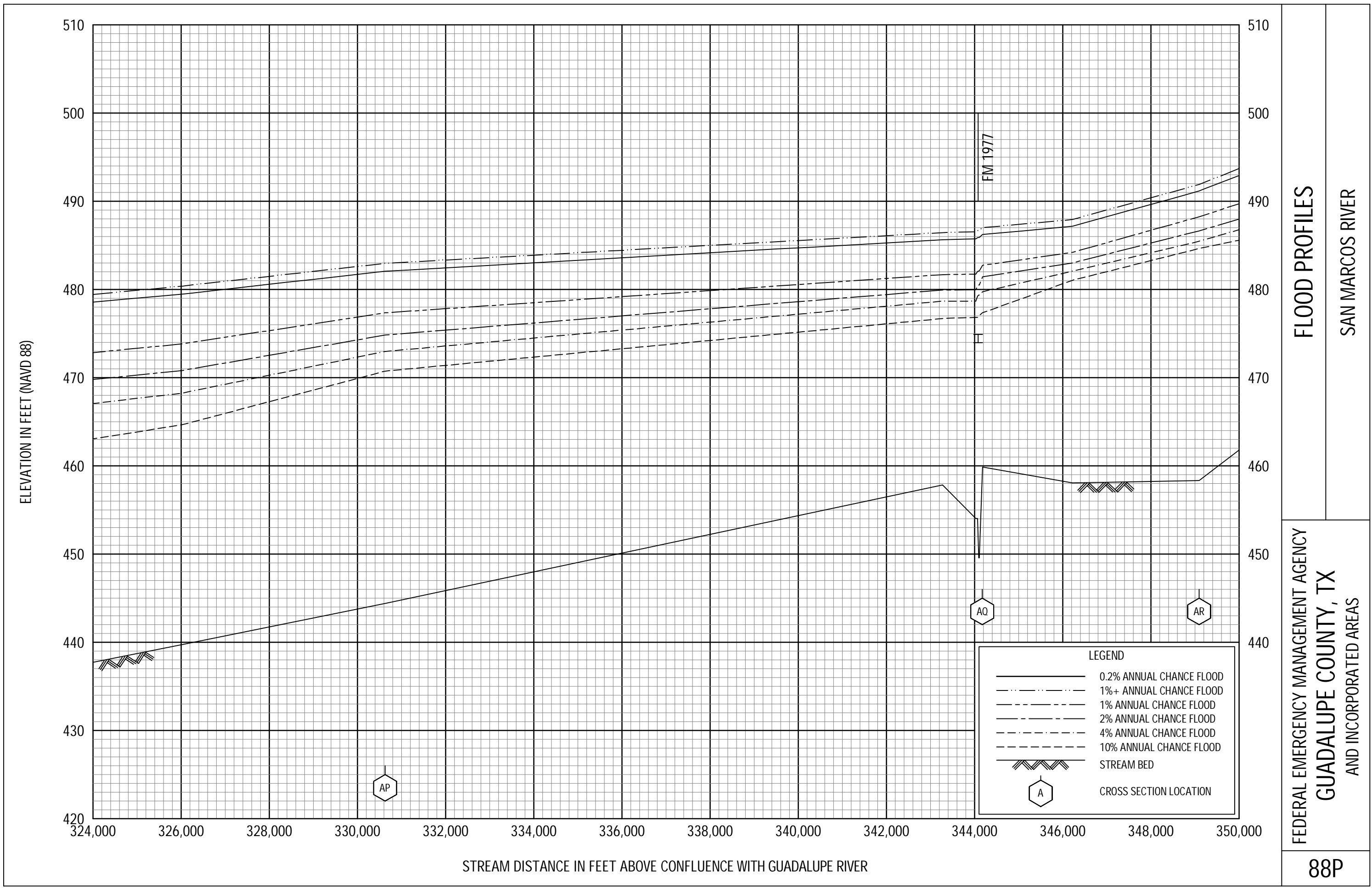
85P



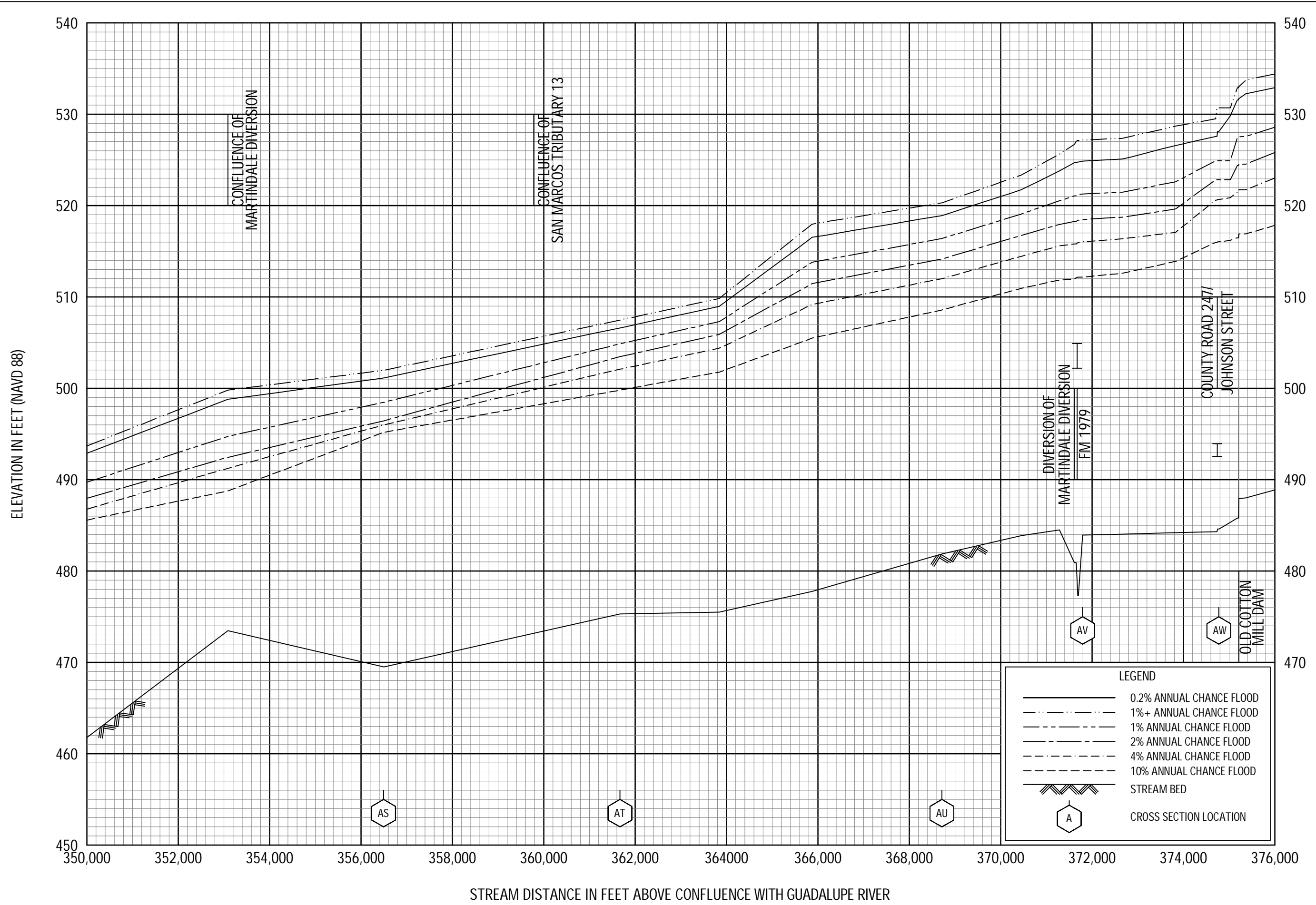


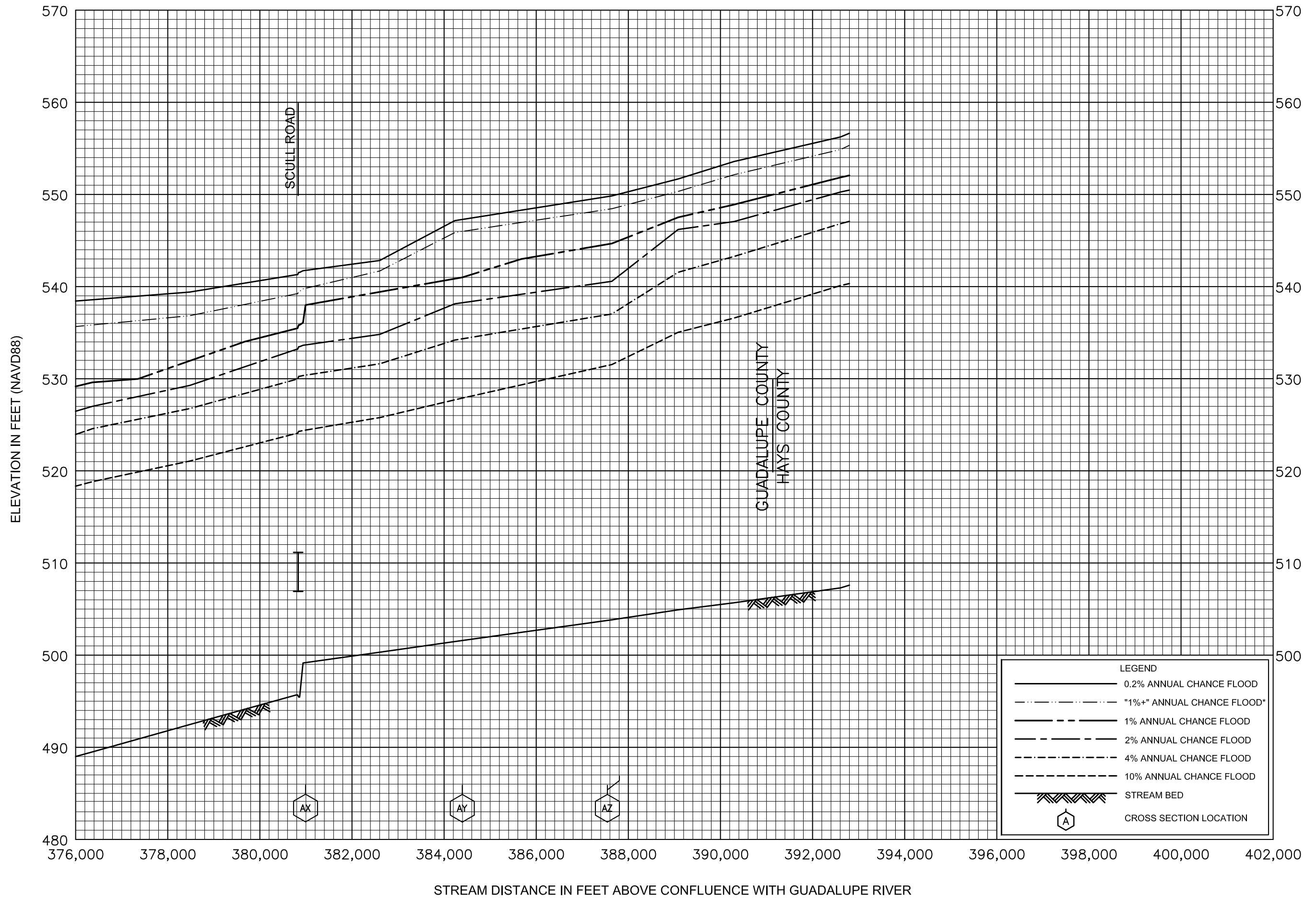
**FLOOD PROFILES**  
SAN MARCOS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**GUADALUPE COUNTY, TX**  
AND INCORPORATED AREAS





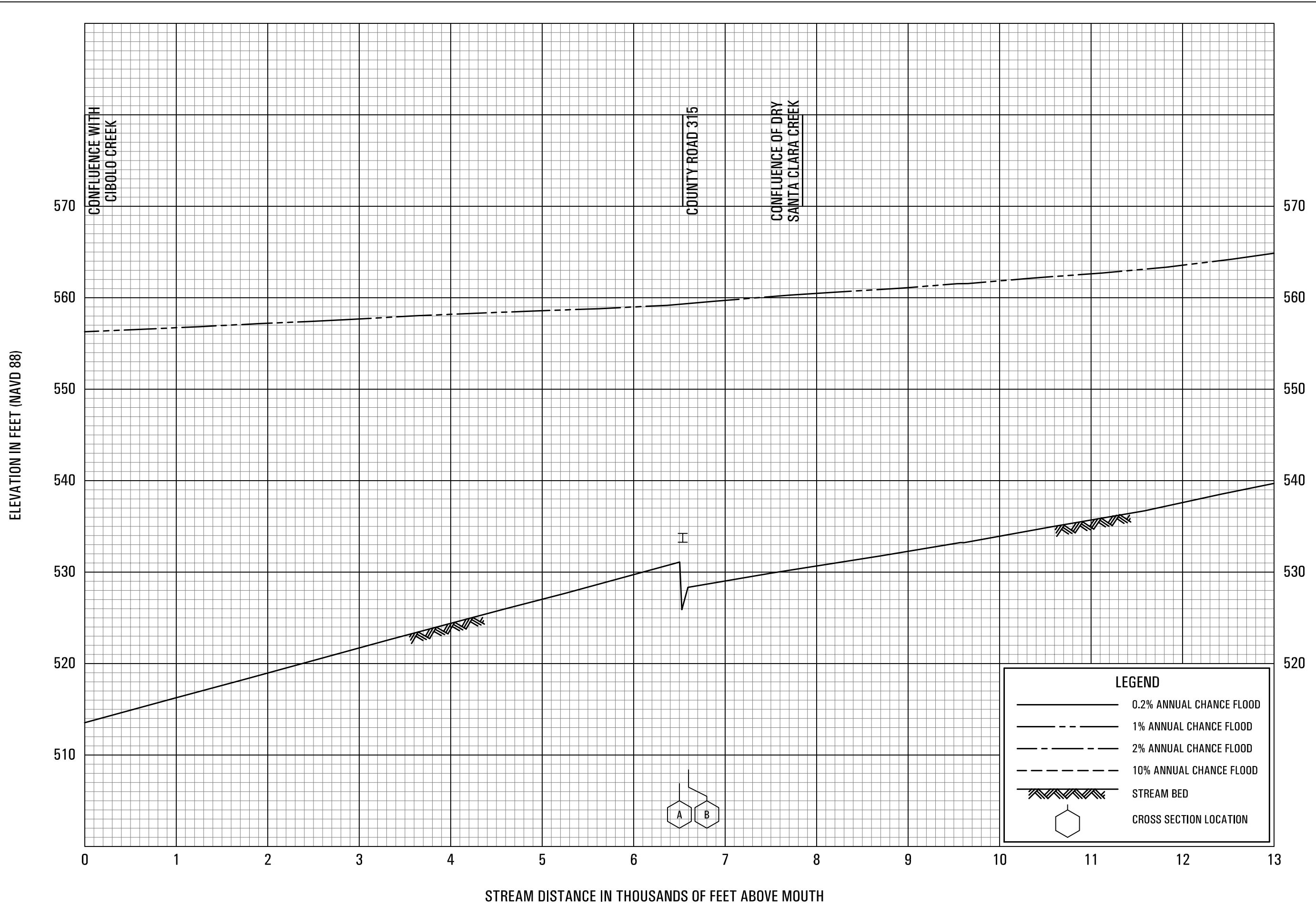




FLOOD PROFILES  
SAN MARCOS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY  
GUADALUPE COUNTY, TX  
AND INCORPORATED AREAS

