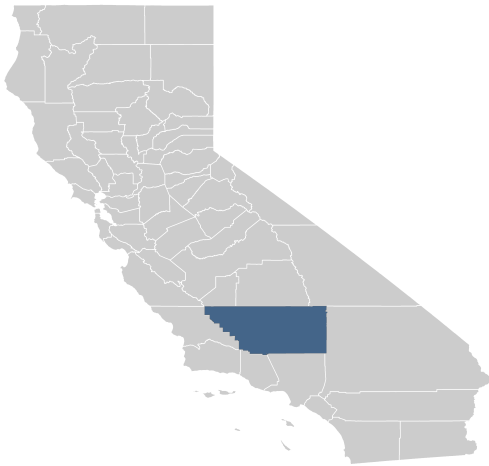


# FLOOD INSURANCE STUDY

## FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 3 OF 4



## KERN COUNTY, CALIFORNIA AND INCORPORATED AREAS

COMMUNITY NAME	NUMBER	COMMUNITY NAME	NUMBER
Arvin, City of	060076	McFarland, City of	060080
Bakersfield, City of	060077	Ridgecrest, City of	060081
California City, City of	060440	Shafter, City of	060082
Delano, City of	060078	Taft, City of	065063
Kern County, Unincorporated Areas	060075	Tehachapi, City of	060084
Maricopa, City of	060079	Wasco, City of	060085

**REVISED:**

October 21, 2021

FLOOD INSURANCE STUDY NUMBER

06029CV003B

Version Number 2.6.3.6



# FEMA

# 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	12
<b>SECTION 2.0 – FLOODPLAIN MANAGEMENT APPLICATIONS</b>	<b>25</b>
2.1 Floodplain Boundaries	25
2.2 Floodways	31
2.3 Base Flood Elevations	32
2.4 Non-Encroachment Zones	33
2.5 Coastal Flood Hazard Areas	33
2.5.1 Water Elevations and the Effects of Waves	33
2.5.2 Floodplain Boundaries and BFEs for Coastal Areas	33
2.5.3 Coastal High Hazard Areas	33
2.5.4 Limit of Moderate Wave Action	34
<b>SECTION 3.0 – INSURANCE APPLICATIONS</b>	<b>34</b>
3.1 National Flood Insurance Program Insurance Zones	34
<b>SECTION 4.0 – AREA STUDIED</b>	<b>34</b>
4.1 Basin Description	34
4.2 Principal Flood Problems	36
4.3 Non-Levee Flood Protection Measures	39
4.4 Levees	40
<b>SECTION 5.0 – ENGINEERING METHODS</b>	<b>53</b>
5.1 Hydrologic Analyses	53
5.2 Hydraulic Analyses	59
5.3 Coastal Analyses	67
5.3.1 Total Stillwater Elevations	67
5.3.2 Waves	67
5.3.3 Coastal Erosion	67
5.3.4 Wave Hazard Analyses	68
5.4 Alluvial Fan Analyses	68
<b>SECTION 6.0 – MAPPING METHODS</b>	<b>70</b>
6.1 Vertical and Horizontal Control	70
6.2 Base Map	72
6.3 Floodplain and Floodway Delineation	73

## Volume 2

6.4 Coastal Flood Hazard Mapping	114
6.5 FIRM Revisions	114

6.5.1	Letters of Map Amendment	114
6.5.2	Letters of Map Revision Based on Fill	114
6.5.3	Letters of Map Revision	115
6.5.4	Physical Map Revisions	115
6.5.5	Contracted Restudies	116
6.5.6	Community Map History	116
<b>SECTION 7.0 – CONTRACTED STUDIES AND COMMUNITY COORDINATION</b>		<b>118</b>
7.1	Contracted Studies	118
7.2	Community Meetings	120
<b>SECTION 8.0 – ADDITIONAL INFORMATION</b>		<b>124</b>
<b>SECTION 9.0 – BIBLIOGRAPHY AND REFERENCES</b>		<b>125</b>

#### Figures

	<u>Page</u>
Figure 1: FIRM Index	14
Figure 2: FIRM Notes to Users	18
Figure 3: Map Legend for FIRM	21
Figure 4: Floodway Schematic	32
Figure 5: Wave Runup Transect Schematic	33
Figure 6: Coastal Transect Schematic	33
Figure 7: Frequency Discharge-Drainage Area Curves	58
Figure 8: 1% Annual Chance Total Stillwater Elevations for Coastal Areas	67
Figure 9: Transect Location Map	68

#### Tables

	<u>Page</u>
Table 1: Listing of NFIP Jurisdictions	3
Table 2: Flooding Sources Included in this FIS Report	27
Table 3: Flood Zone Designations by Community	34
Table 4: Basin Characteristics	35
Table 5: Principal Flood Problems	36
Table 6: Historic Flooding Elevations	39
Table 7: Non-Levee Flood Protection Measures	39
Table 8: Levees	42
Table 9: Summary of Discharges	54
Table 10: Summary of Non-Coastal Stillwater Elevations	59
Table 11: Stream Gage Information used to Determine Discharges	59
Table 12: Summary of Hydrologic and Hydraulic Analyses	61
Table 13: Roughness Coefficients	66
Table 14: Summary of Coastal Analyses	67

Table 15: Tide Gage Analysis Specifics	67
Table 16: Coastal Transect Parameters	68
Table 17: Summary of Alluvial Fan Analyses	69
Table 18: Results of Alluvial Fan Analyses	70
Table 19: Countywide Vertical Datum Conversion	71
Table 20: Stream-Based Vertical Datum Conversion	71
Table 21: Base Map Sources	72
Table 22: Summary of Topographic Elevation Data used in Mapping	74
Table 23: Floodway Data	77

## Volume 2

Table 23: Floodway Data	102
Table 24: Flood Hazard and Non-Encroachment Data for Selected Streams	114
Table 25: Summary of Coastal Transect Mapping Considerations	114
Table 26: Incorporated Letters of Map Change	115
Table 27: Community Map History	117
Table 28: Summary of Contracted Studies Included in this FIS Report	118
Table 29: Community Meetings	121
Table 30: Map Repositories	124
Table 31: Additional Information	125
Table 32: Bibliography and References	126

## Exhibits

Flood Profiles	<u>Panel</u>
Antelope Creek	01P-06P
Blackburn Creek	07P-09P
Bodfish Creek	10P-13P
Boron Avenue Creek	14P-19P
Cache Creek	20P-25P
Caliente Creek	26P-28P
Caliente Creek near Loraine	29P-34P
Caliente Creek Tributary 1	35P-36P
Cottonwood Creek	37P-41P
Cuddy Creek	42P-63P
El Paso Wash	64P-66P
Erskine Creek	67P-72P

### **Volume 3**

#### Exhibits

Flood Profiles	<u>Panel</u>
Indian Creek	73P-74P
Jawbone Canyon Wash	75P-80P
Kern River at Kernville	81P-87P
Kern River - With Consideration of Levees	88P-143P
Kern River - Without Consideration of Levees	144P-147P

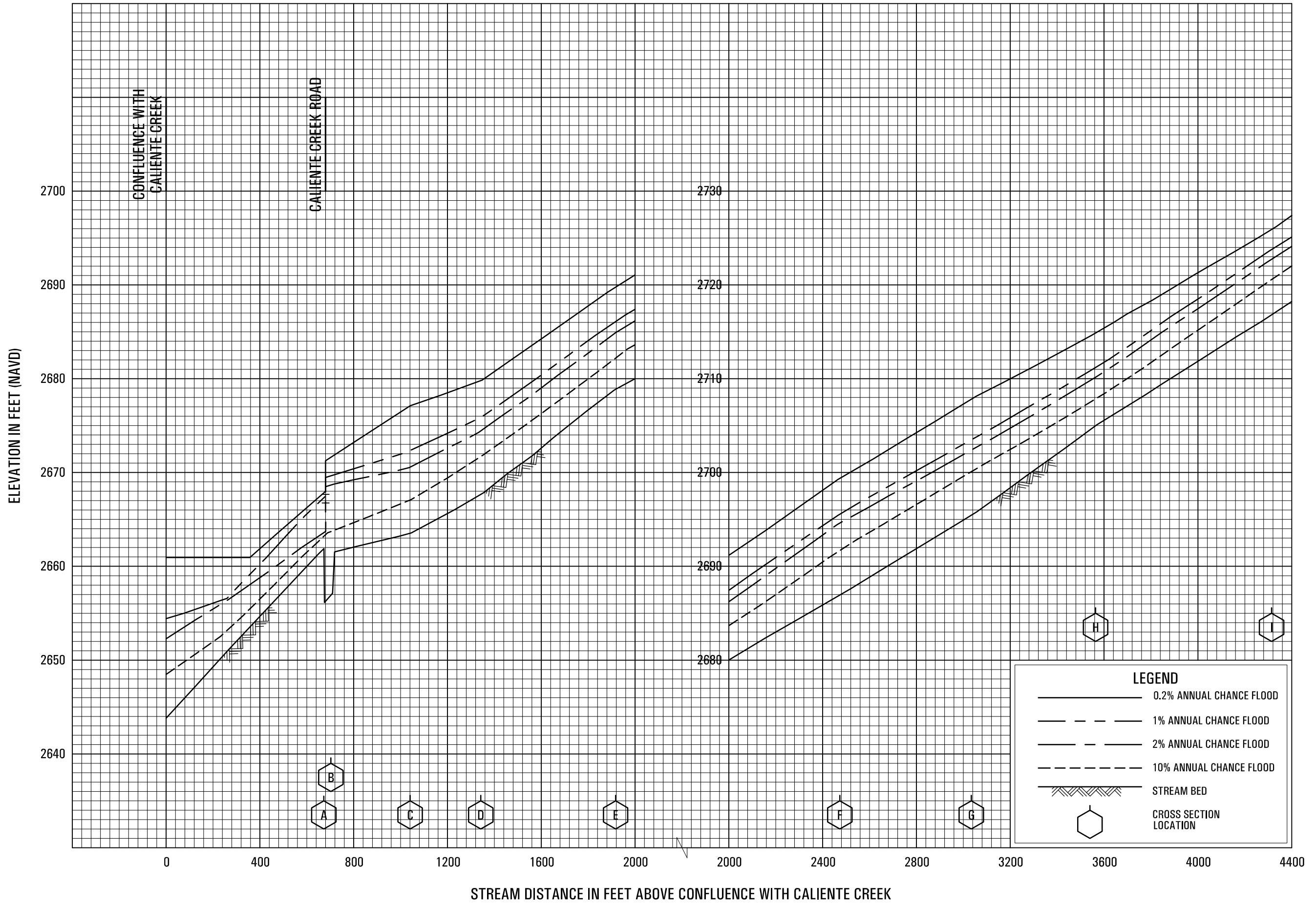
### **Volume 4**

#### Exhibits

Flood Profiles	<u>Panel</u>
Little Dixie Wash	148P-151P
North Sandy Creek	152P
Poso Creek	153P-157P
Ranger Station Creek	158P-160P
Sandy Creek	161P-164P
South Branch Poso Creek	165P-166P
South Fork Kern River	167P-174P
Tierra Del Sol Creek	175P-185P
Upper Sycamore Creek	186P-189P
Weaver Creek	190P-192P

### **Published Separately**

Flood Insurance Rate Map (FIRM)