90P



**FLOOD PROFILES**

**SANTA CLARA CREEK**

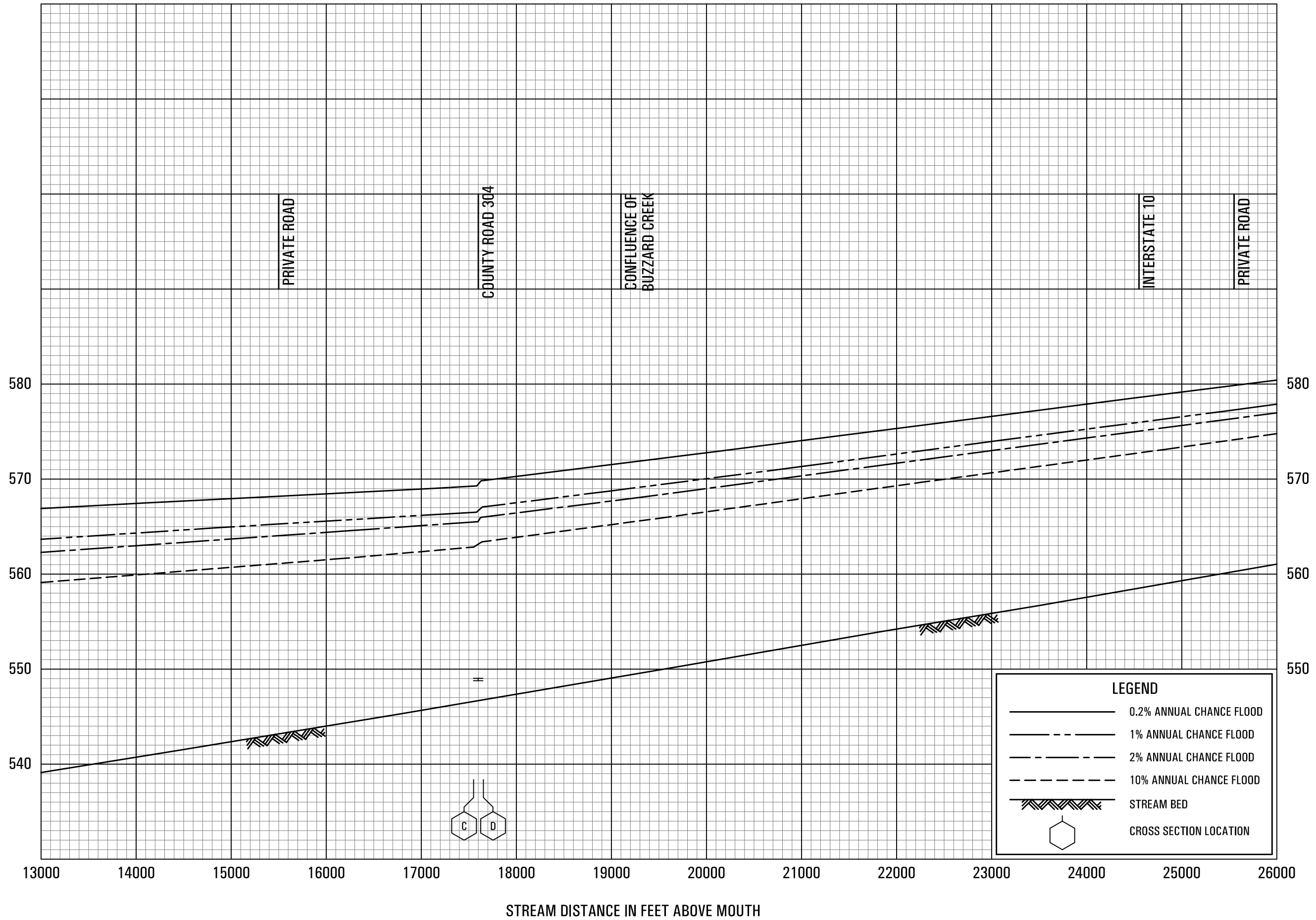
**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**GUADALUPE COUNTY, TX**

**AND INCORPORATED AREAS**

**91P**

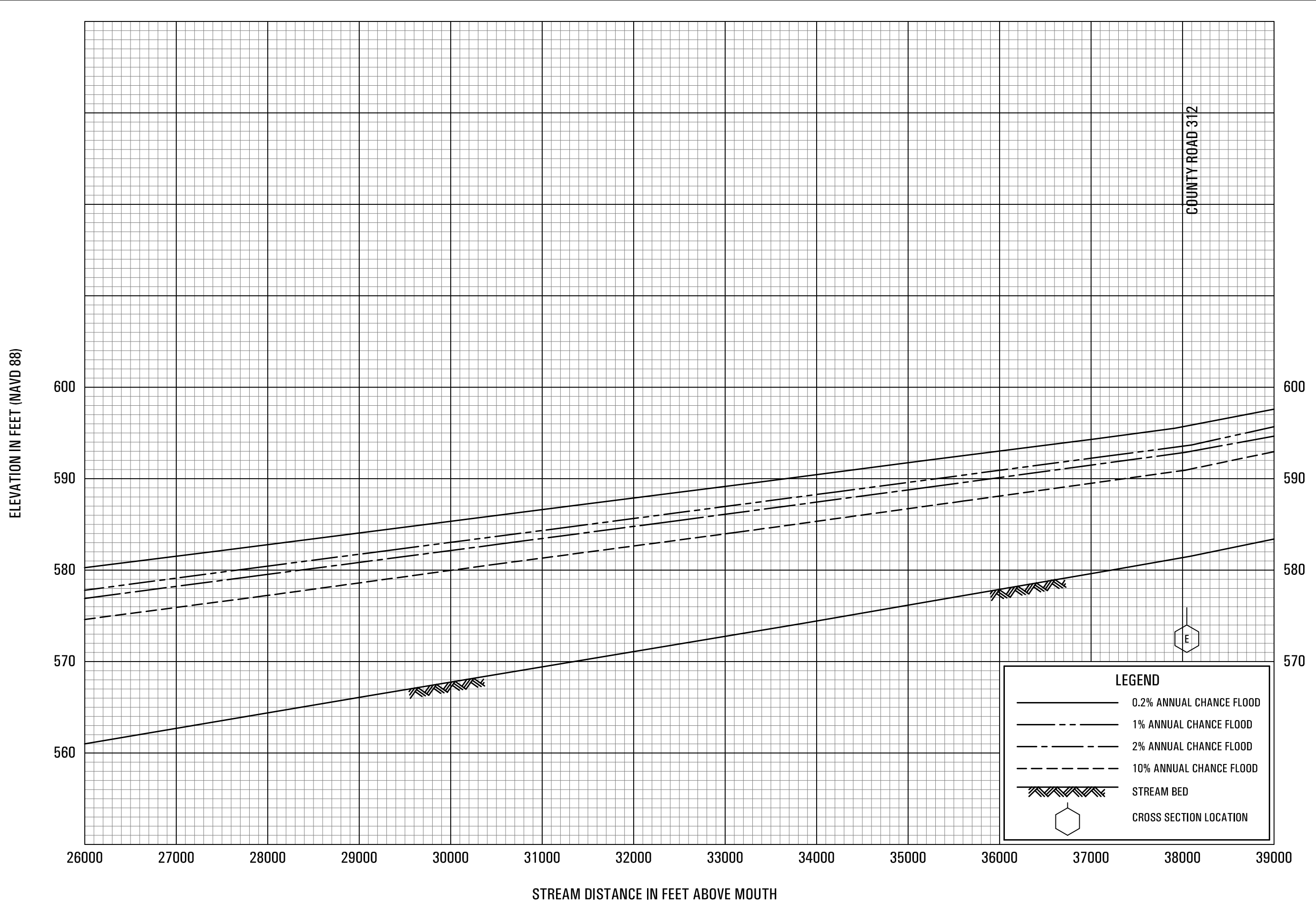
ELEVATION IN FEET (NAVD 88)



FLOOD PROFILES

SANTA CLARA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
GUADALUPE COUNTY, TX  
AND INCORPORATED AREAS

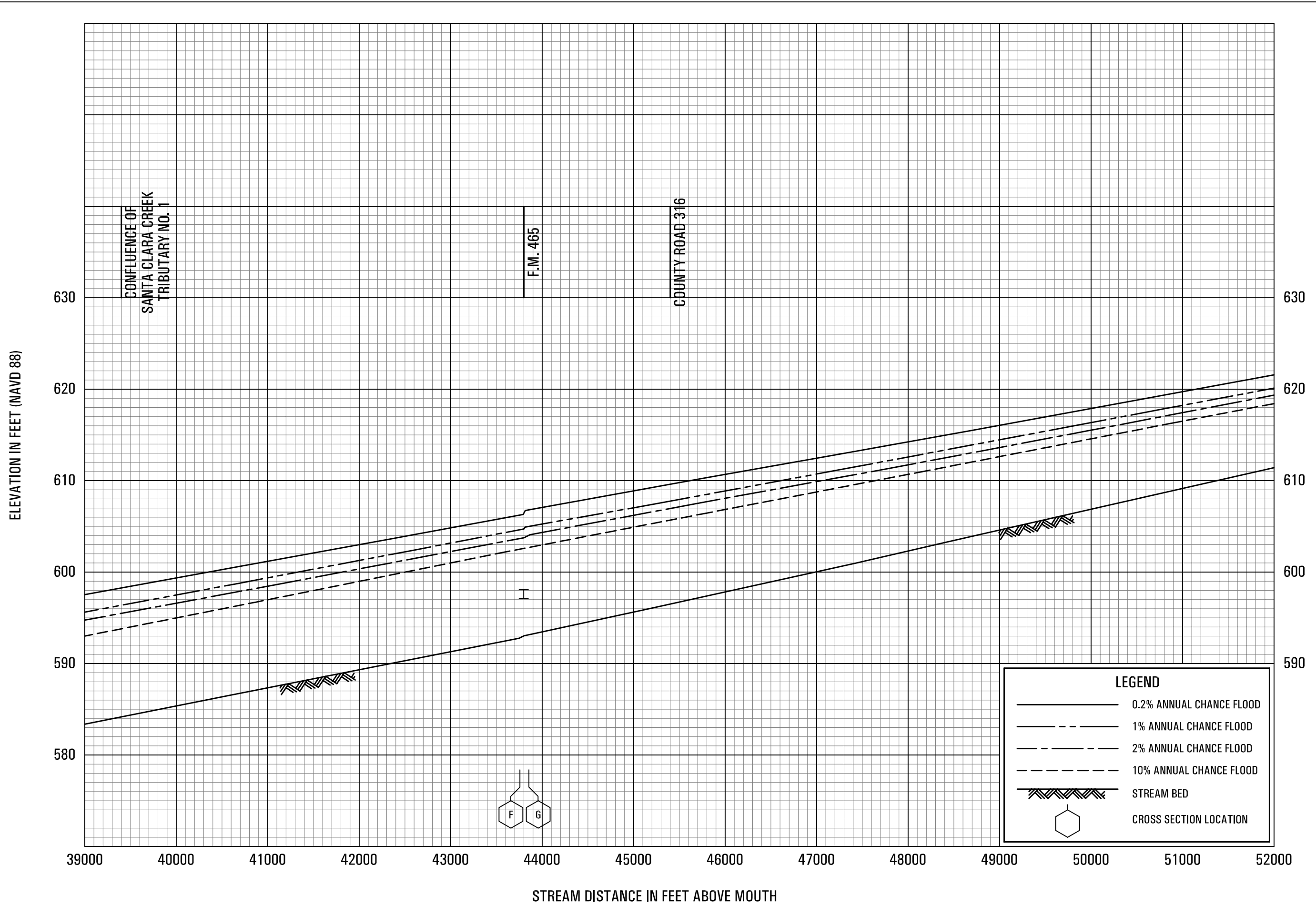


**FLOOD PROFILES**

**SANTA CLARA CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY

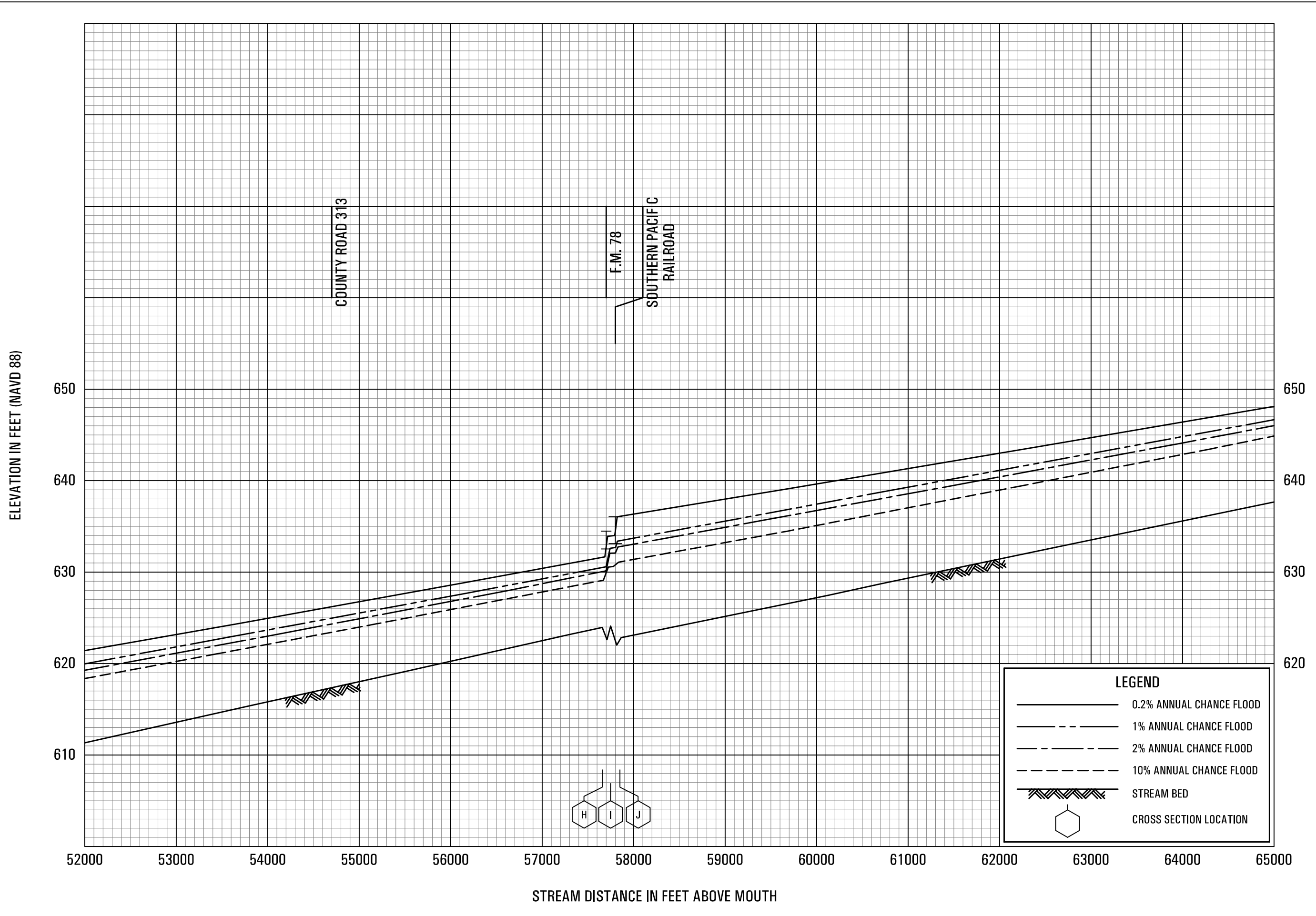
**GUADALUPE COUNTY, TX  
AND INCORPORATED AREAS**



**FLOOD PROFILES**

**SANTA CLARA CREEK**

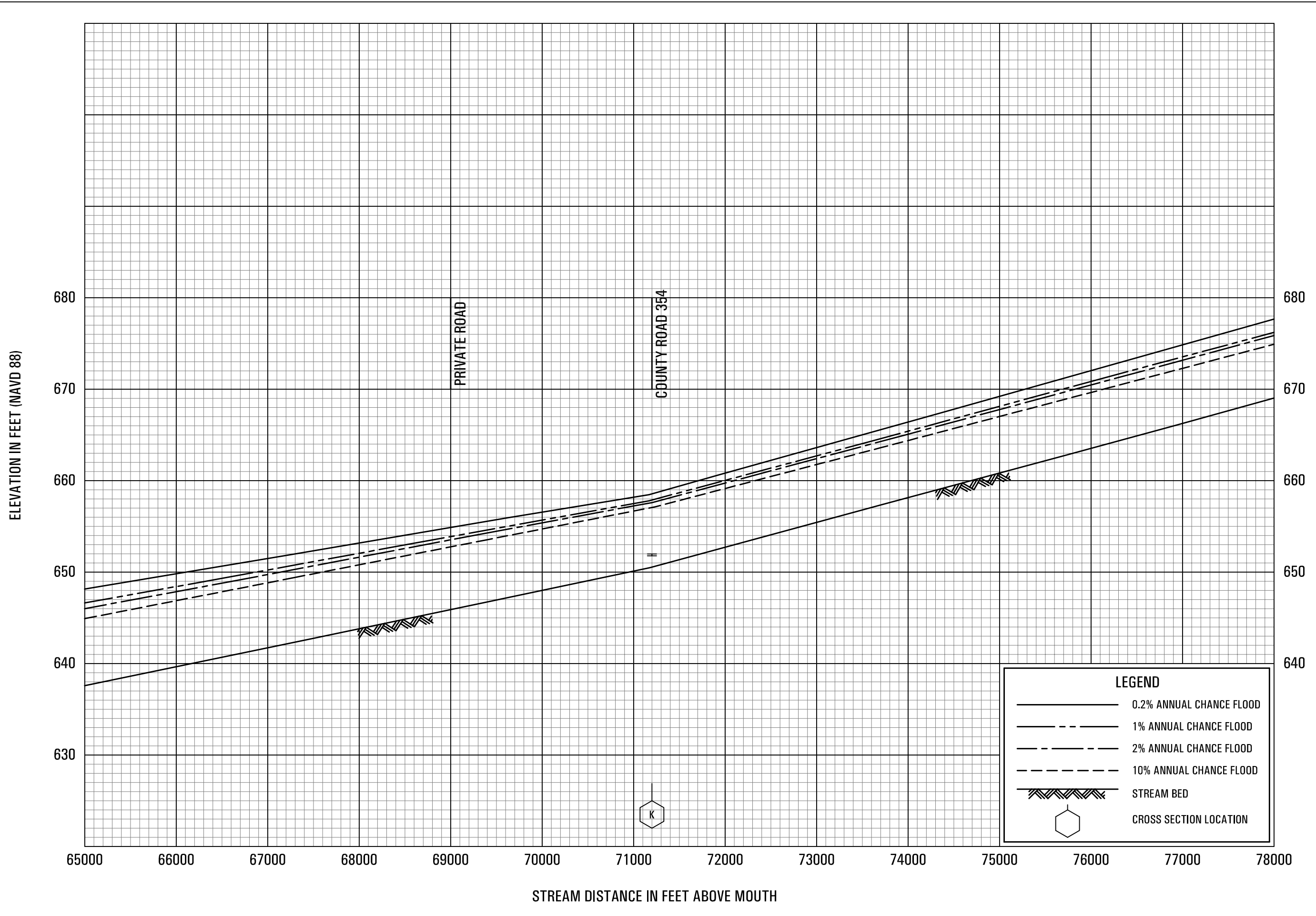
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**GUADALUPE COUNTY, TX**  
 AND INCORPORATED AREAS