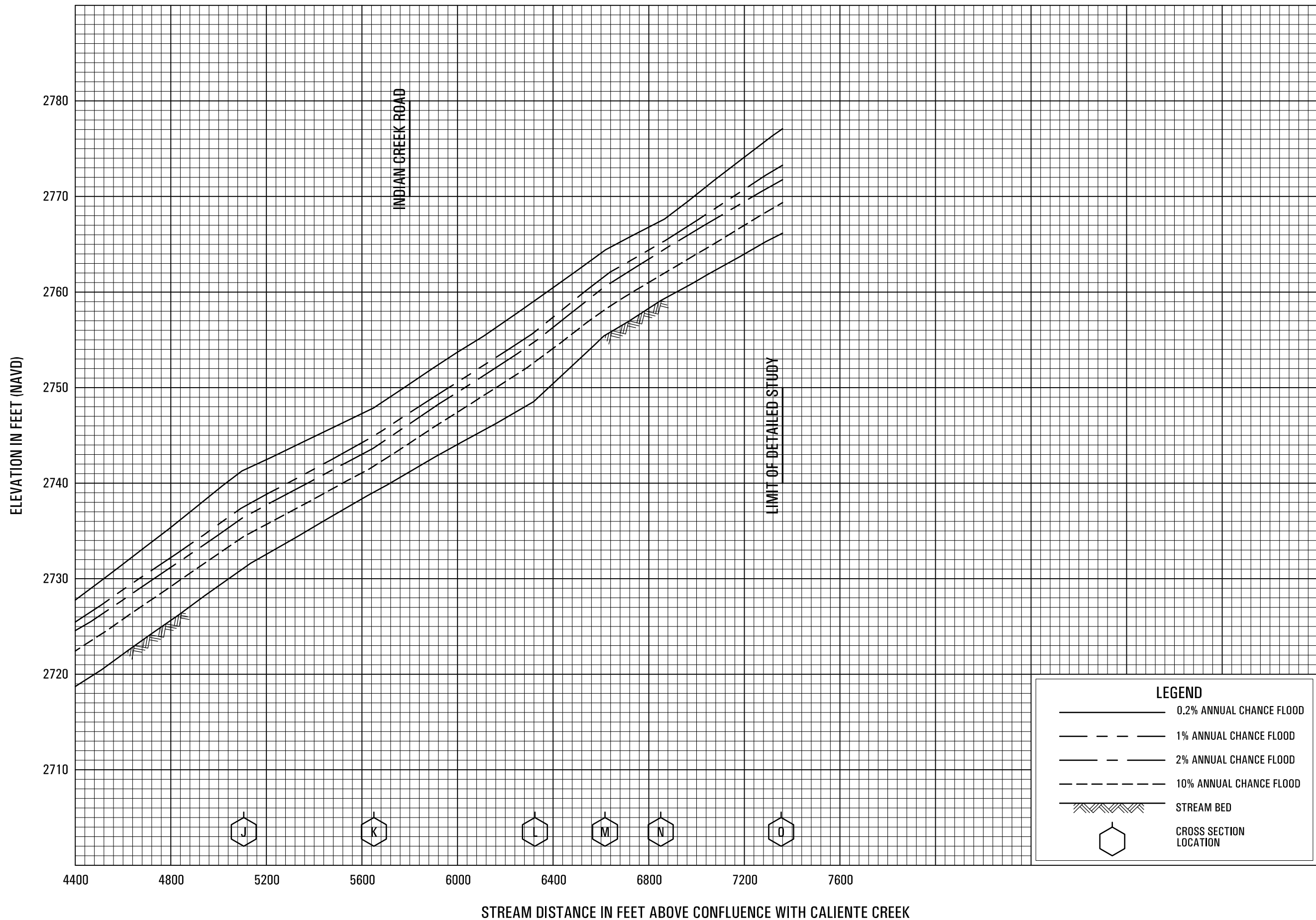


**FLOOD PROFILES**

**INDIAN CREEK**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**KERN COUNTY, CA  
AND INCORPORATED AREAS**

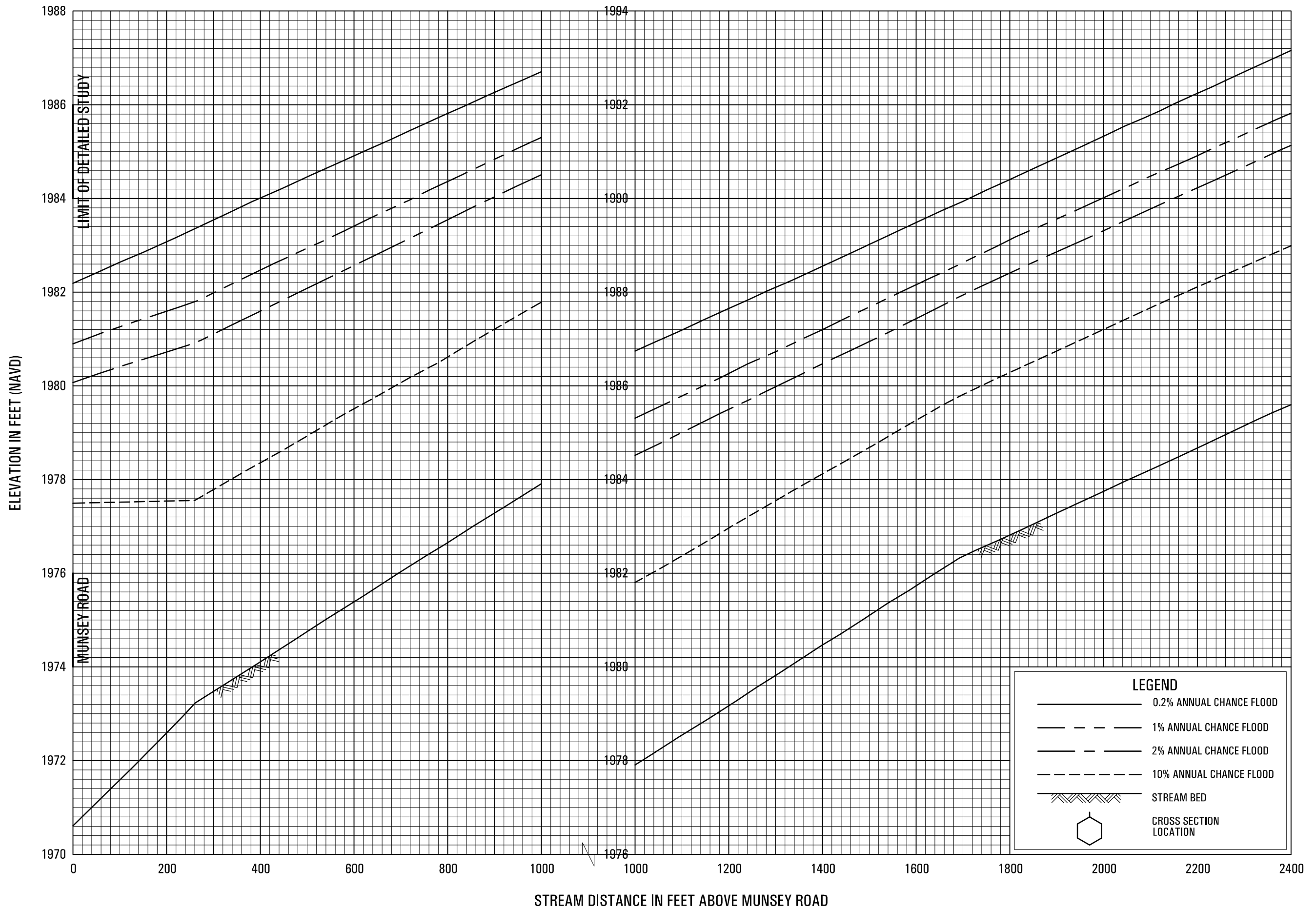


**FLOOD PROFILES**

**INDIAN CREEK**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**KERN COUNTY, CA  
AND INCORPORATED AREAS**



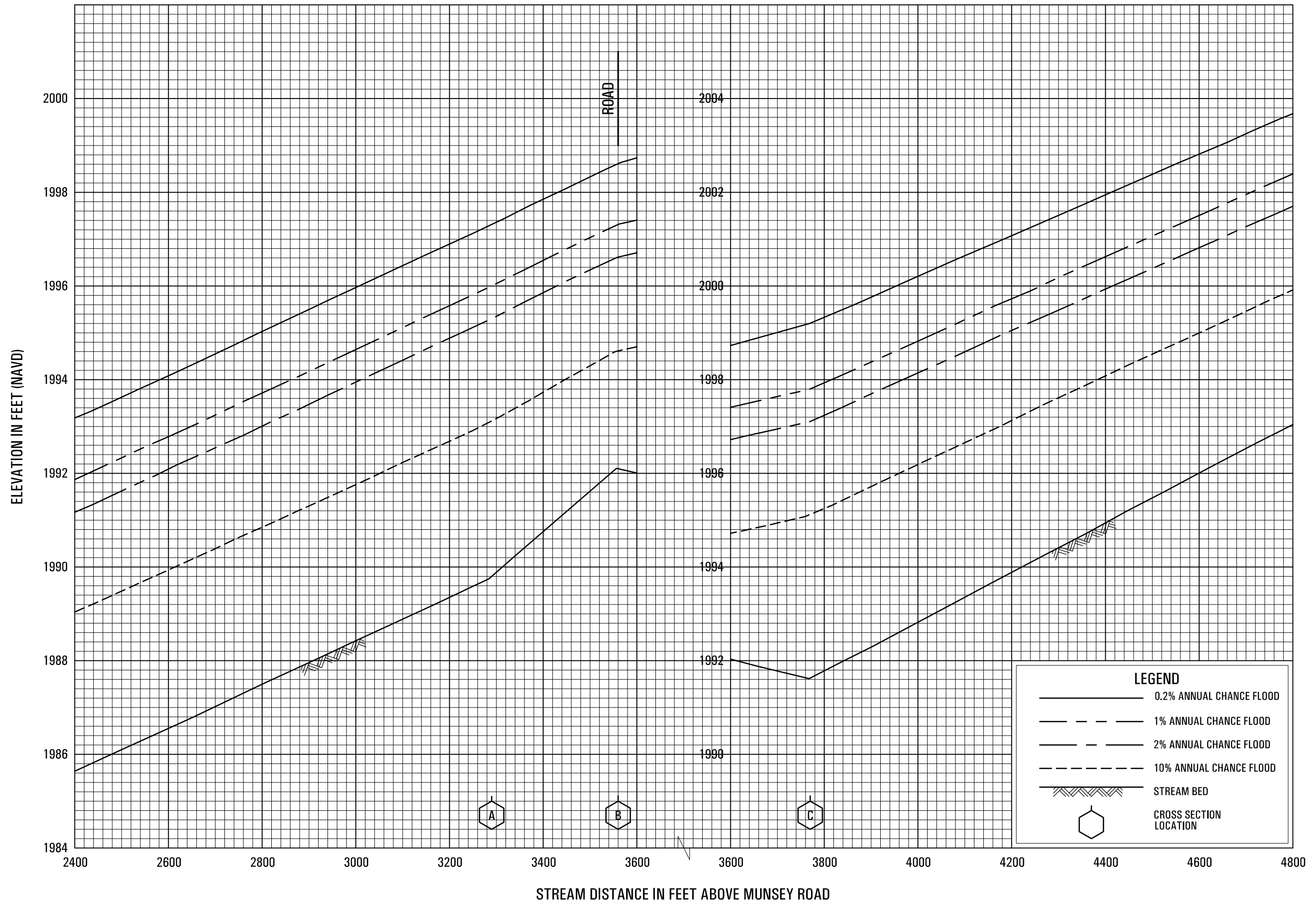
**FLOOD PROFILES**

**JAWBONE CANYON WASH**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**KERN COUNTY, CA  
AND INCORPORATED AREAS**



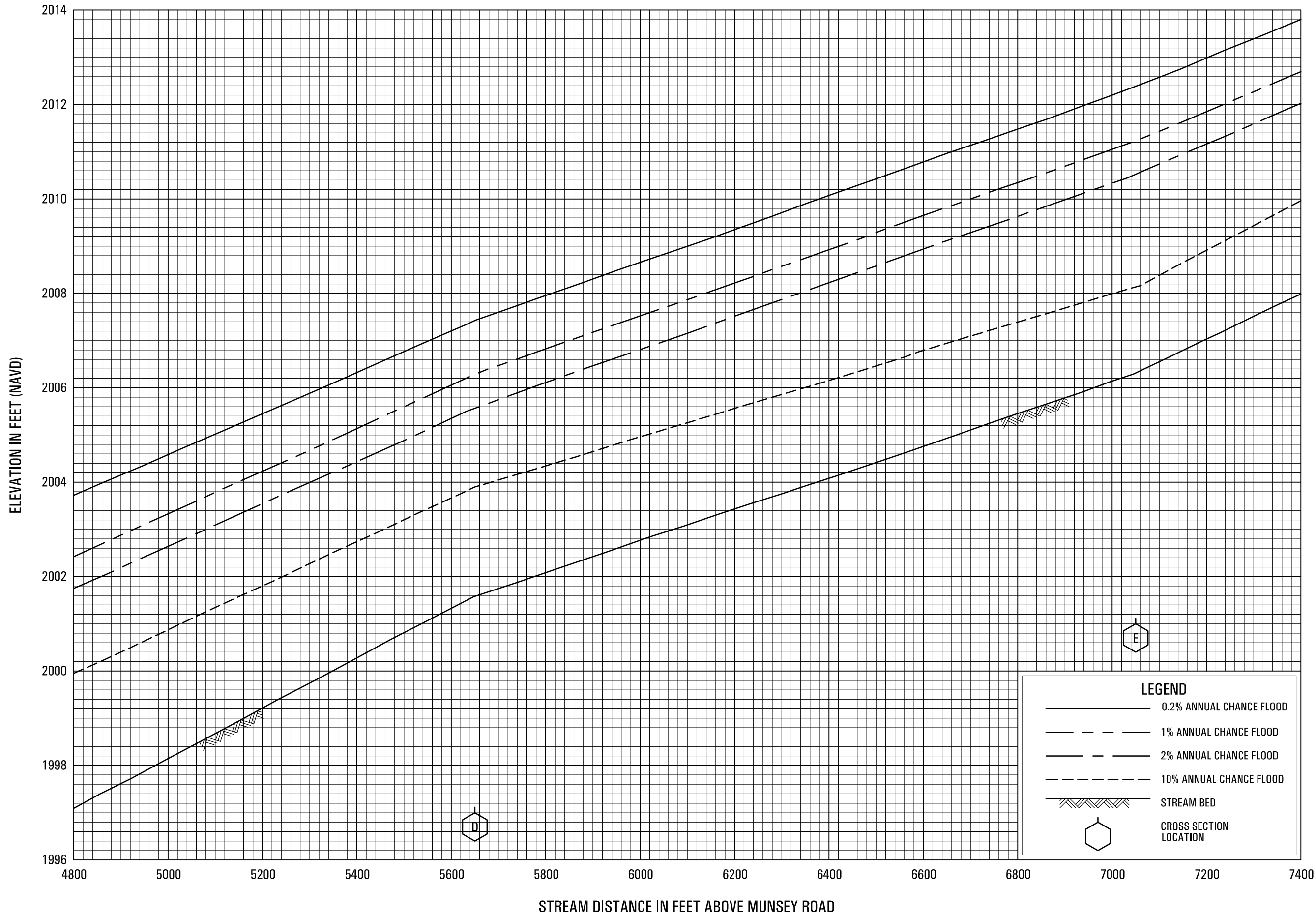


**FLOOD PROFILES**

**JAWBONE CANYON WASH**

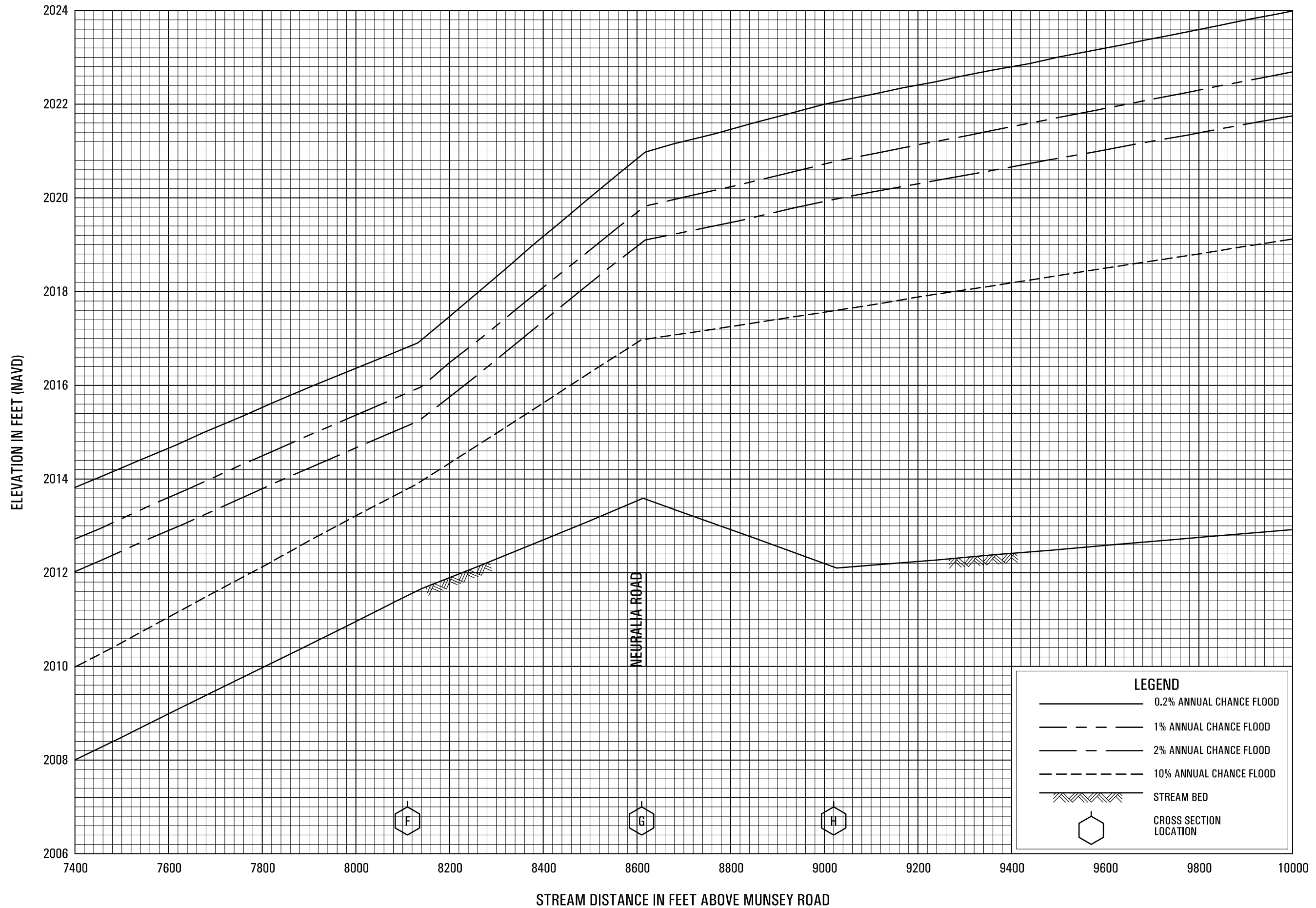
**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**KERN COUNTY, CA  
AND INCORPORATED AREAS**