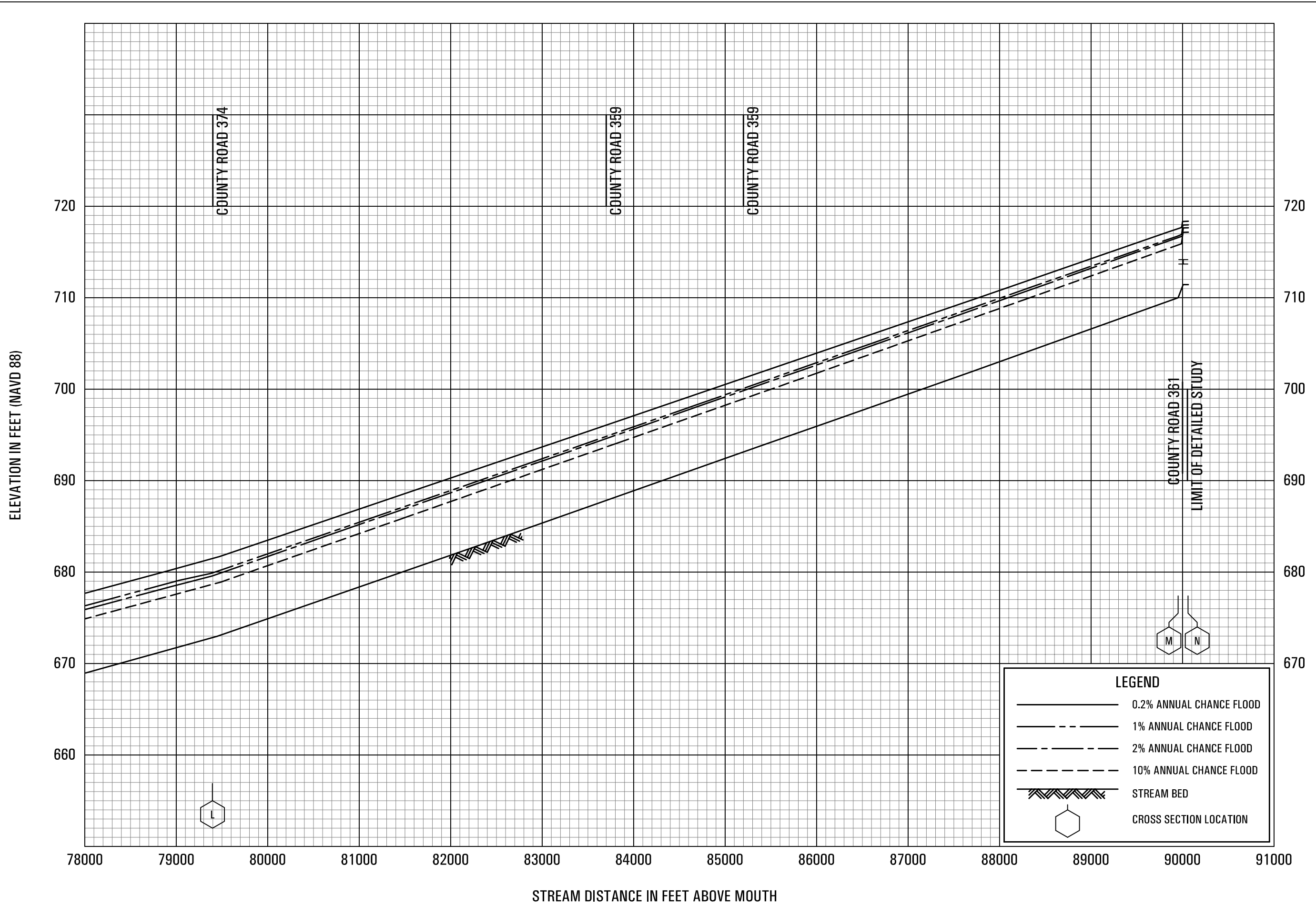
**FLOOD PROFILES**

**SANTA CLARA CREEK**

**FEDERAL EMERGENCY MANAGEMENT AGENCY  
GUADALUPE COUNTY, TX  
AND INCORPORATED AREAS**



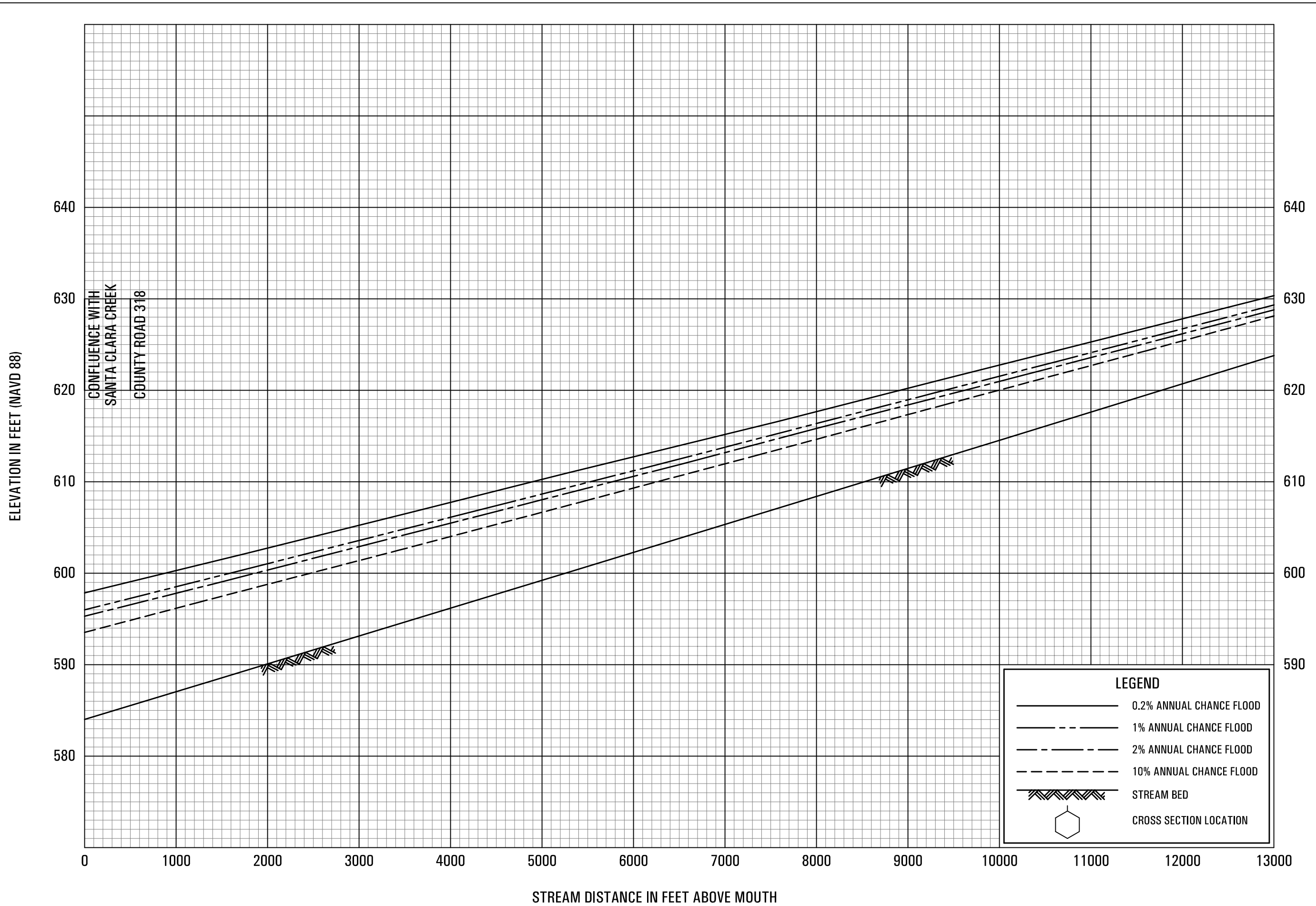




**FLOOD PROFILES**

SANTA CLARA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**GUADALUPE COUNTY, TX**  
 AND INCORPORATED AREAS



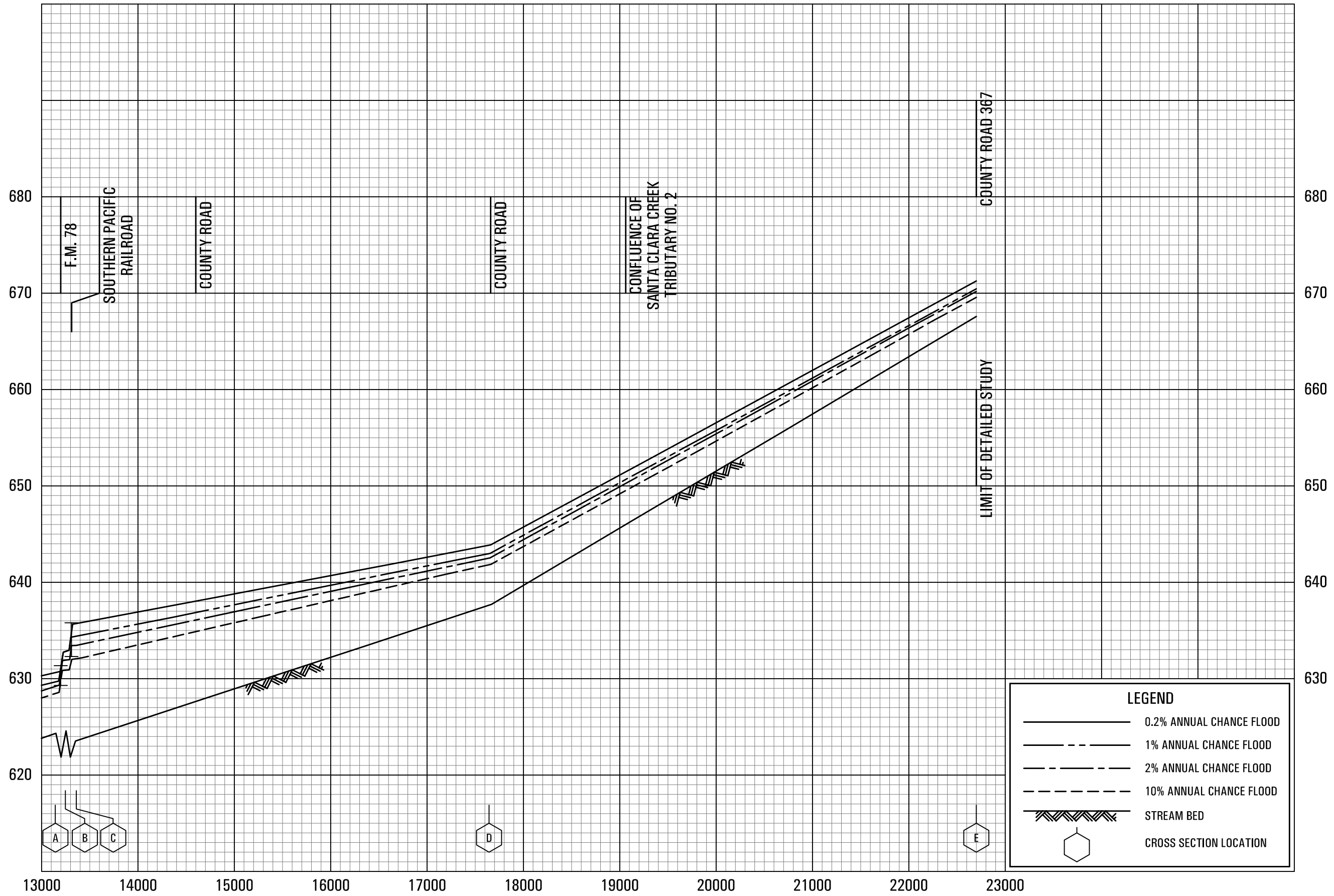
**FLOOD PROFILES**

**SANTA CLARA CREEK TRIBUTARY NO. 1**

**FEDERAL EMERGENCY MANAGEMENT AGENCY  
GUADALUPE COUNTY, TX  
AND INCORPORATED AREAS**

**98P**

ELEVATION IN FEET (NAVD 88)

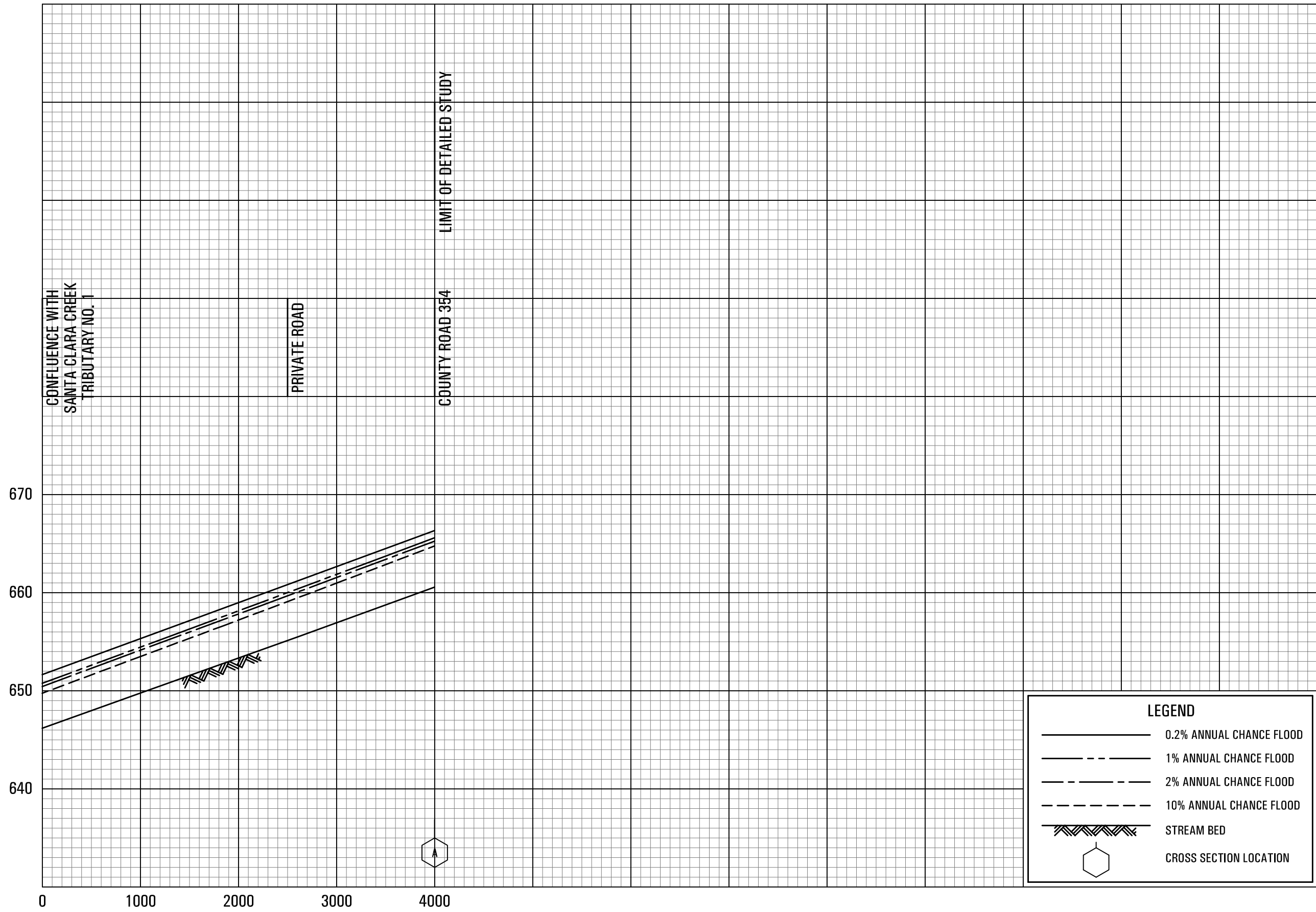


FLOOD PROFILES

SANTA CLARA CREEK TRIBUTARY NO. 1

FEDERAL EMERGENCY MANAGEMENT AGENCY  
GUADALUPE COUNTY, TX  
AND INCORPORATED AREAS

ELEVATION IN FEET (NAVD 88)