FEDERAL EMERGENCY MANAGEMENT AGENCY  
 KERN COUNTY, CA  
 AND INCORPORATED AREAS

FLOOD PROFILES  
 JAWBONE CANYON WASH

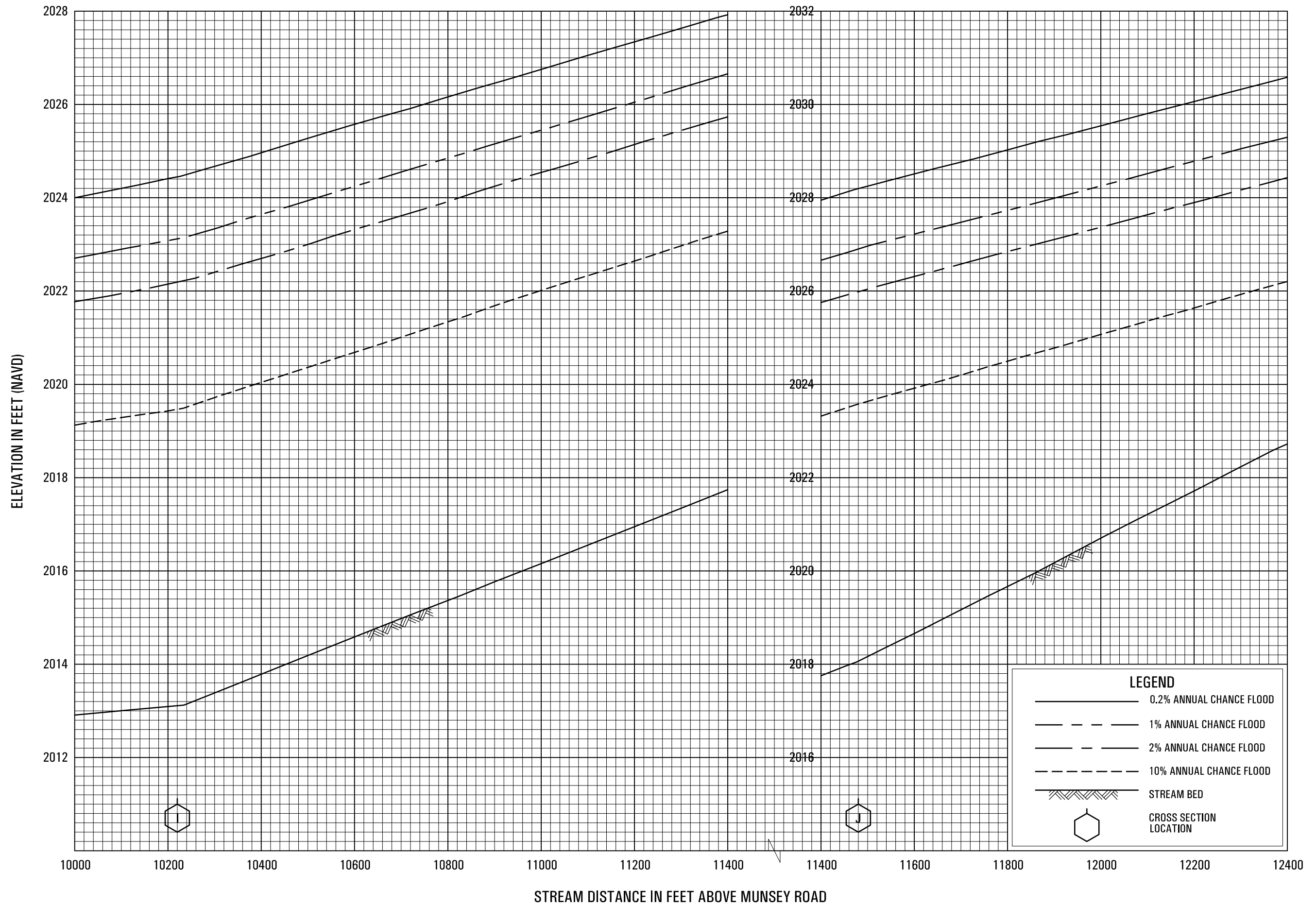


**FLOOD PROFILES**

**JAWBONE CANYON WASH**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**KERN COUNTY, CA  
AND INCORPORATED AREAS**

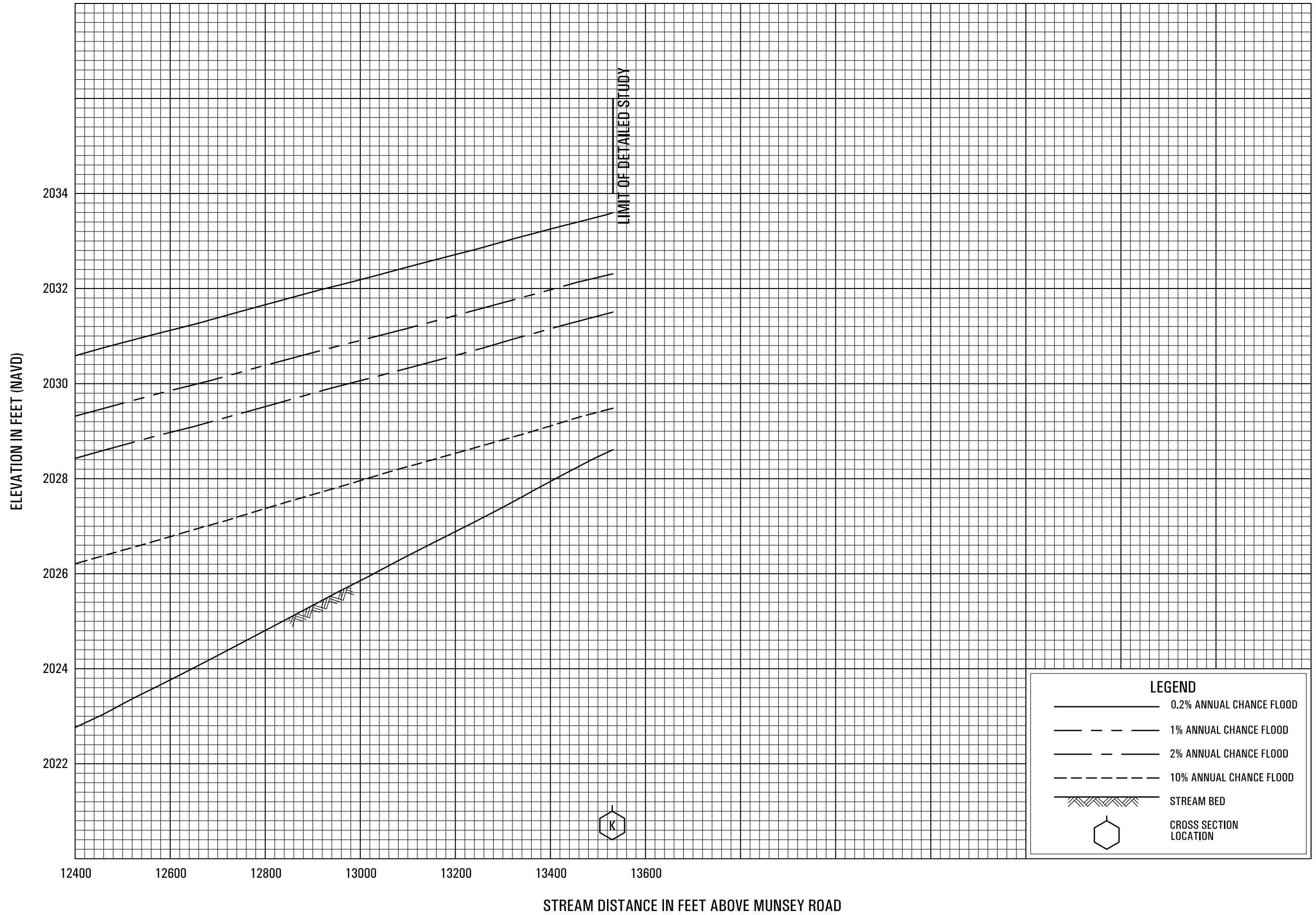


**FLOOD PROFILES**

**JAWBONE CANYON WASH**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**KERN COUNTY, CA  
AND INCORPORATED AREAS**

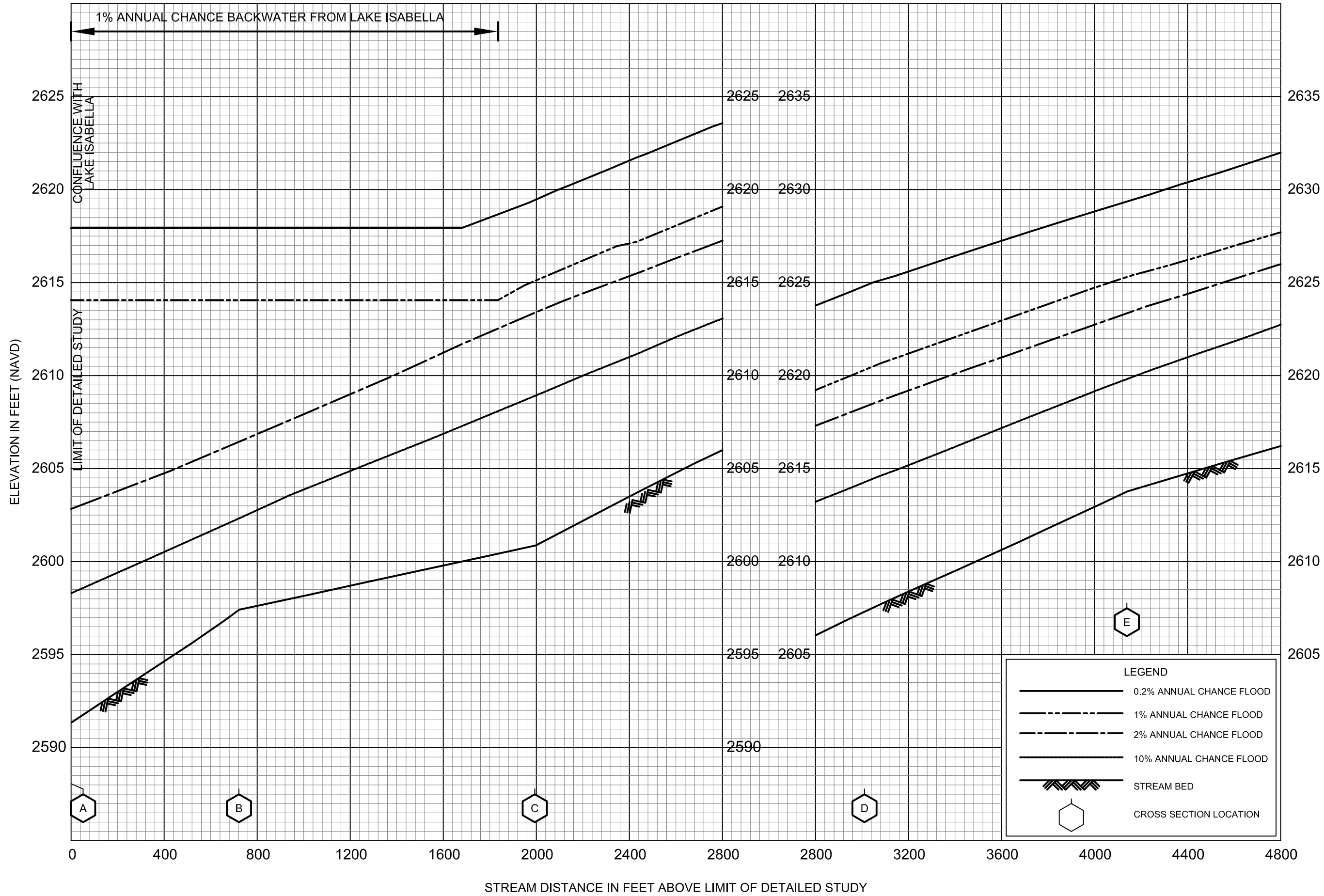