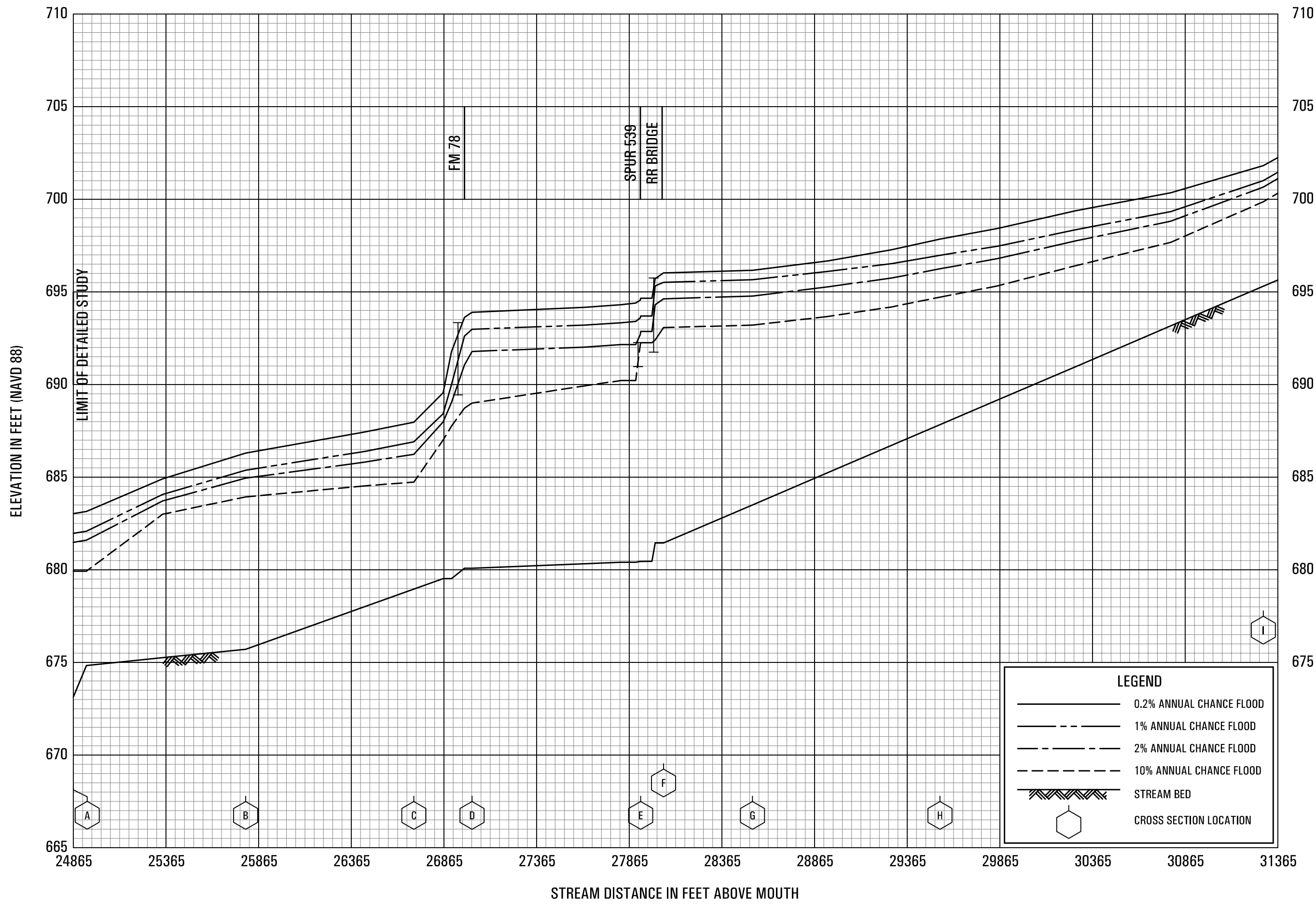


STREAM DISTANCE IN FEET ABOVE MOUTH

FLOOD PROFILES

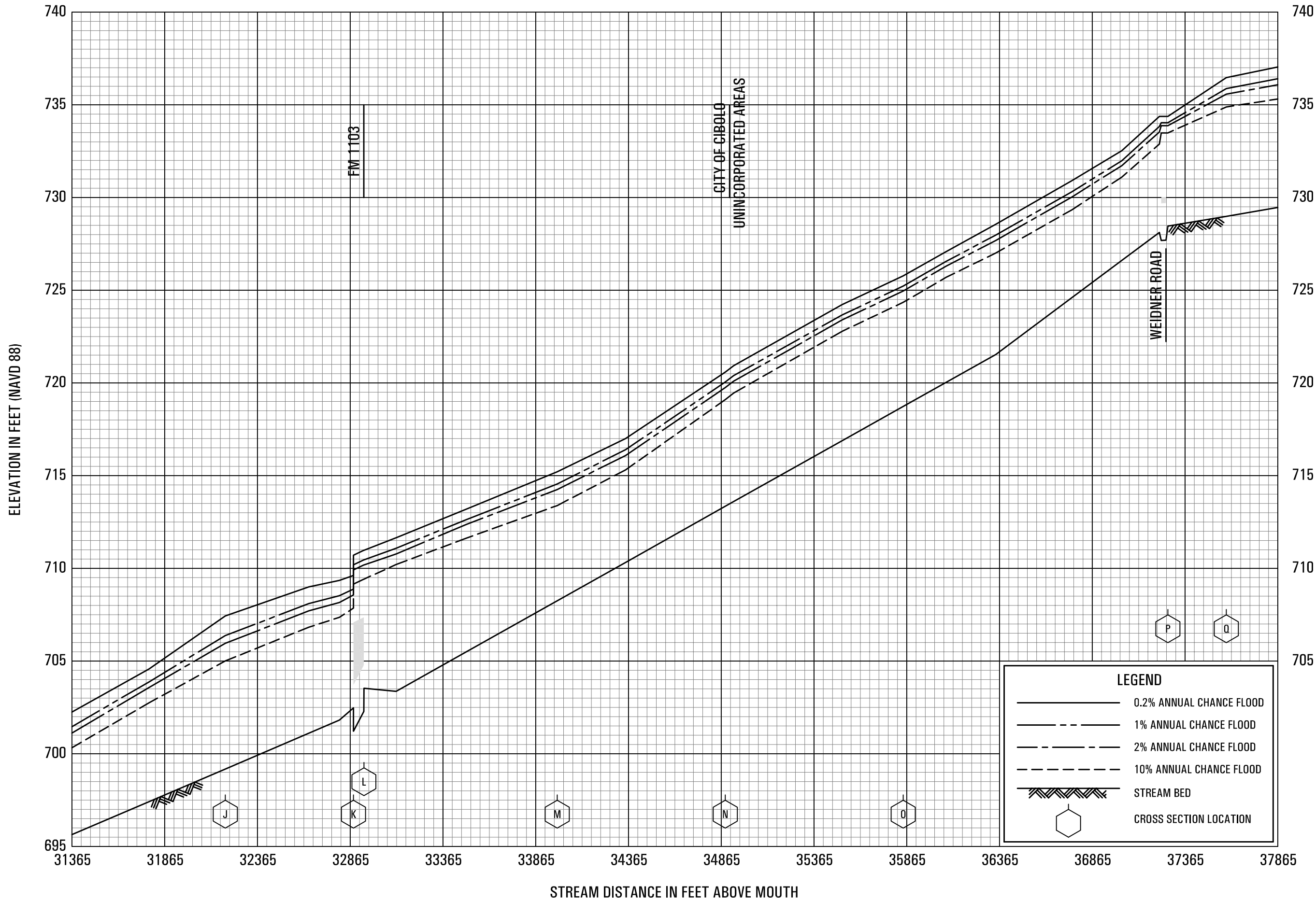
SANTA CLARA CREEK TRIBUTARY NO. 2

FEDERAL EMERGENCY MANAGEMENT AGENCY  
GUADALUPE COUNTY, TX  
AND INCORPORATED AREAS



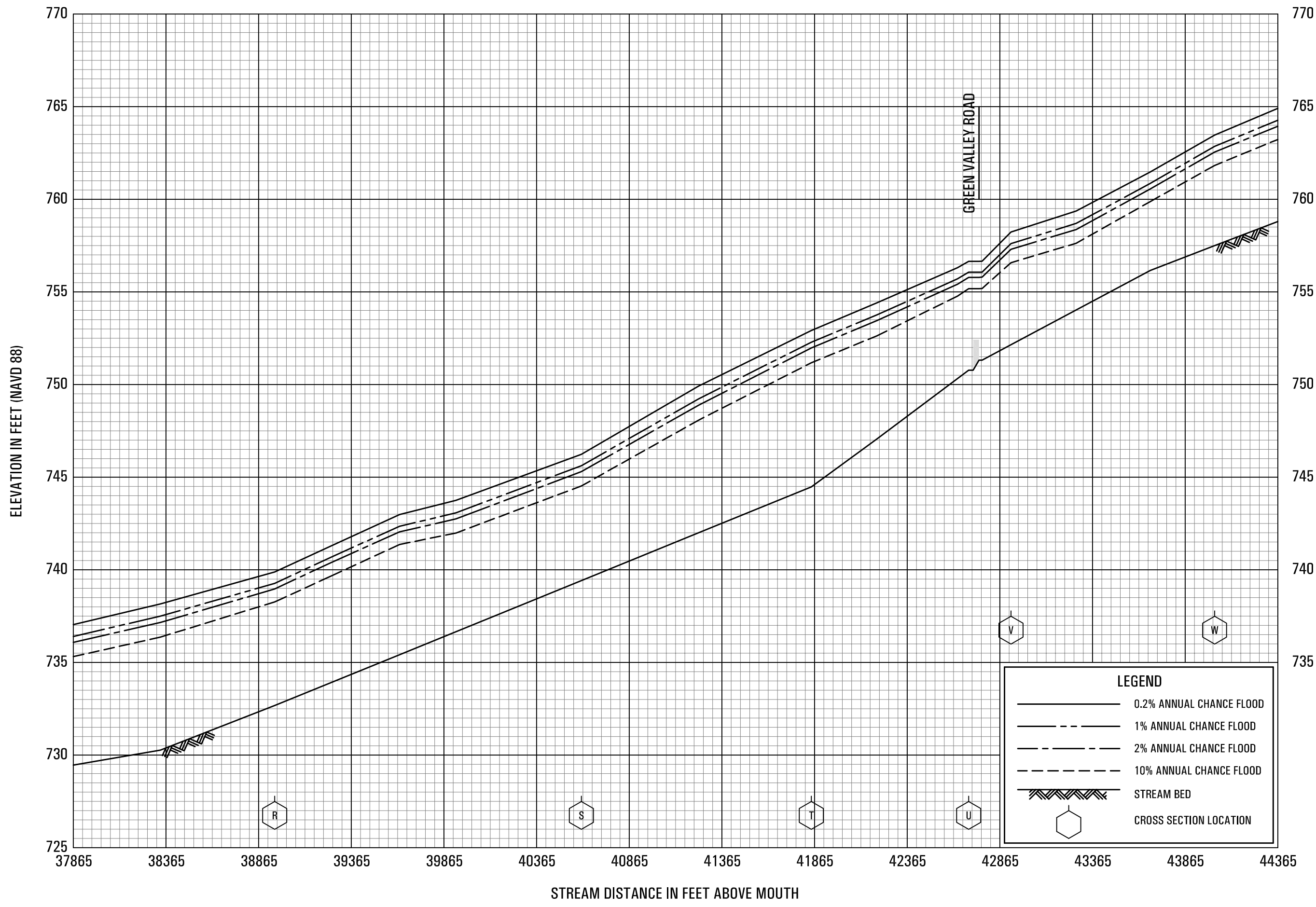
**FLOOD PROFILES**  
TOWN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**GUADALUPE COUNTY, TX**  
AND INCORPORATED AREAS



FEDERAL EMERGENCY MANAGEMENT AGENCY  
GUADALUPE COUNTY, TX  
AND INCORPORATED AREAS

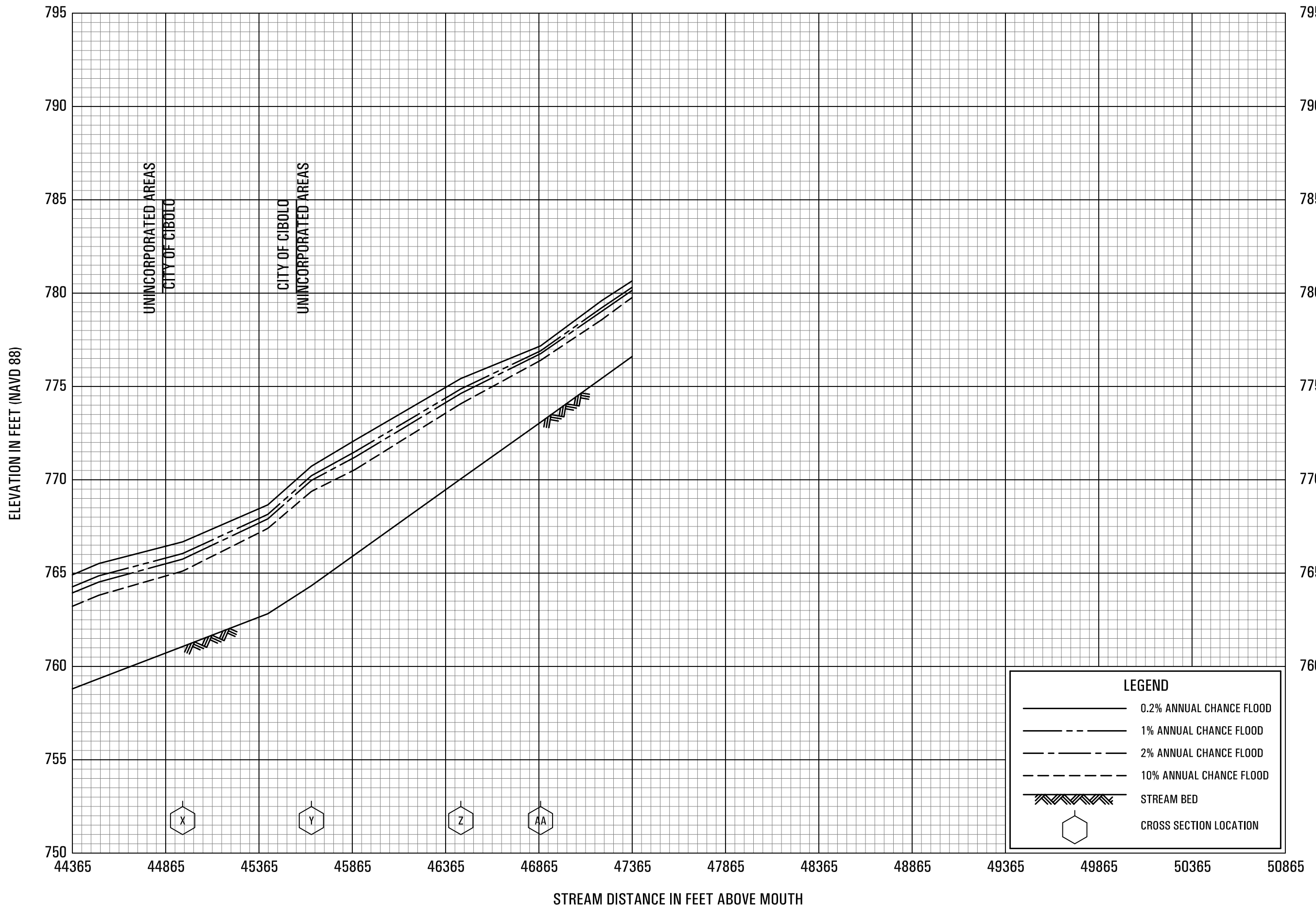
FLOOD PROFILES  
TOWN CREEK









**FLOOD PROFILES**

TOWN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**GUADALUPE COUNTY, TX**  
 AND INCORPORATED AREAS



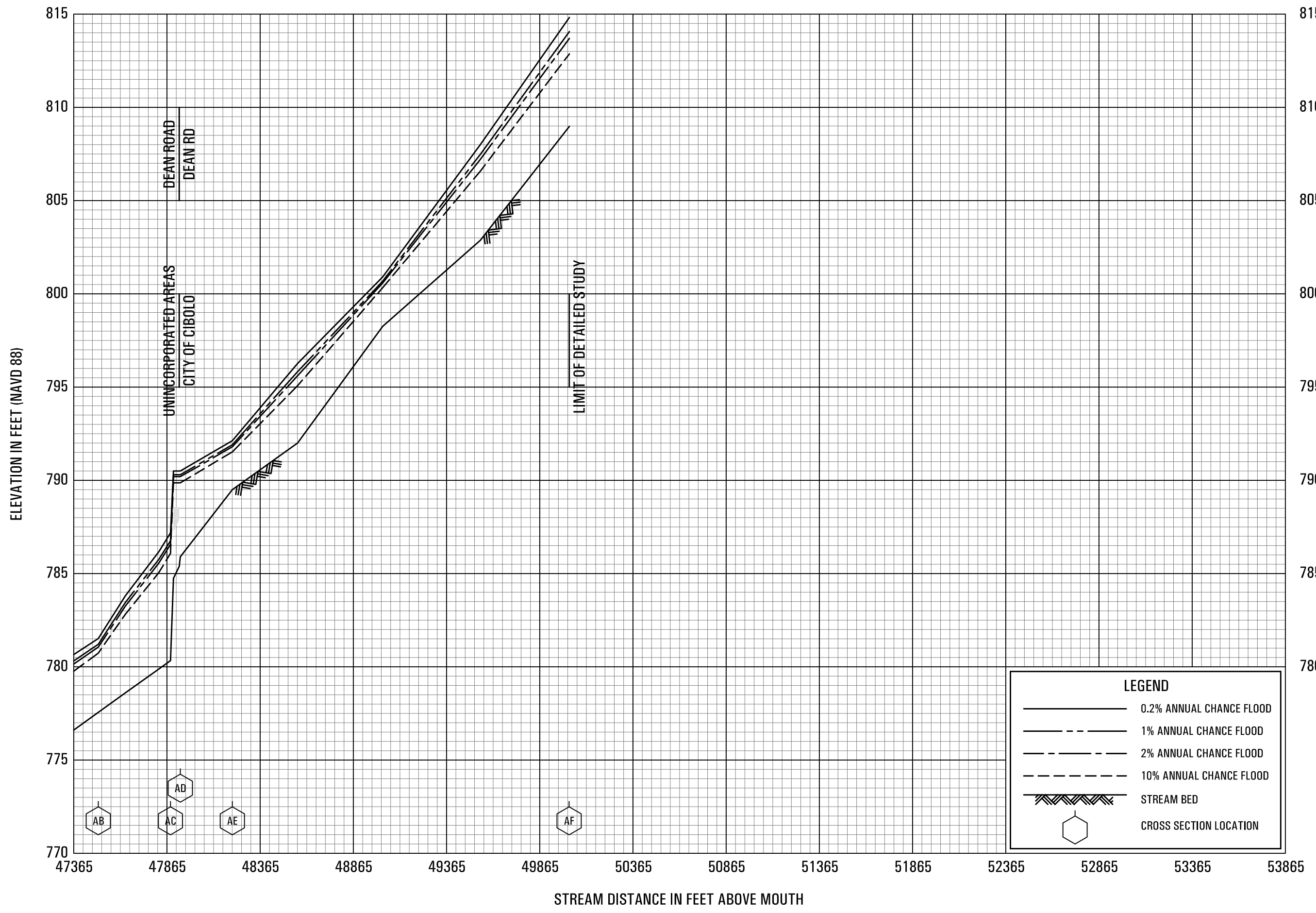
**LEGEND**

-  0.2% ANNUAL CHANCE FLOOD
-  1% ANNUAL CHANCE FLOOD
-  2% ANNUAL CHANCE FLOOD
-  10% ANNUAL CHANCE FLOOD
-  STREAM BED
-  CROSS SECTION LOCATION

**FLOOD PROFILES**  
TOWN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**GUADALUPE COUNTY, TX**  
AND INCORPORATED AREAS