**FLOOD PROFILES**

**JAWBONE CANYON WASH**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**KERN COUNTY, CA  
AND INCORPORATED AREAS**

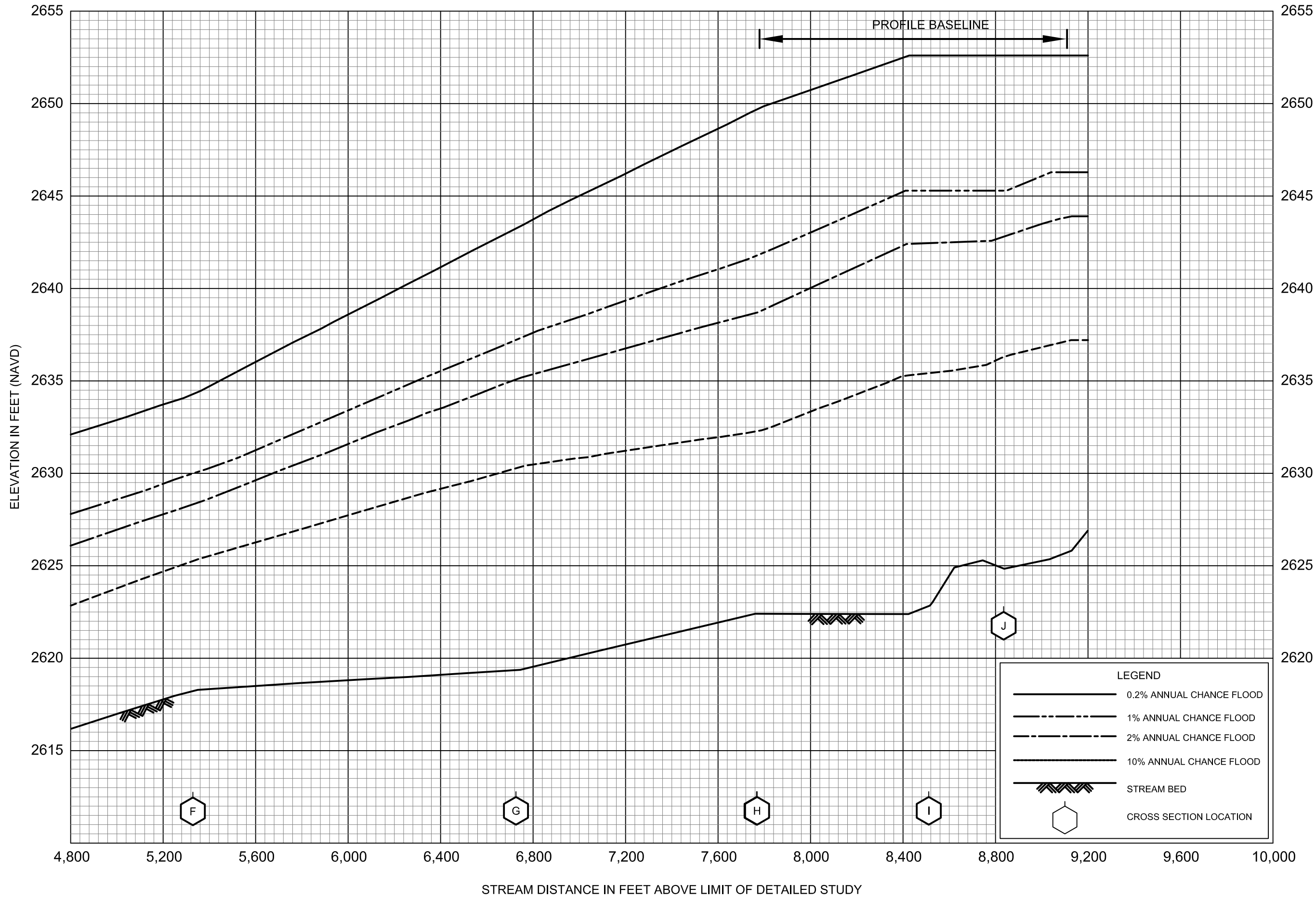


FLOOD PROFILES

KERN RIVER AT KERNVILLE

FEDERAL EMERGENCY MANAGEMENT AGENCY

KERN COUNTY, CA  
AND INCORPORATED AREAS

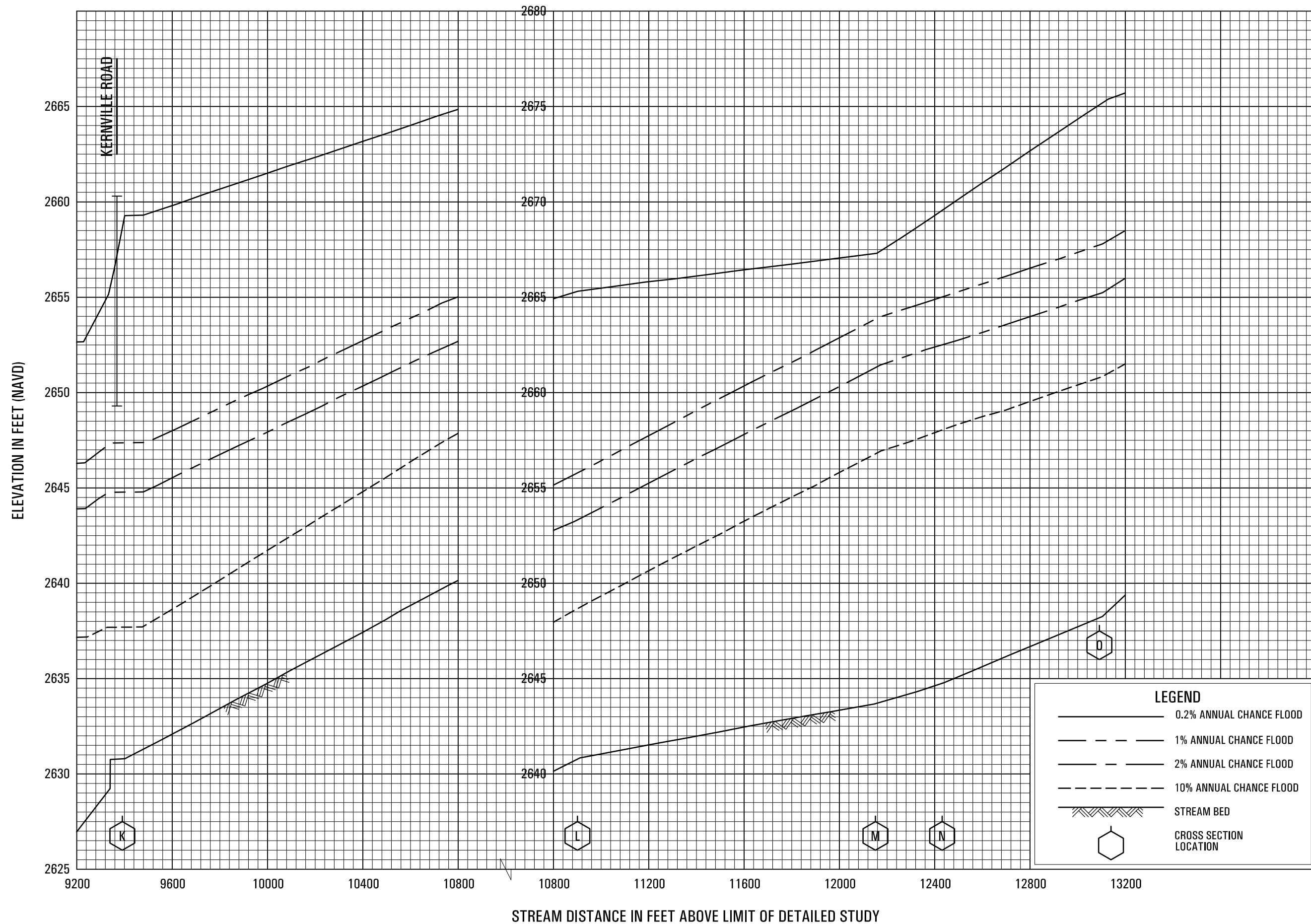


FLOOD PROFILES

KERN RIVER AT KERNVILLE

FEDERAL EMERGENCY MANAGEMENT AGENCY

KERN COUNTY, CA  
AND INCORPORATED AREAS



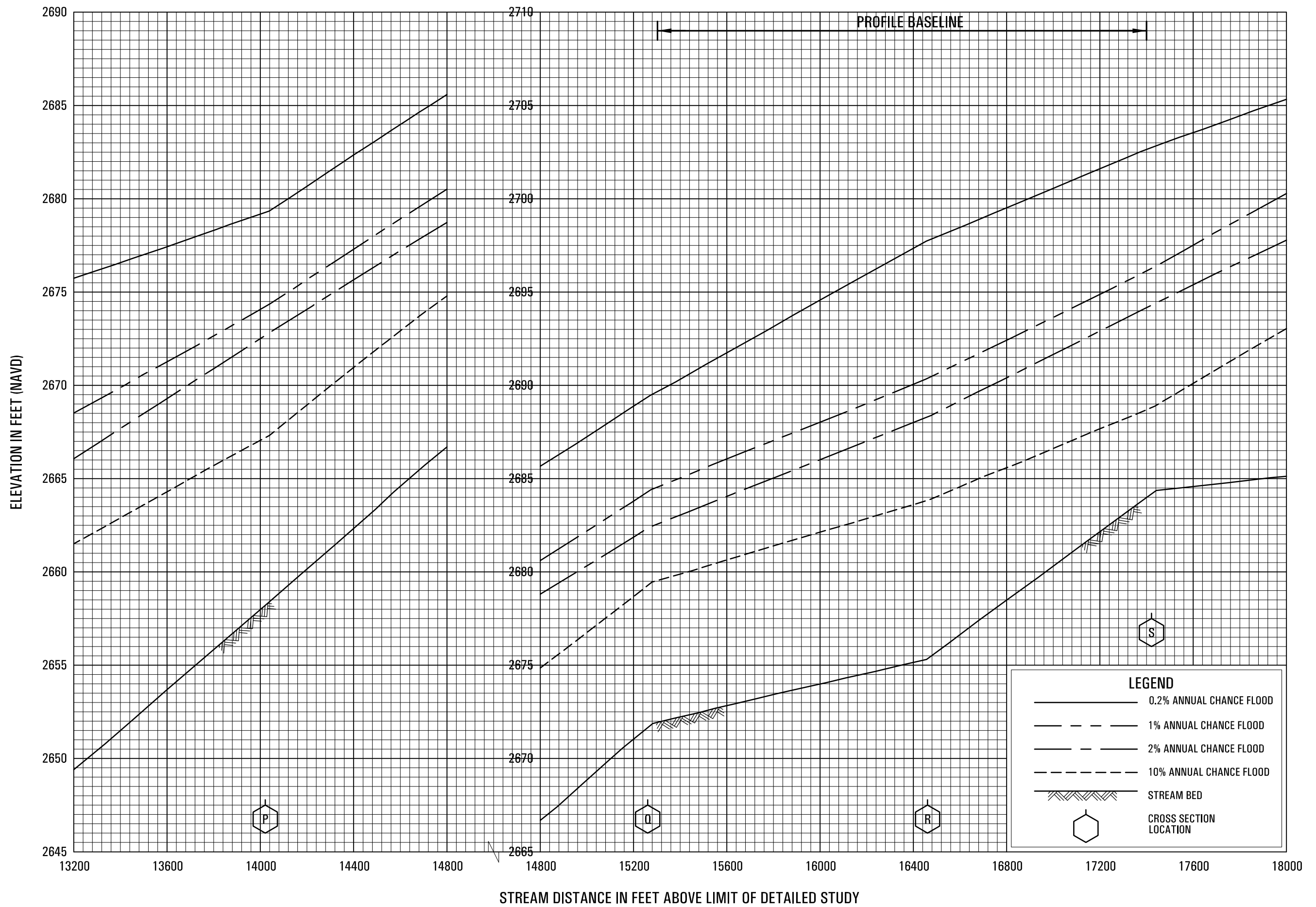
**FLOOD PROFILES**

**KERN RIVER AT KERNVILLE**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**KERN COUNTY, CA  
AND INCORPORATED AREAS**



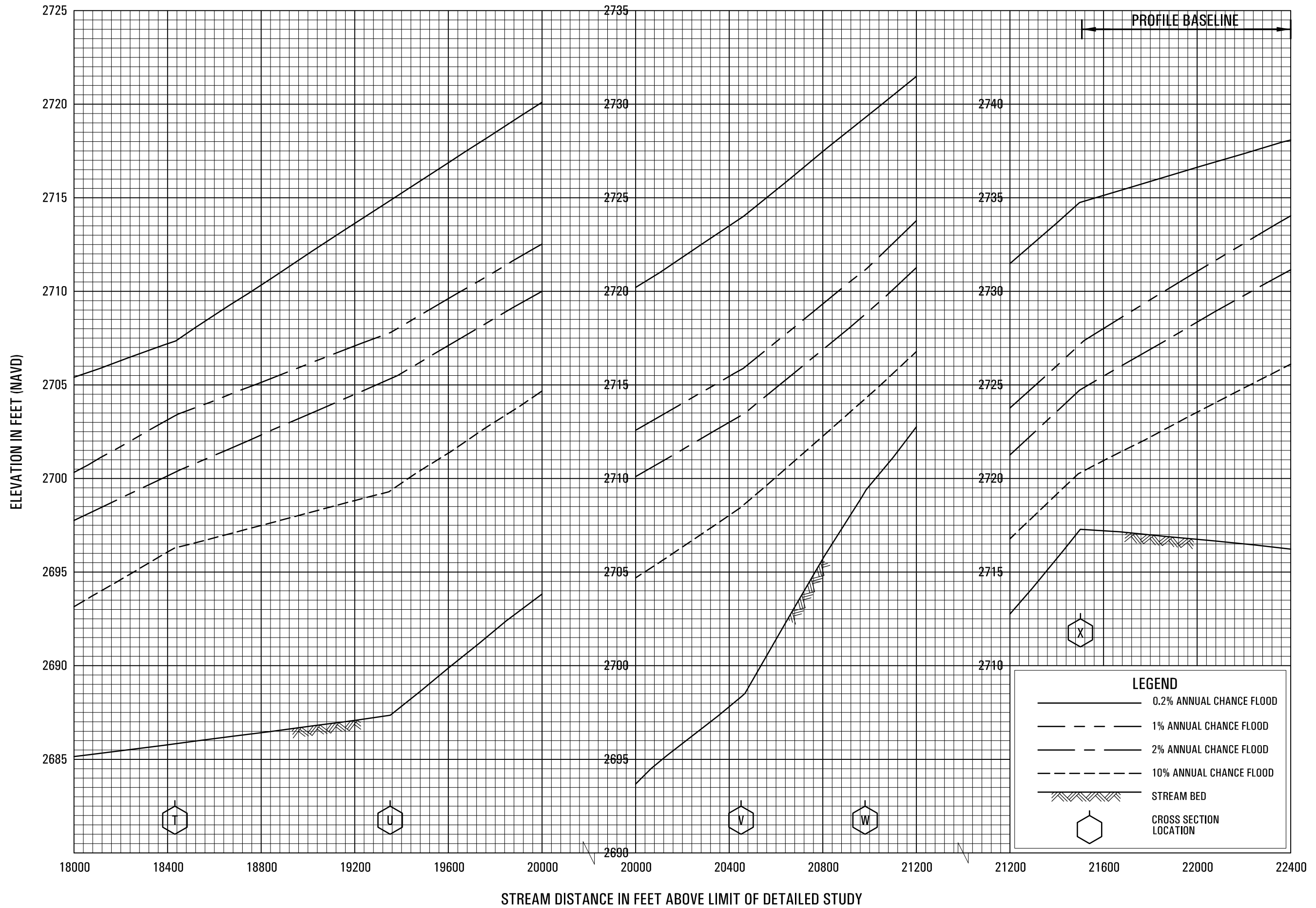


**FLOOD PROFILES**

**KERN RIVER AT KERNVILLE**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**KERN COUNTY, CA  
AND INCORPORATED AREAS**

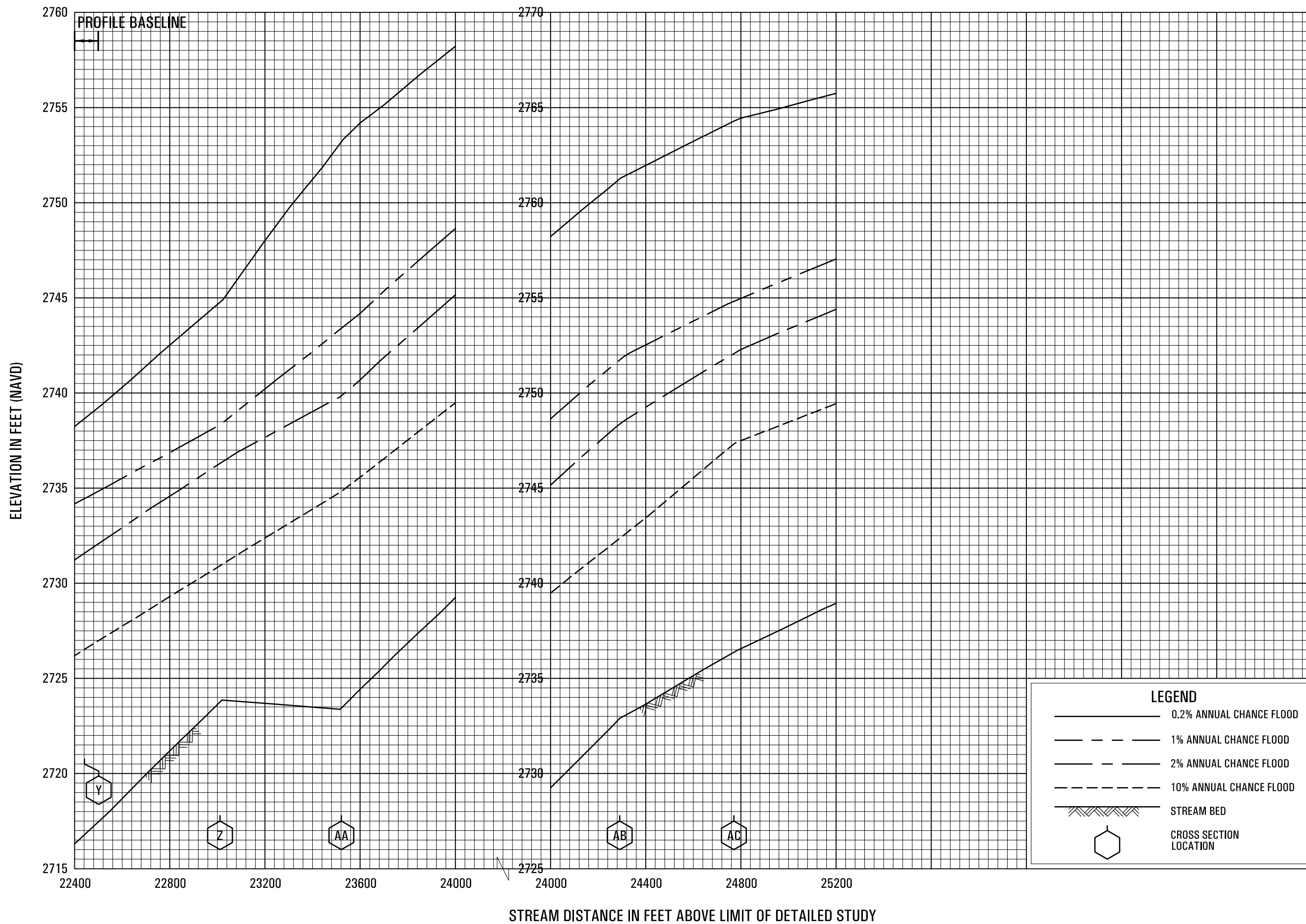


**FLOOD PROFILES**

**KERN RIVER AT KERNVILLE**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**KERN COUNTY, CA  
AND INCORPORATED AREAS**

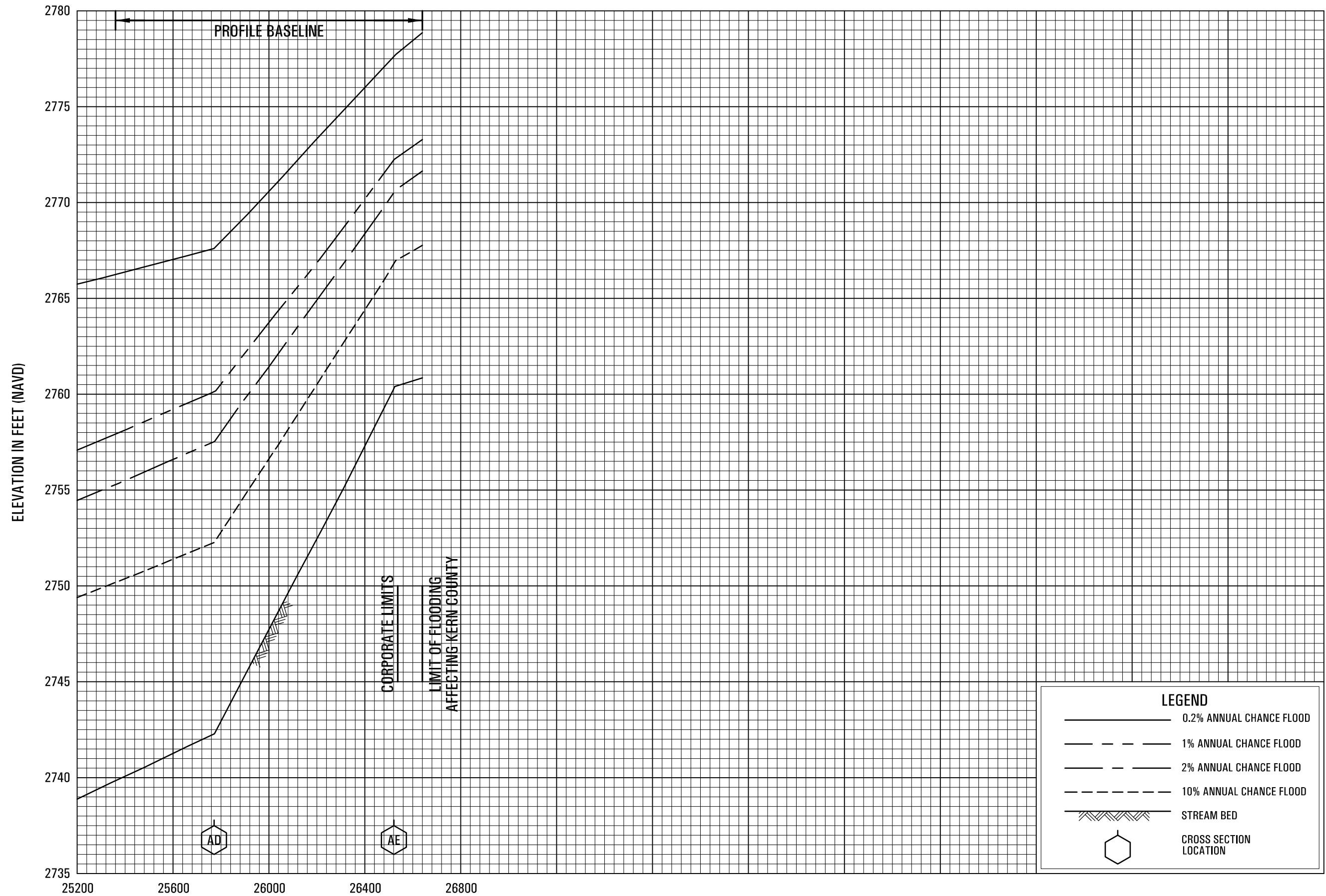


**FLOOD PROFILES**

**KERN RIVER AT KERNVILLE**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**KERN COUNTY, CA  
AND INCORPORATED AREAS**