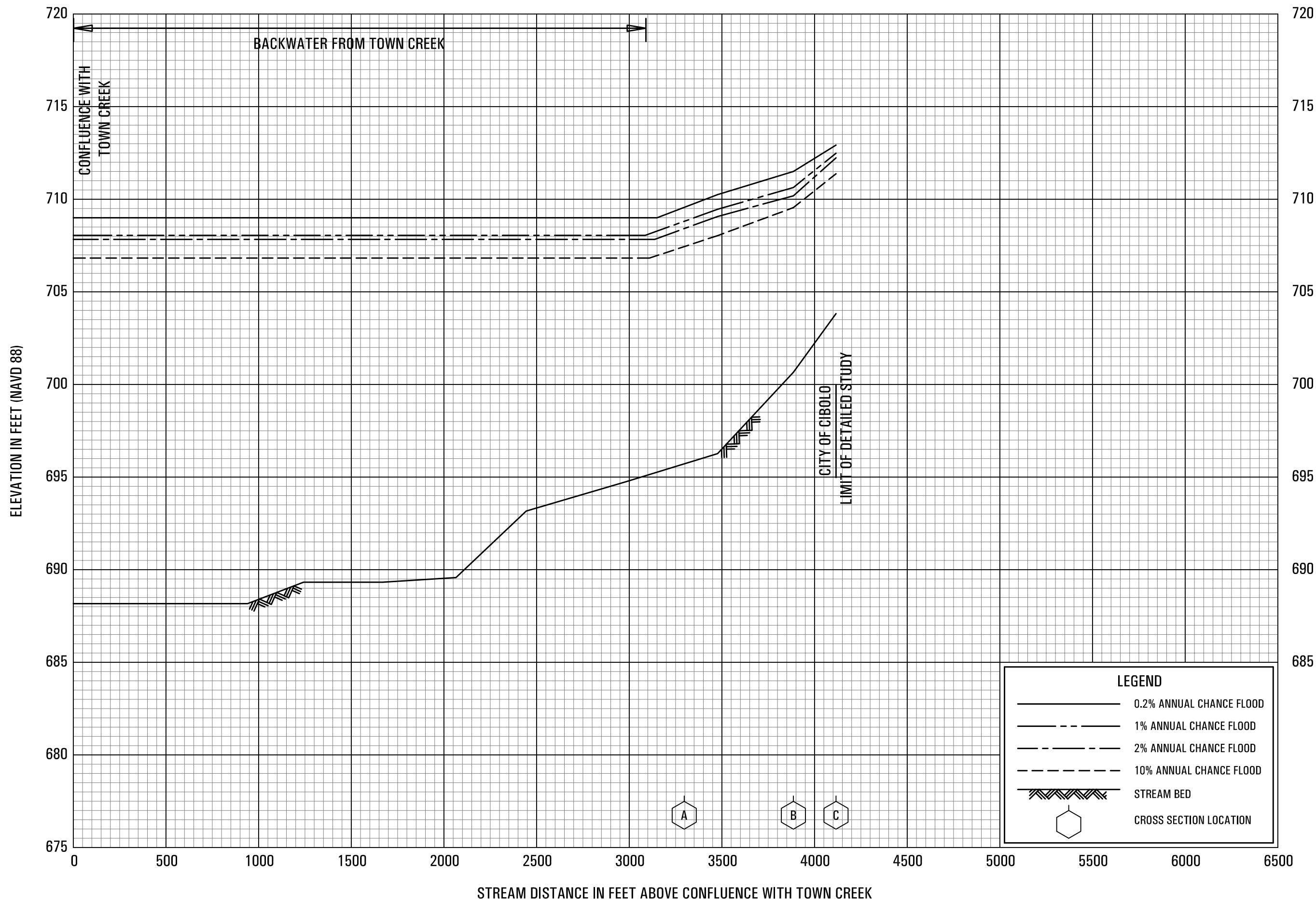
**FLOOD PROFILES**

**TOWN CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**GUADALUPE COUNTY, TX**

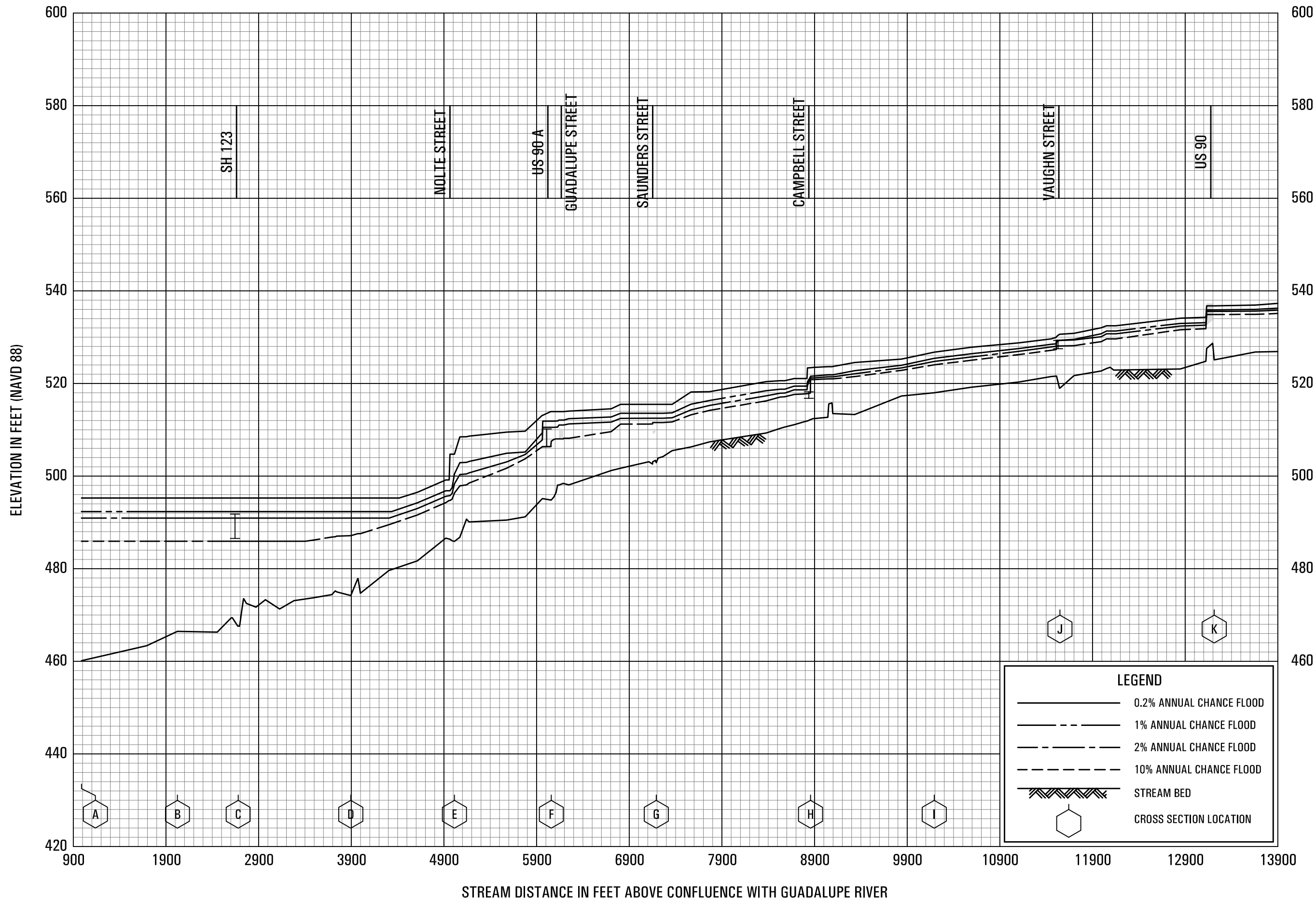
AND INCORPORATED AREAS



**FLOOD PROFILES**

**TOWN CREEK TRIBUTARY NO. 1**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**GUADALUPE COUNTY, TX**  
 AND INCORPORATED AREAS

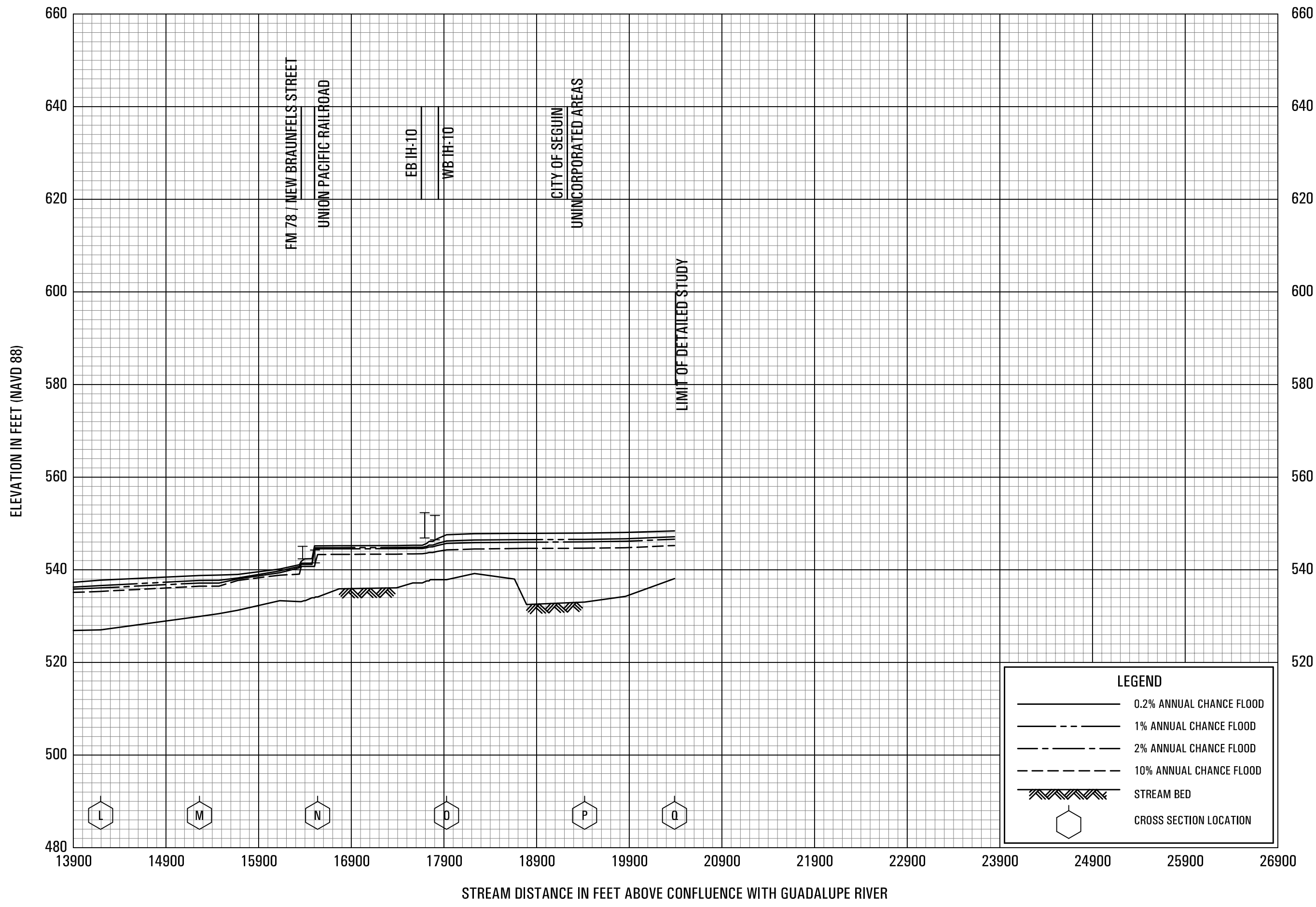


**FLOOD PROFILES**  
WALNUT BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**GUADALUPE COUNTY, TX**  
AND INCORPORATED AREAS

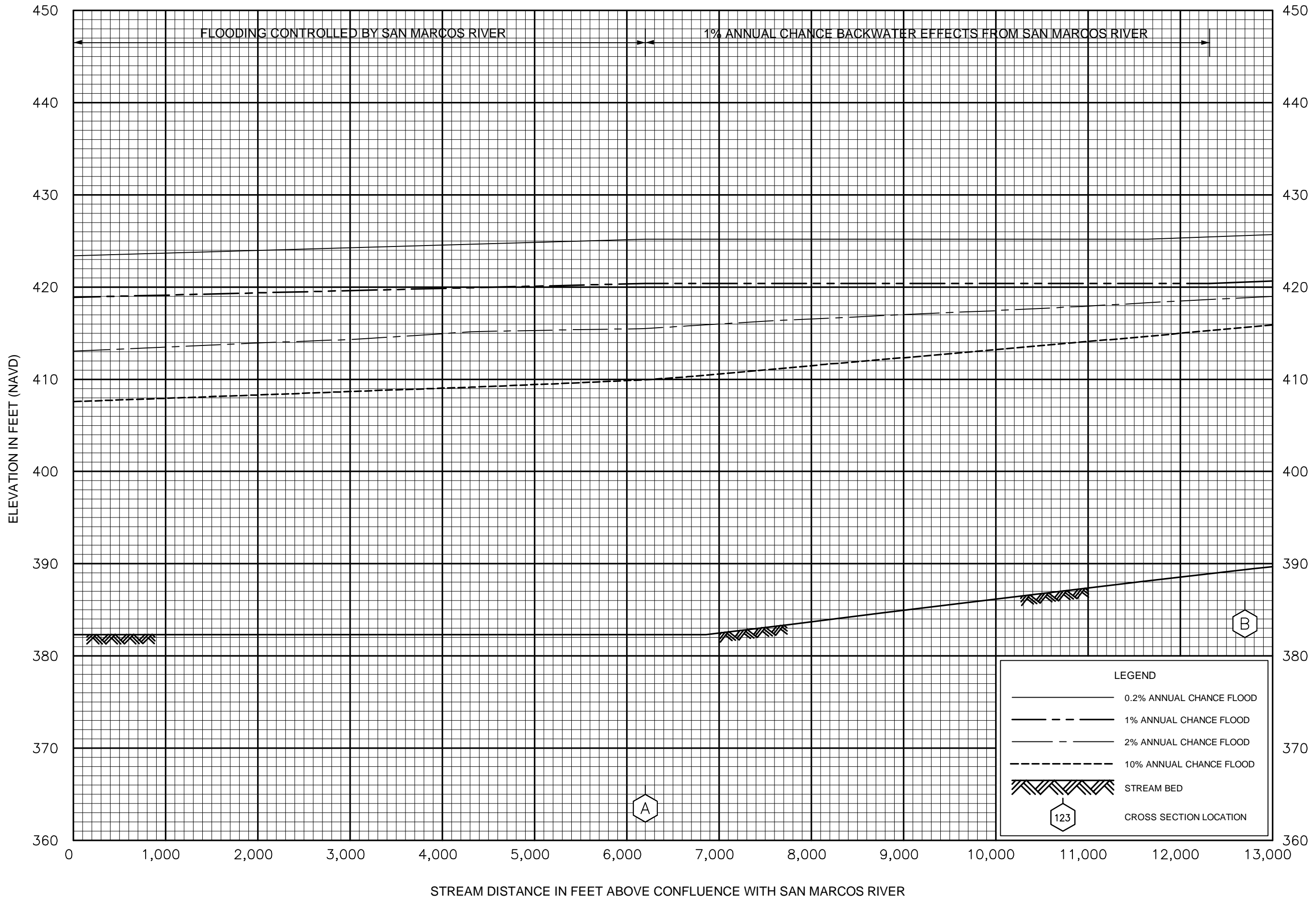
**107P**

LEGEND	
	0.2% ANNUAL CHANCE FLOOD
	1% ANNUAL CHANCE FLOOD
	2% ANNUAL CHANCE FLOOD
	10% ANNUAL CHANCE FLOOD
	STREAM BED
	CROSS SECTION LOCATION