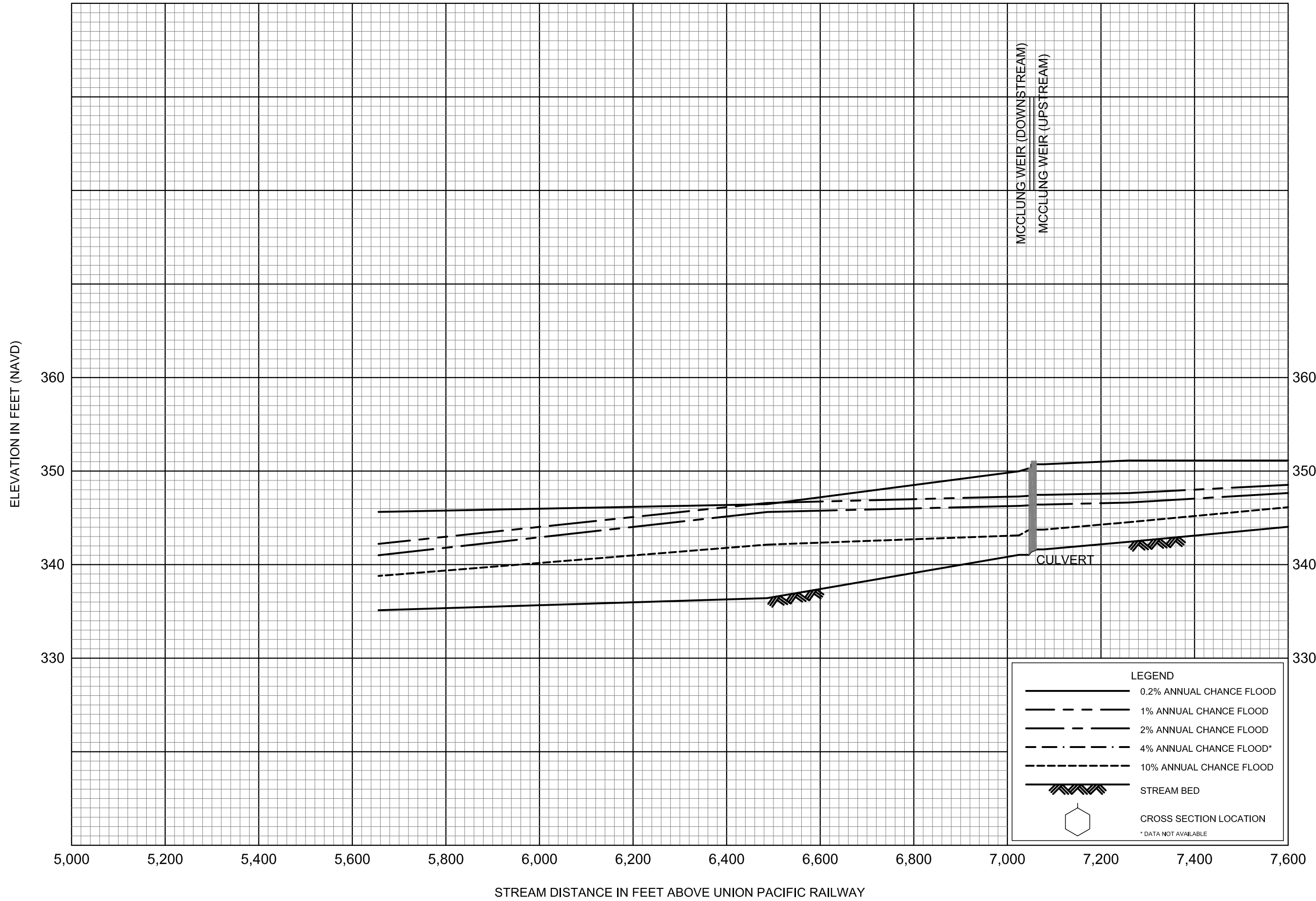


FLOOD PROFILES

KERN RIVER AT KERNVILLE

FEDERAL EMERGENCY MANAGEMENT AGENCY

KERN COUNTY, CA  
AND INCORPORATED AREAS

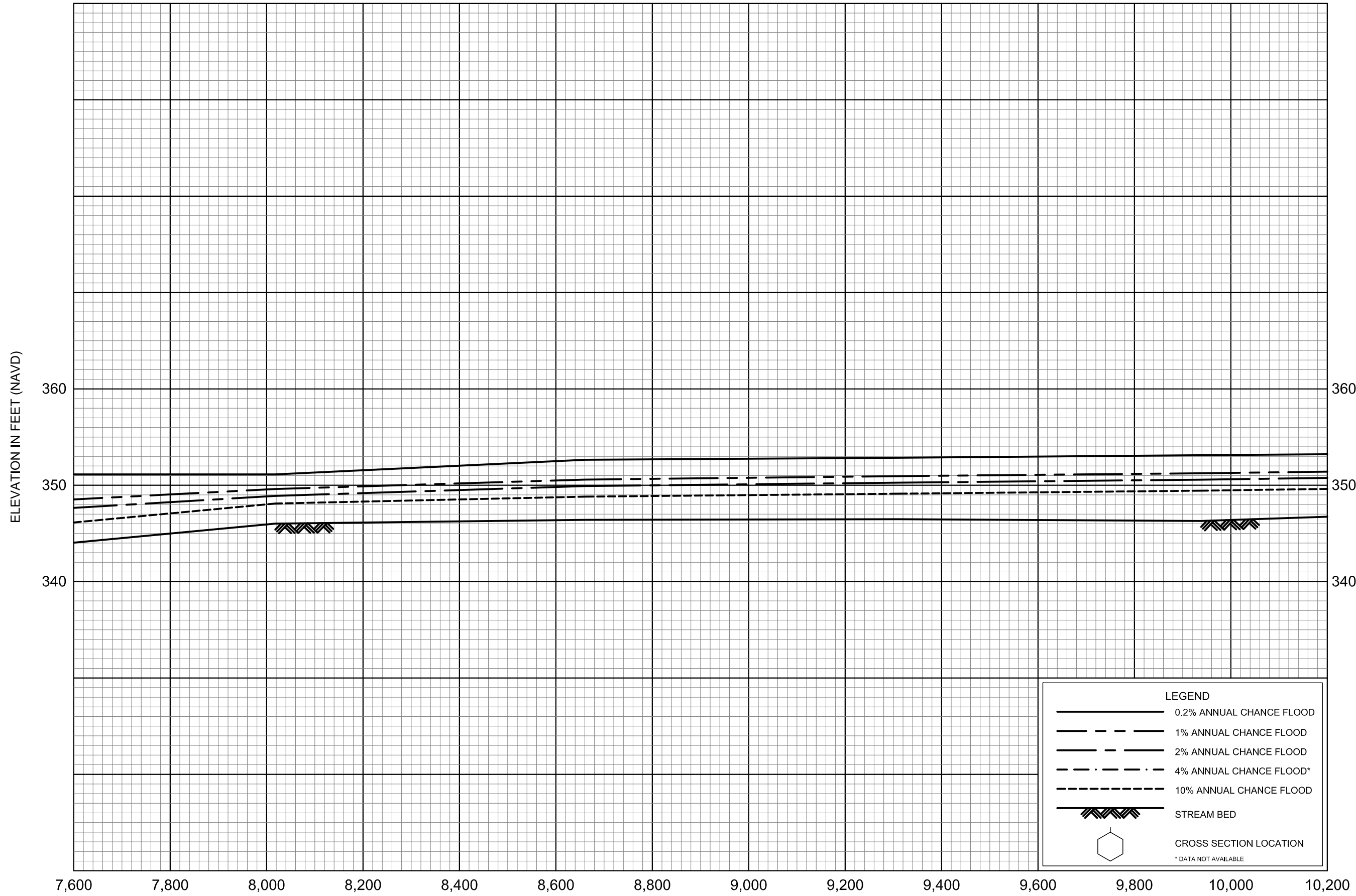


FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

KERN COUNTY, CA  
AND INCORPORATED AREAS



**LEGEND**

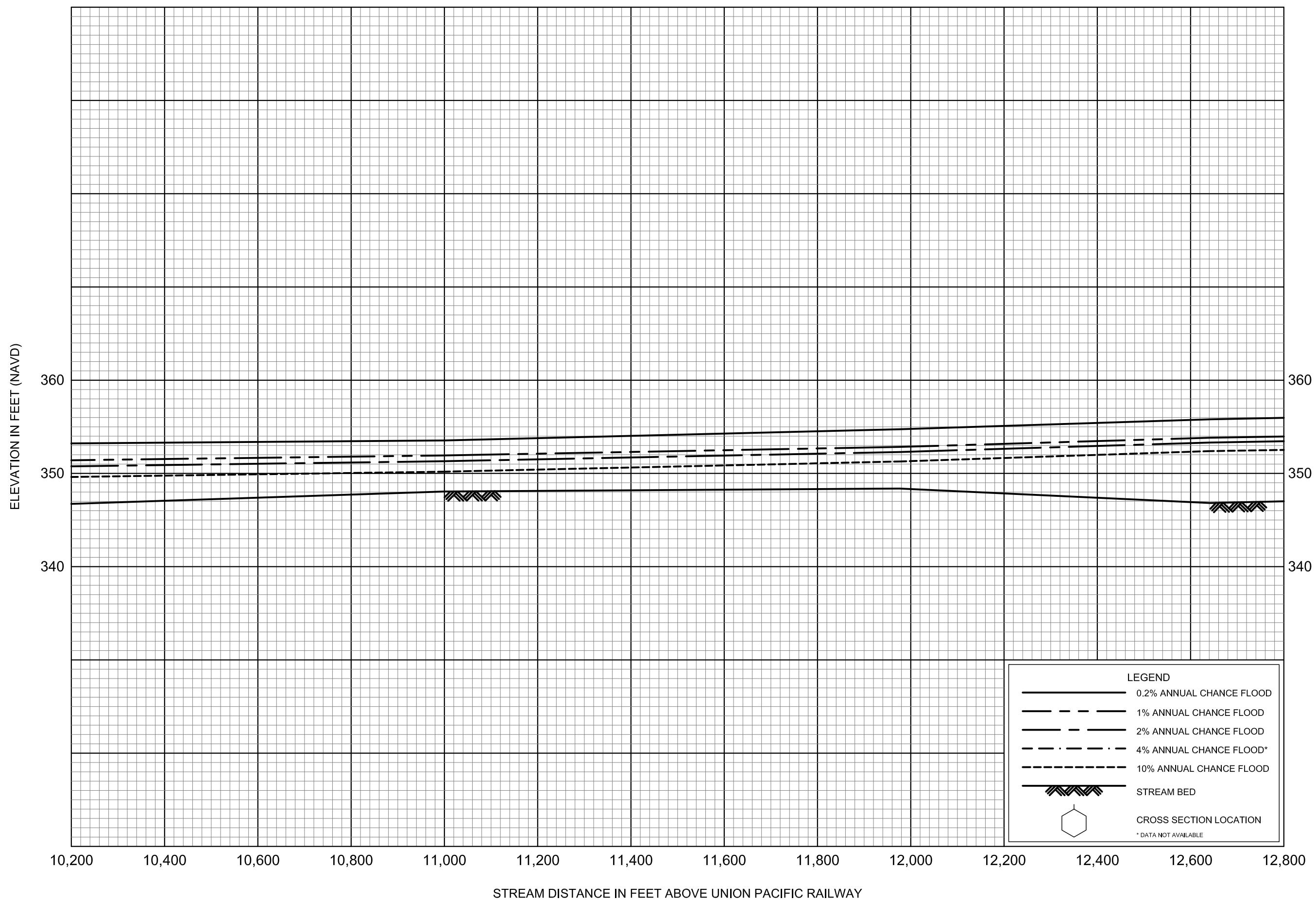
- 0.2% ANNUAL CHANCE FLOOD
- - - 1% ANNUAL CHANCE FLOOD
- · - · 2% ANNUAL CHANCE FLOOD
- · - · 4% ANNUAL CHANCE FLOOD\*
- · - · 10% ANNUAL CHANCE FLOOD
- [hatched pattern] — STREAM BED
- [hexagon symbol] CROSS SECTION LOCATION

\* DATA NOT AVAILABLE

**FLOOD PROFILES**

**KERN RIVER - WITH CONSIDERATION OF LEVEES**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS



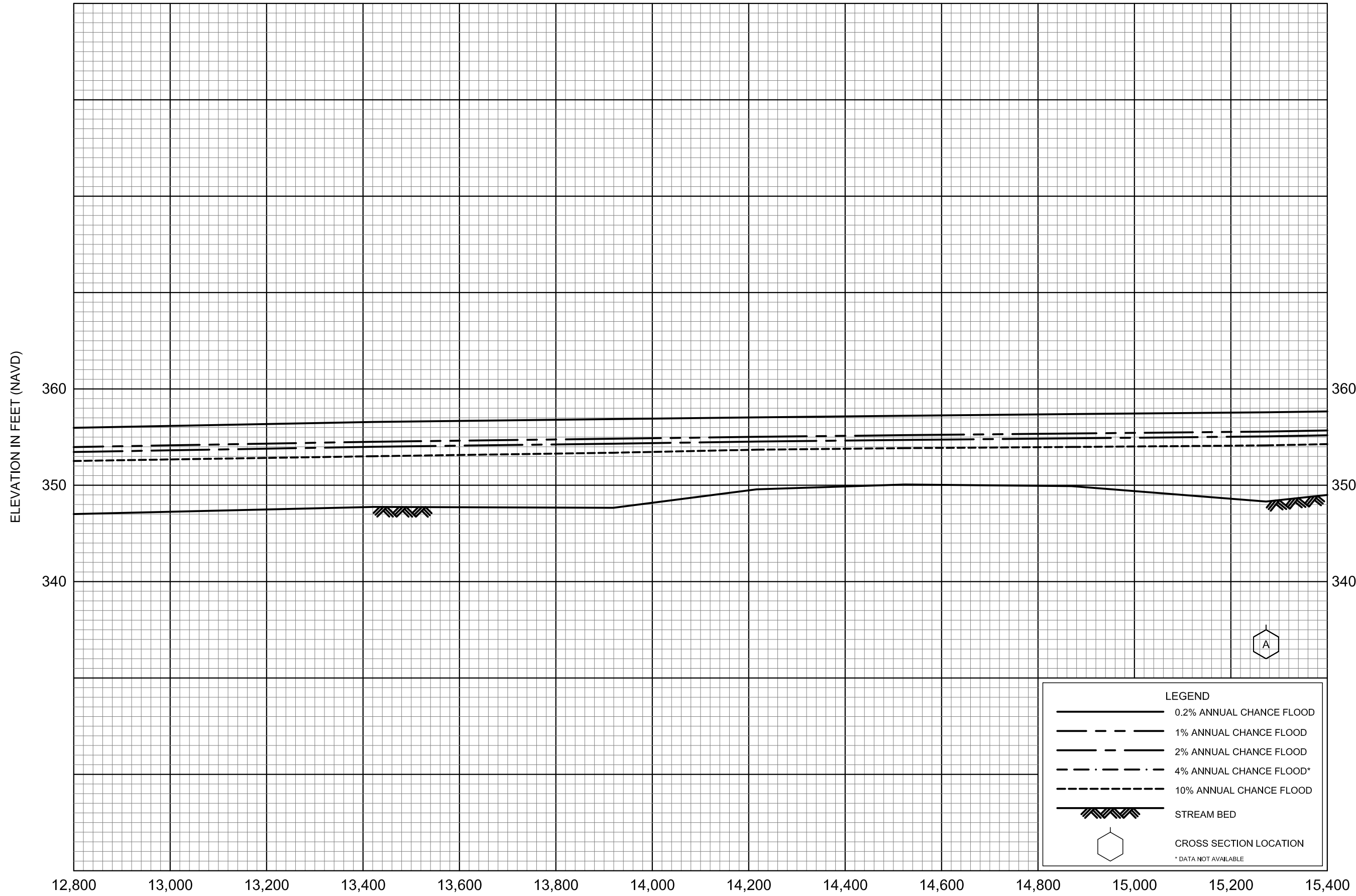
FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