FEDERAL EMERGENCY MANAGEMENT AGENCY  
**GUADALUPE COUNTY, TX**  
 AND INCORPORATED AREAS

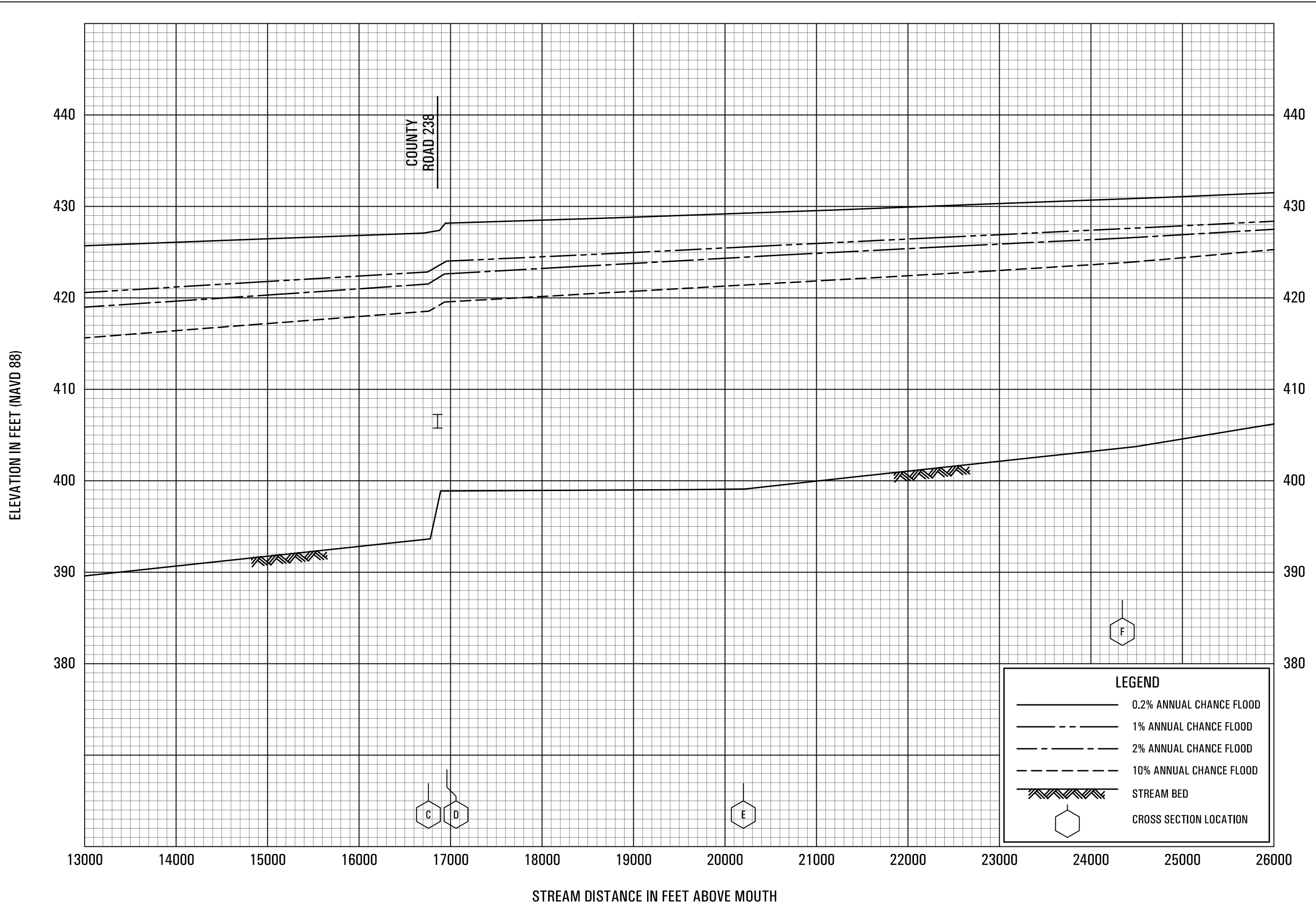
**FLOOD PROFILES**  
 WALNUT BRANCH

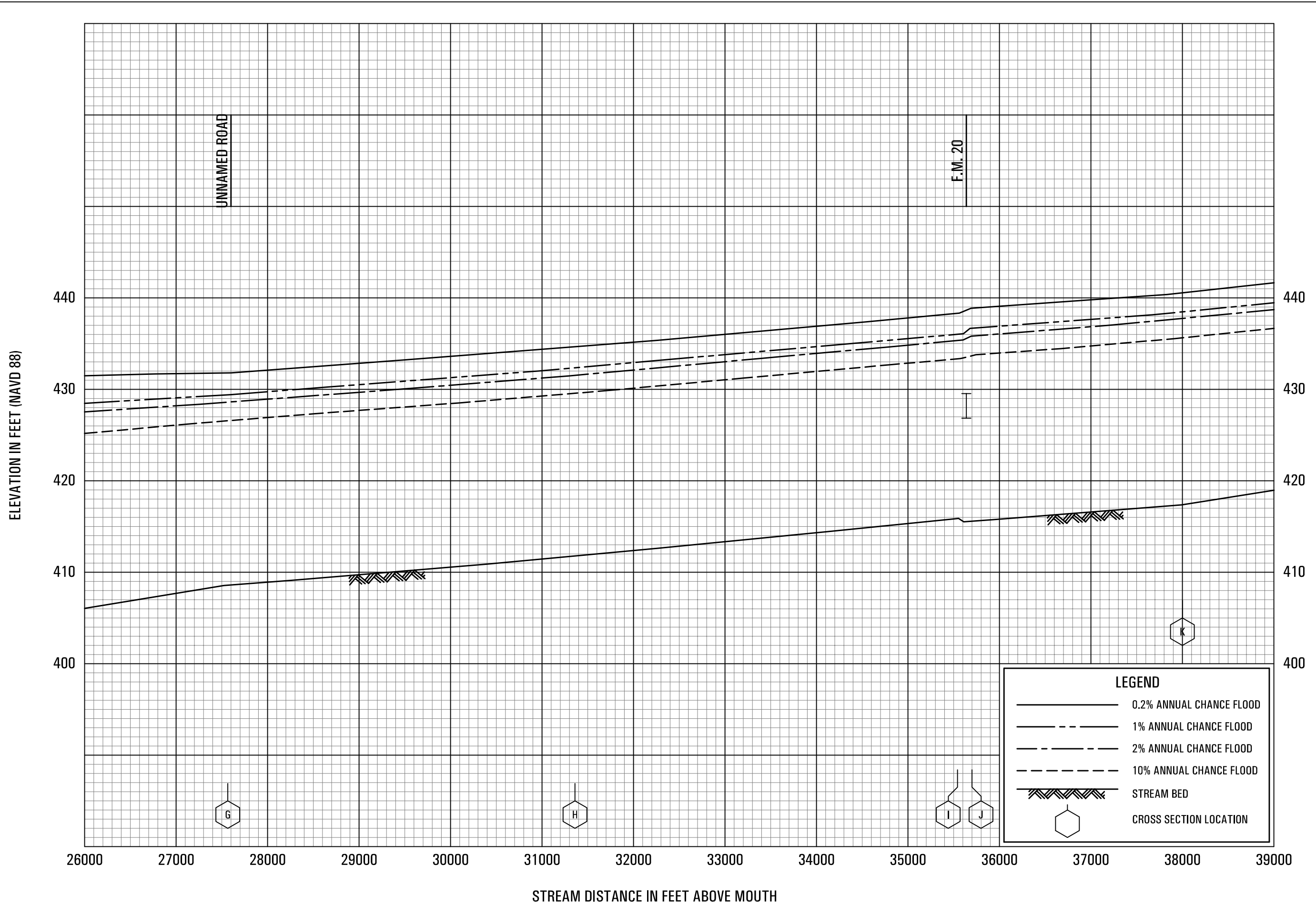


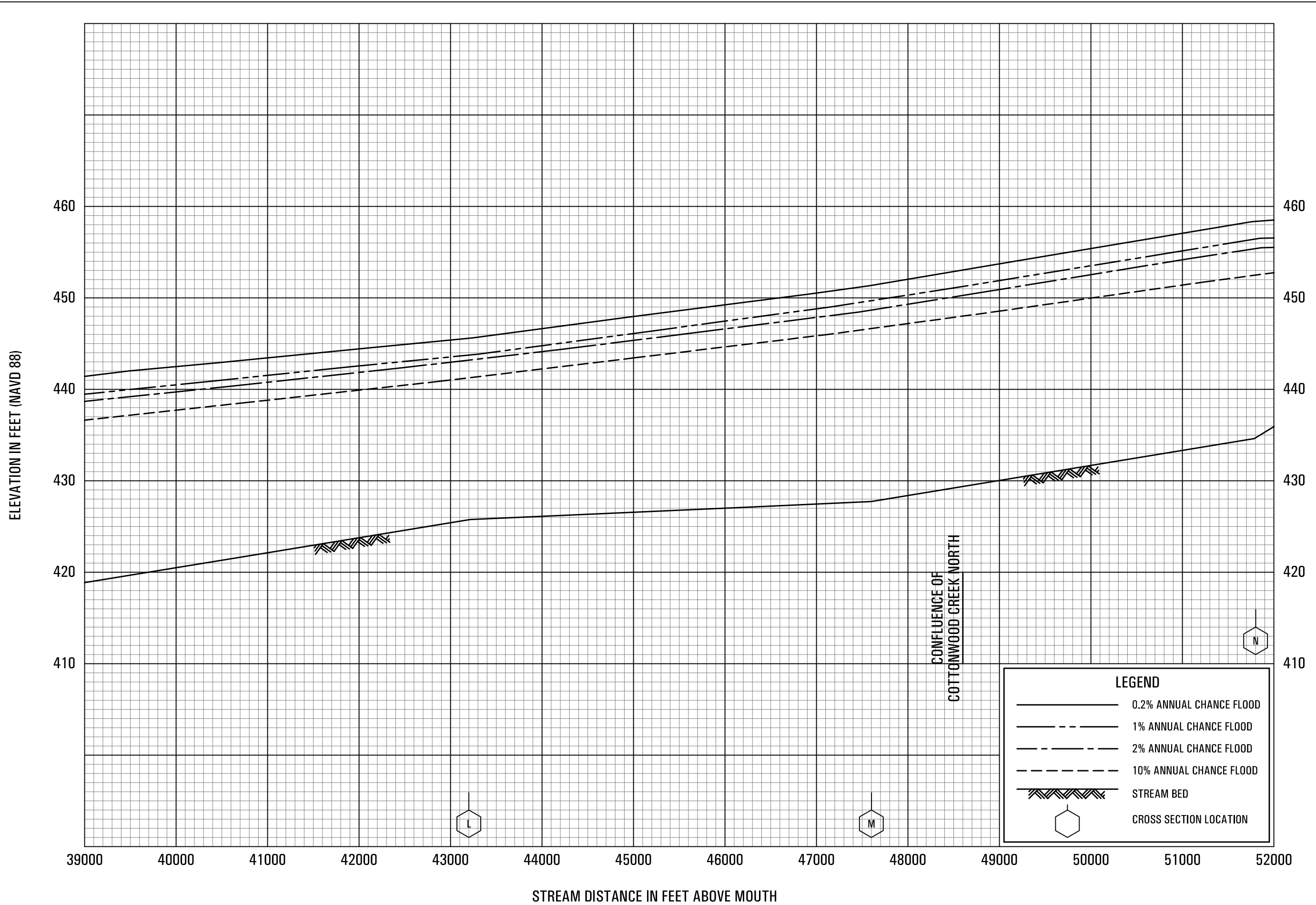
FLOOD PROFILES

YORK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**GUADALUPE COUNTY, TX**  
 AND INCORPORATED AREAS







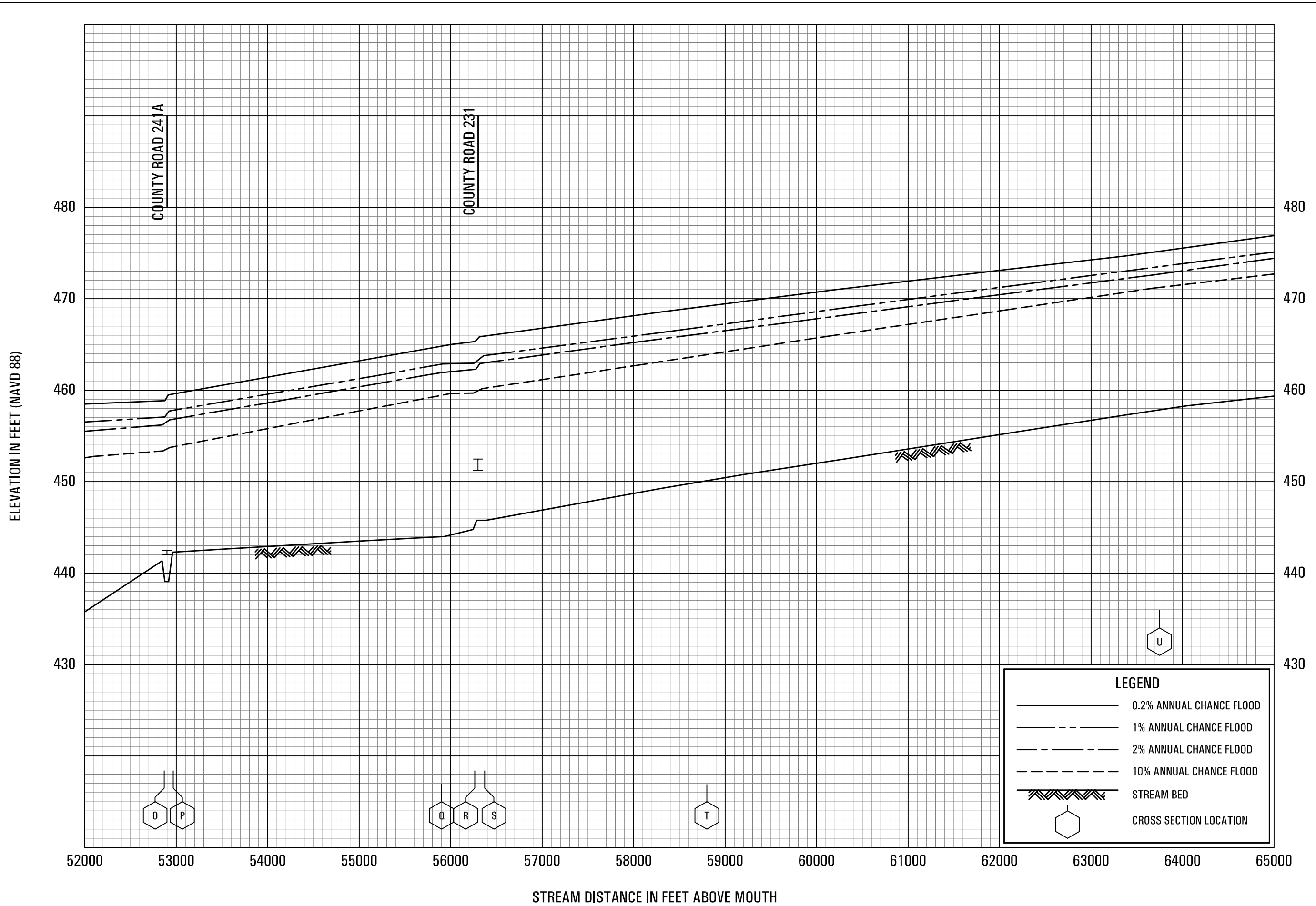
**FLOOD PROFILES**

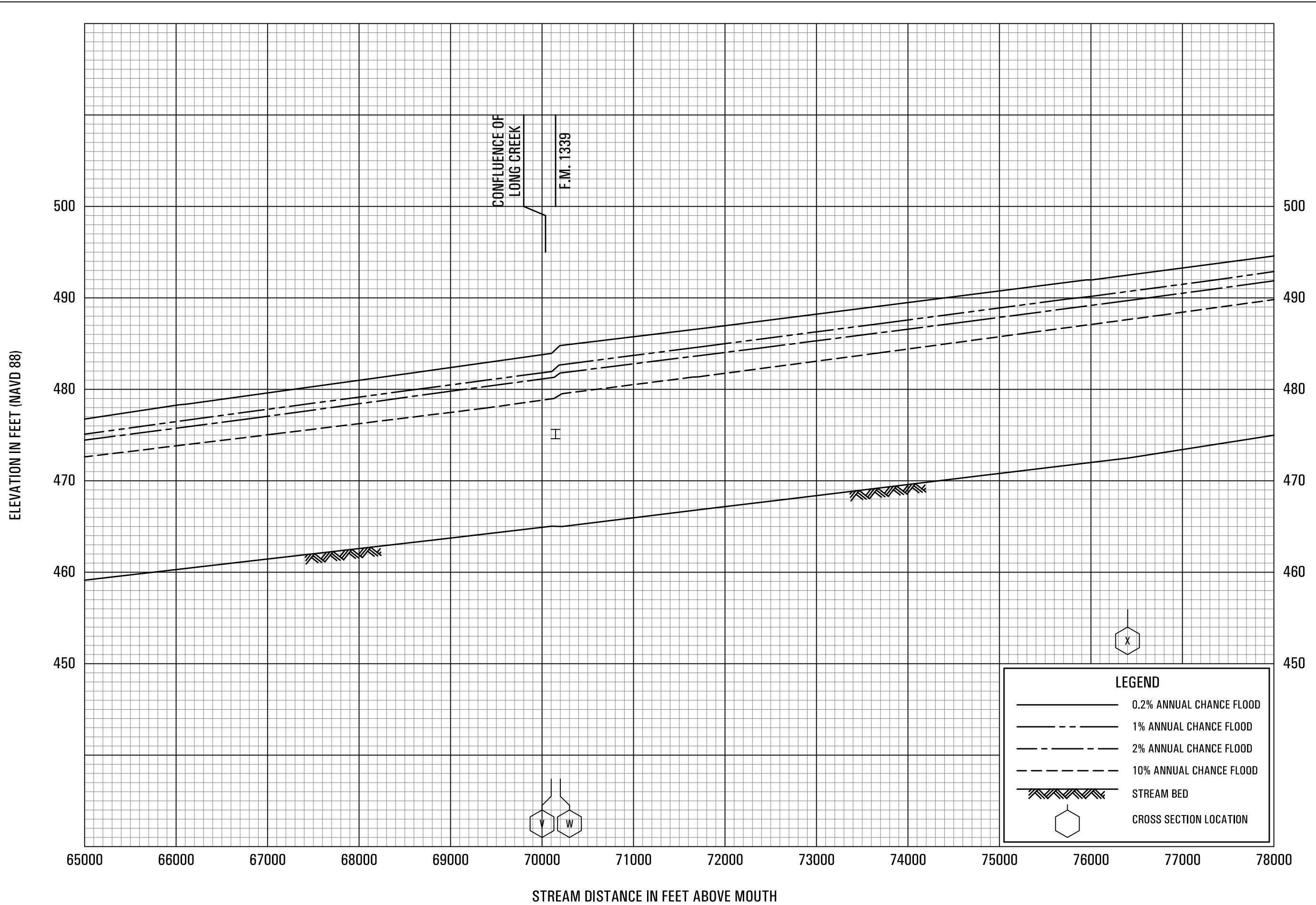
**YORK CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**GUADALUPE COUNTY, TX  
AND INCORPORATED AREAS**



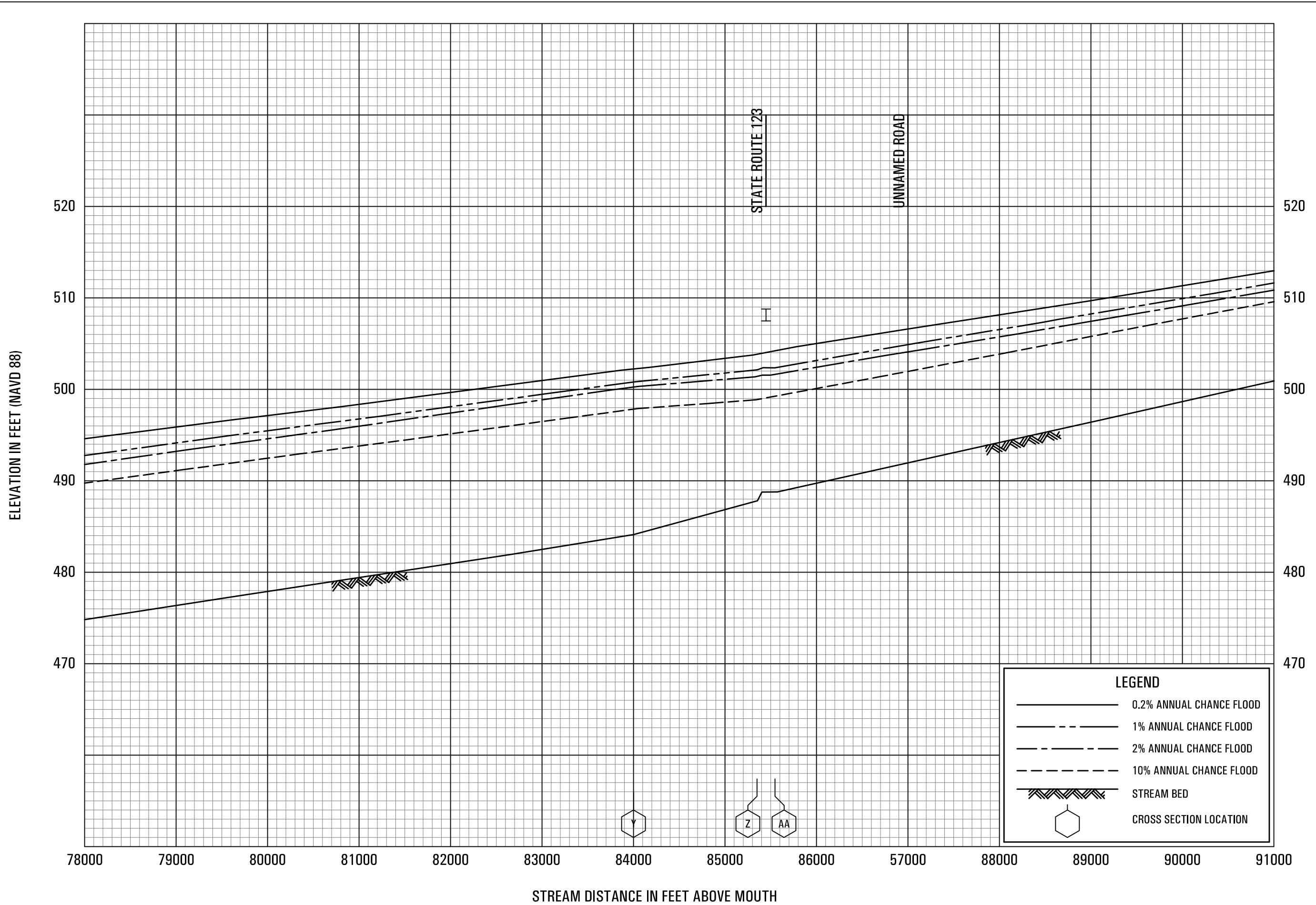




**FLOOD PROFILES**

**YORK CREEK**

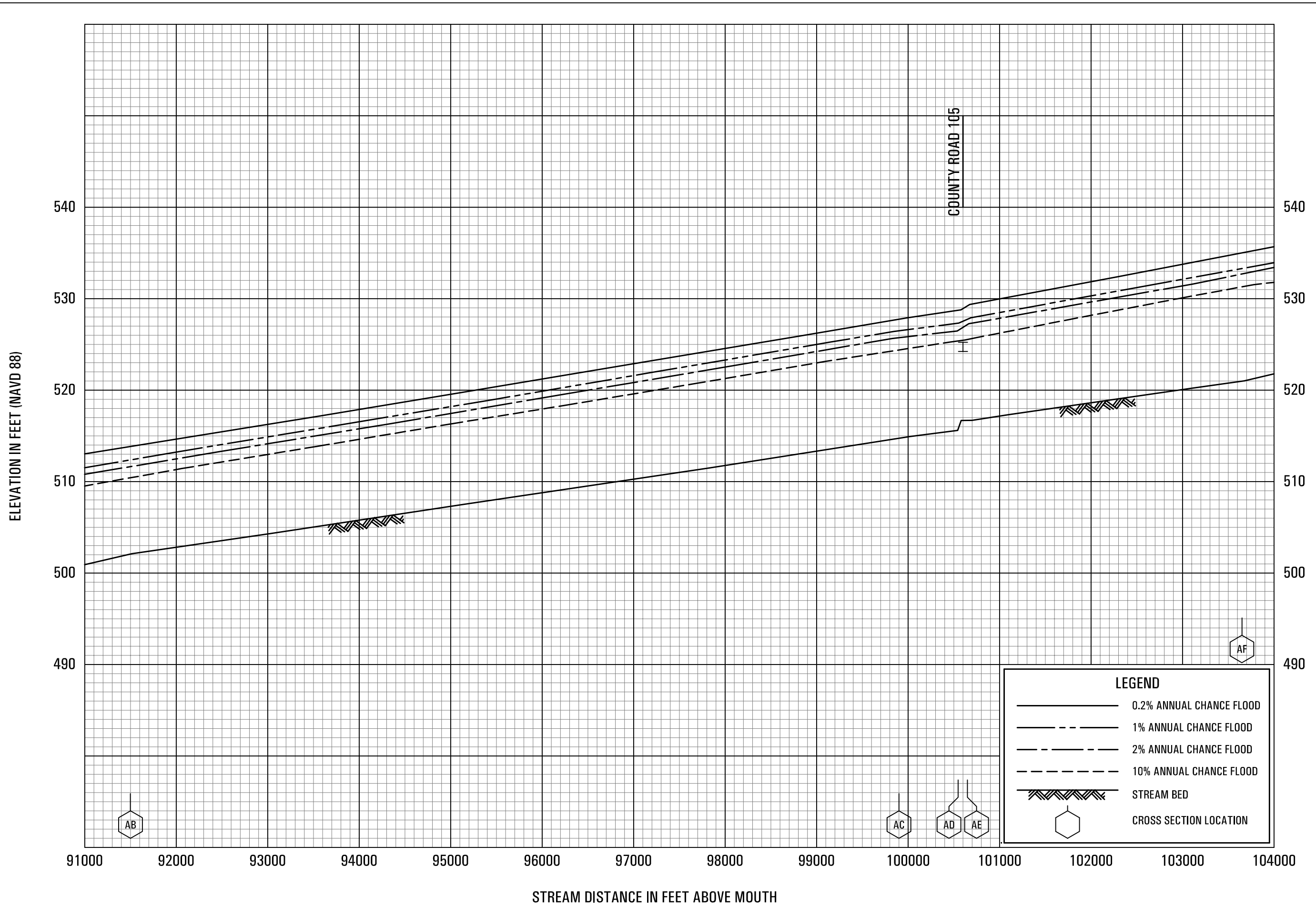
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**GUADALUPE COUNTY, TX**  
 AND INCORPORATED AREAS



**FLOOD PROFILES**

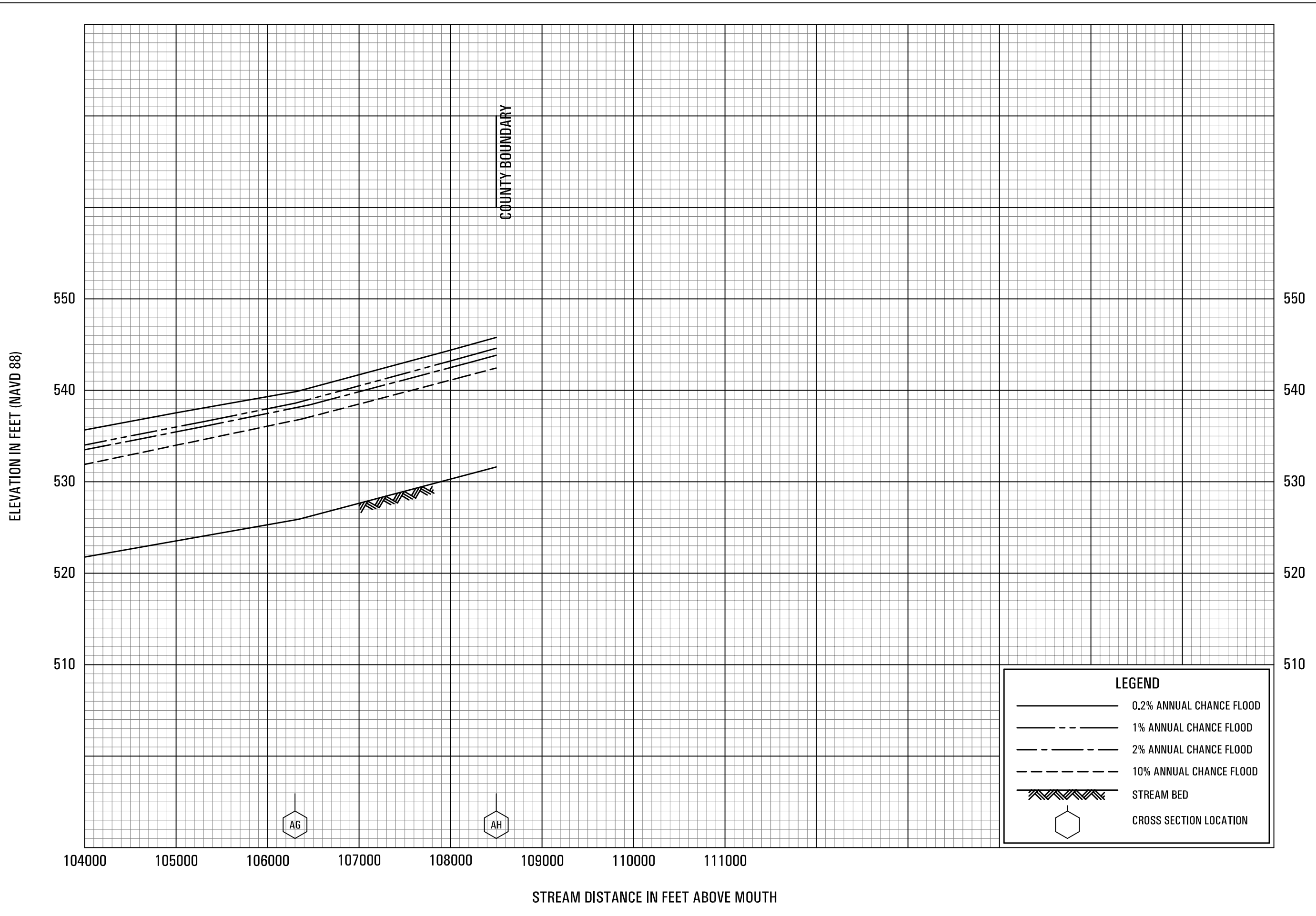
**YORK CREEK**

**FEDERAL EMERGENCY MANAGEMENT AGENCY  
GUADALUPE COUNTY, TX  
AND INCORPORATED AREAS**



**FLOOD PROFILES**  
YORK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**GUADALUPE COUNTY, TX**  
AND INCORPORATED AREAS



**FLOOD PROFILES**

**YORK CREEK**

**FEDERAL EMERGENCY MANAGEMENT AGENCY  
GUADALUPE COUNTY, TX  
AND INCORPORATED AREAS**