KERN COUNTY, CA  
AND INCORPORATED AREAS

88P(c)



STREAM DISTANCE IN FEET ABOVE UNION PACIFIC RAILWAY

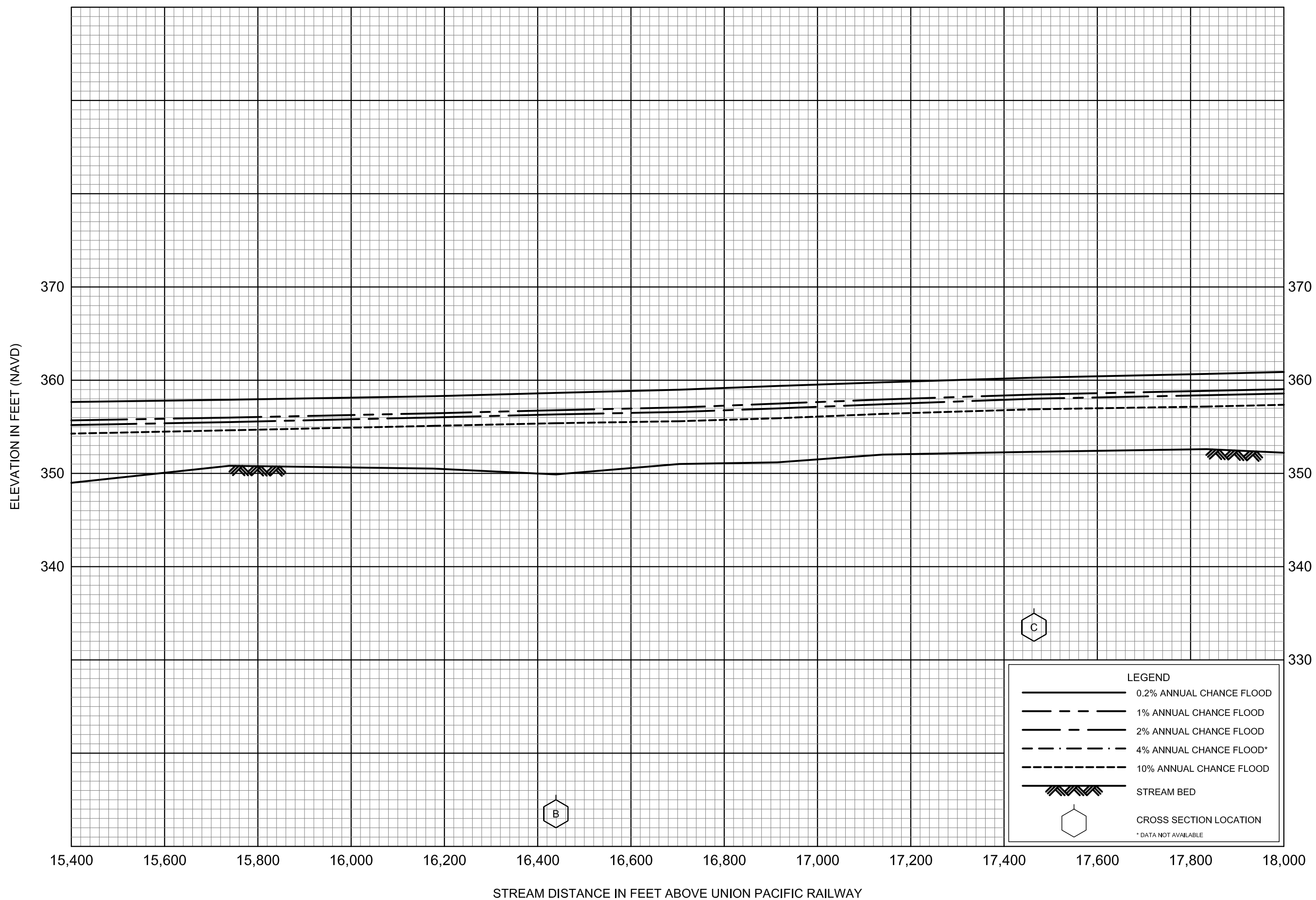
FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

KERN COUNTY, CA  
AND INCORPORATED AREAS



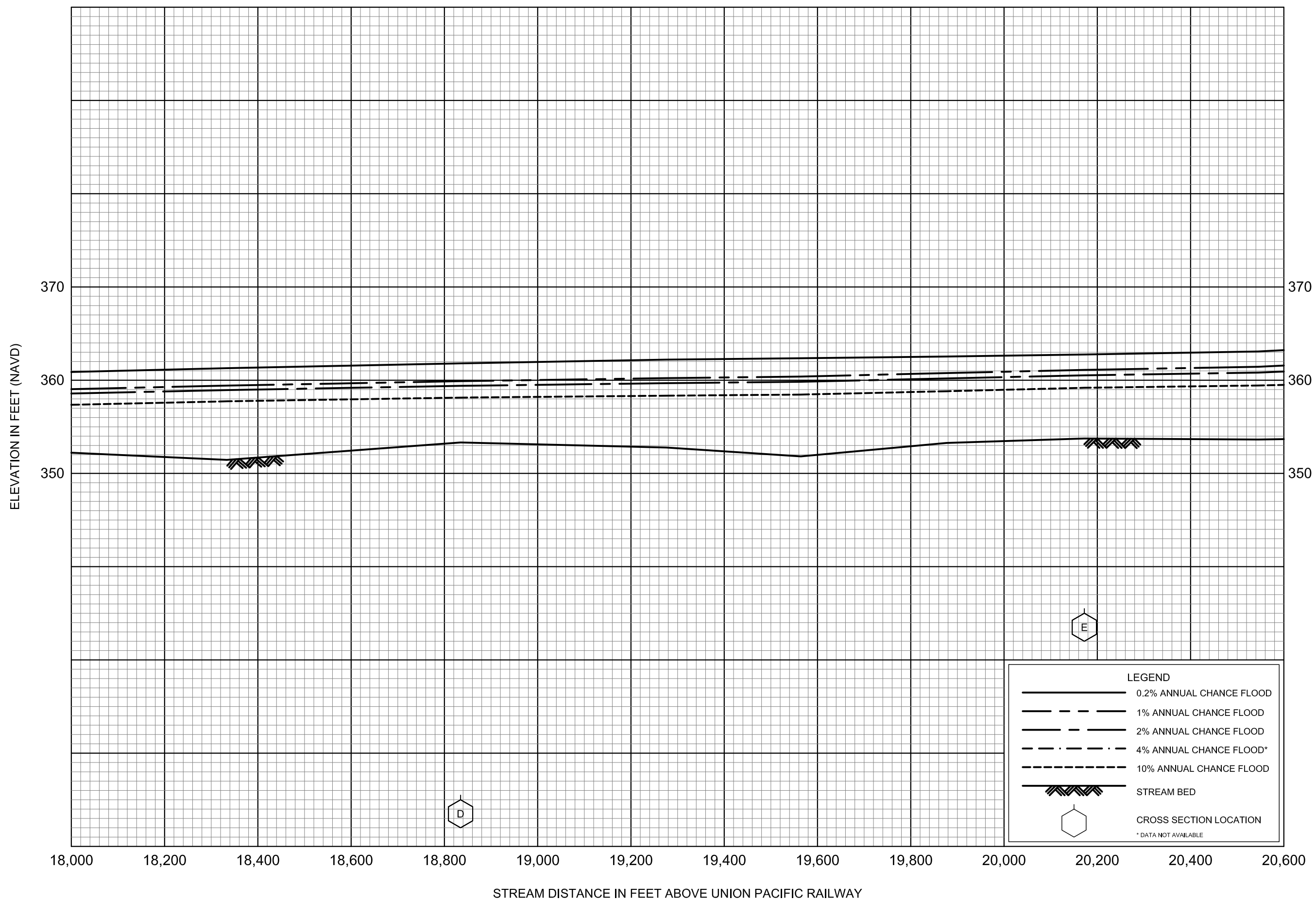


FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

KERN COUNTY, CA  
AND INCORPORATED AREAS

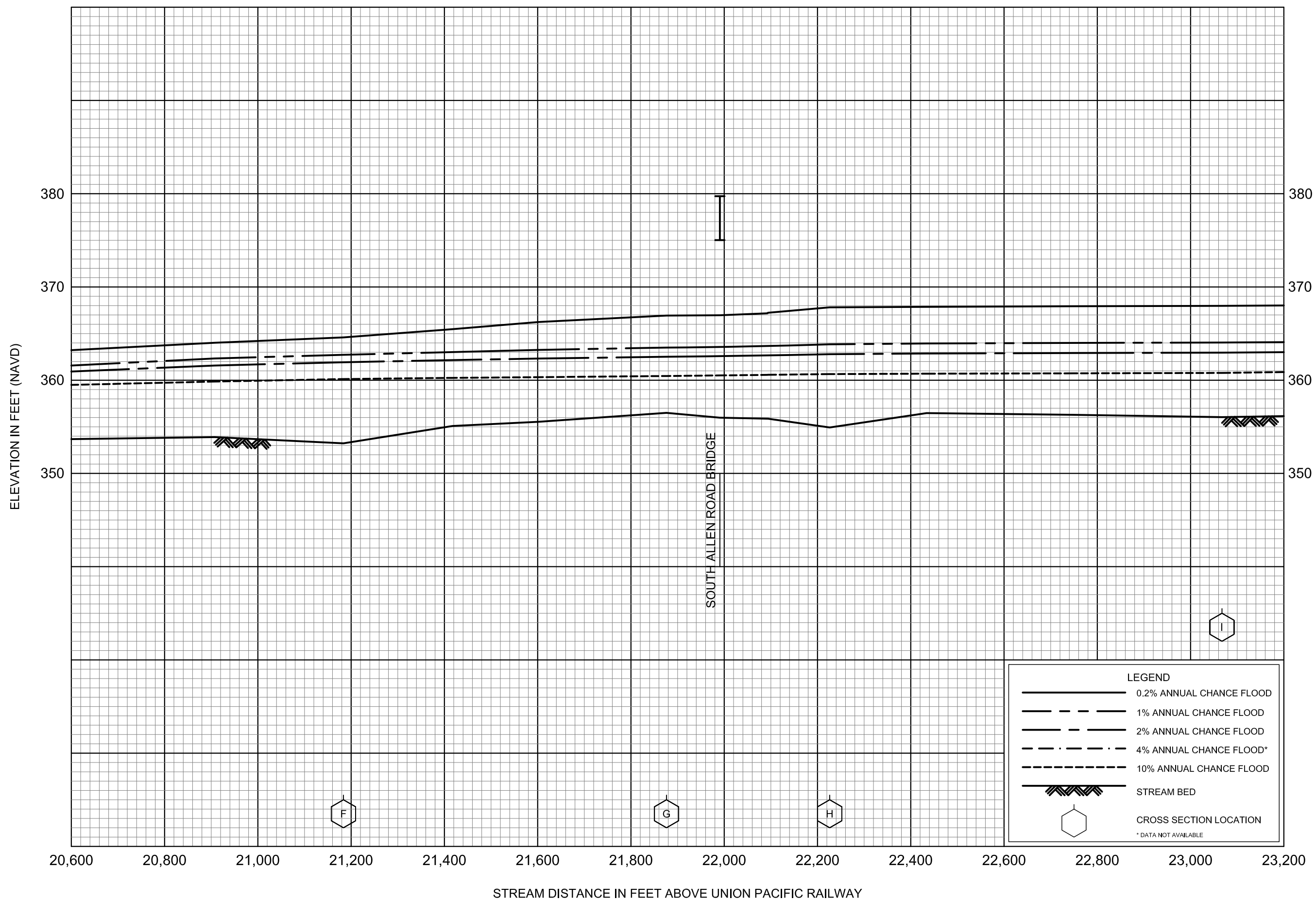


FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

KERN COUNTY, CA  
AND INCORPORATED AREAS

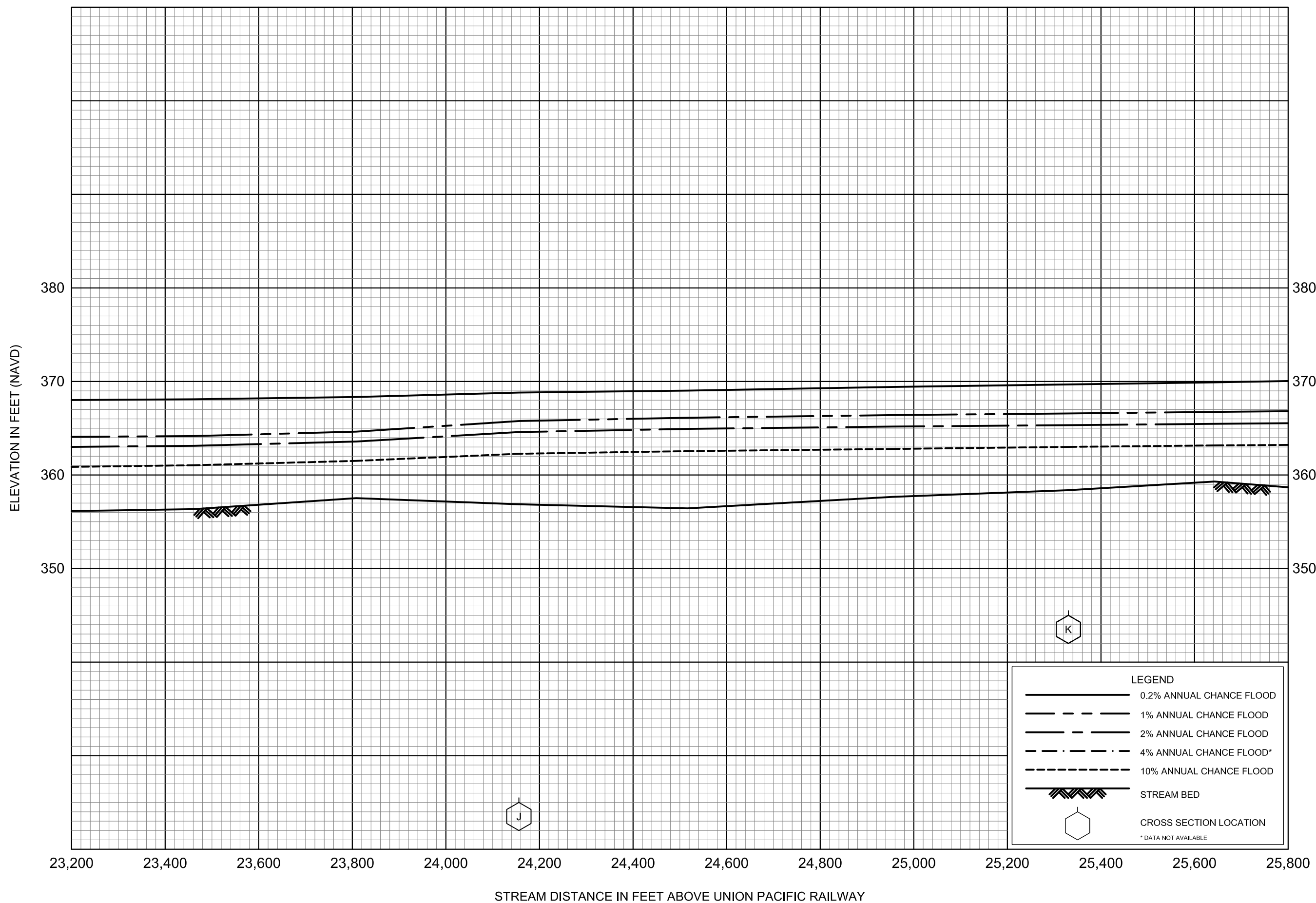


FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

KERN COUNTY, CA  
AND INCORPORATED AREAS



FLOOD PROFILES

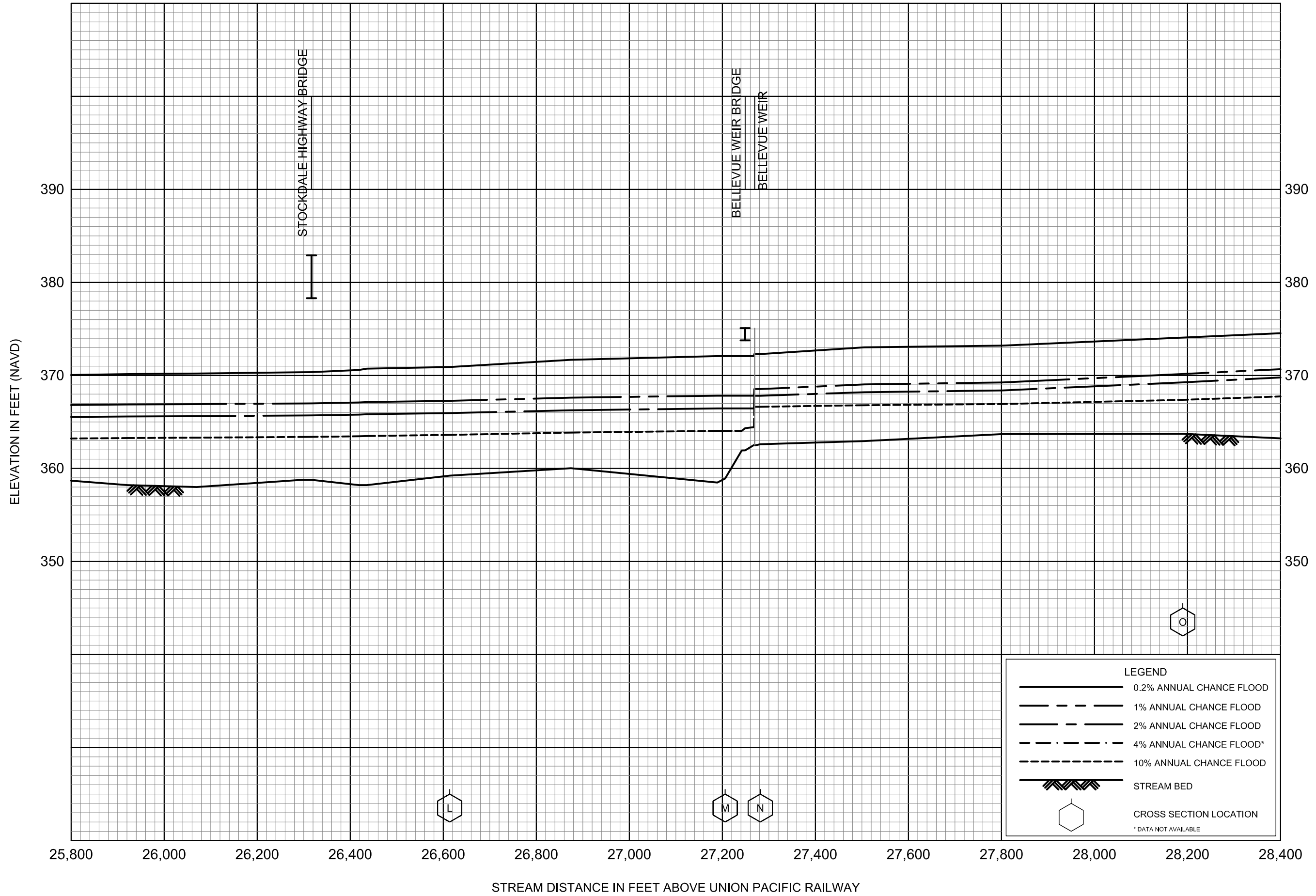
KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY  
 KERN COUNTY, CA  
 AND INCORPORATED AREAS

**LEGEND**

- 0.2% ANNUAL CHANCE FLOOD
- - - 1% ANNUAL CHANCE FLOOD
- · - · 2% ANNUAL CHANCE FLOOD
- - - - 4% ANNUAL CHANCE FLOOD\*
- - - - 10% ANNUAL CHANCE FLOOD
- STREAM BED
- ⬡ CROSS SECTION LOCATION

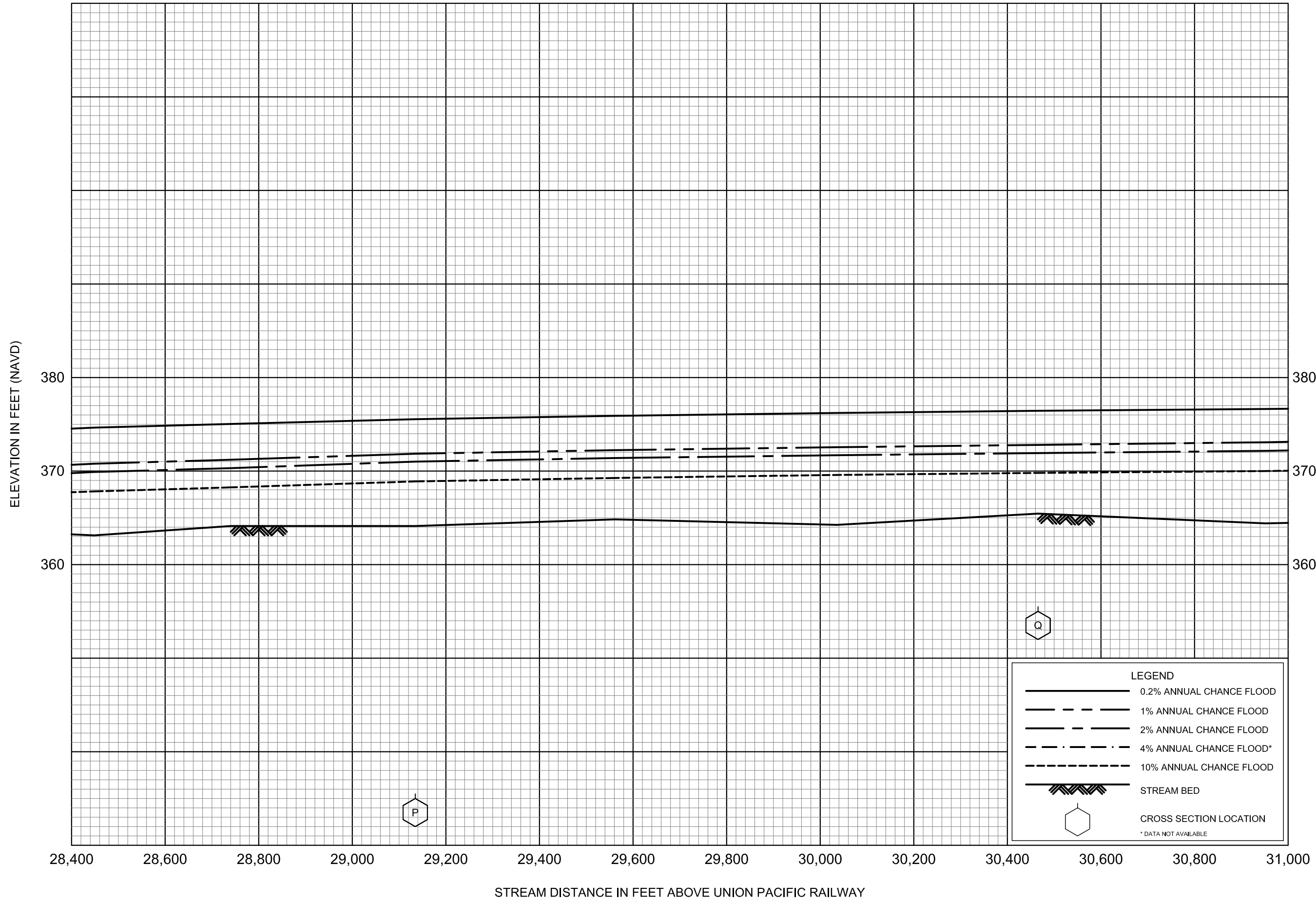
\* DATA NOT AVAILABLE



FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS

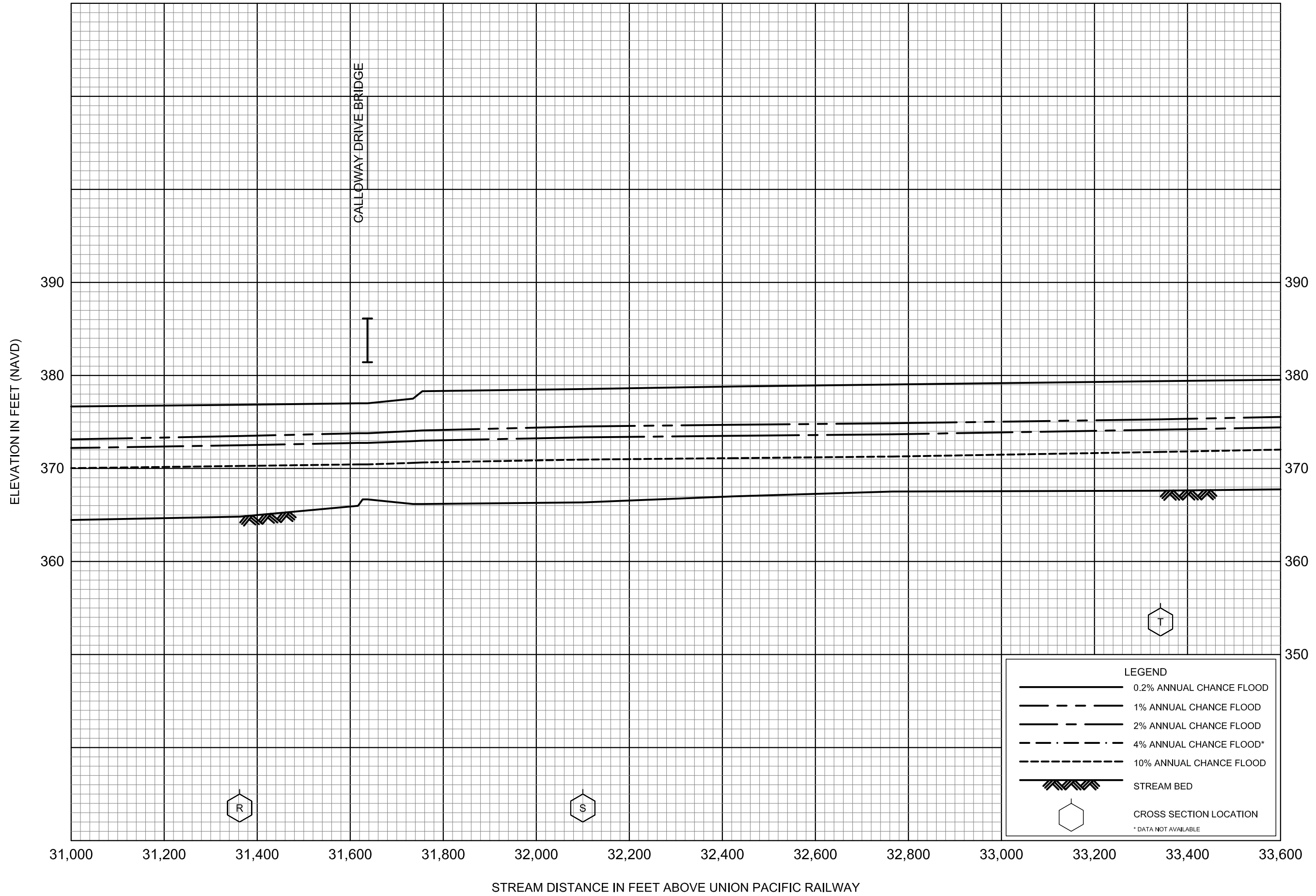


FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

KERN COUNTY, CA  
AND INCORPORATED AREAS

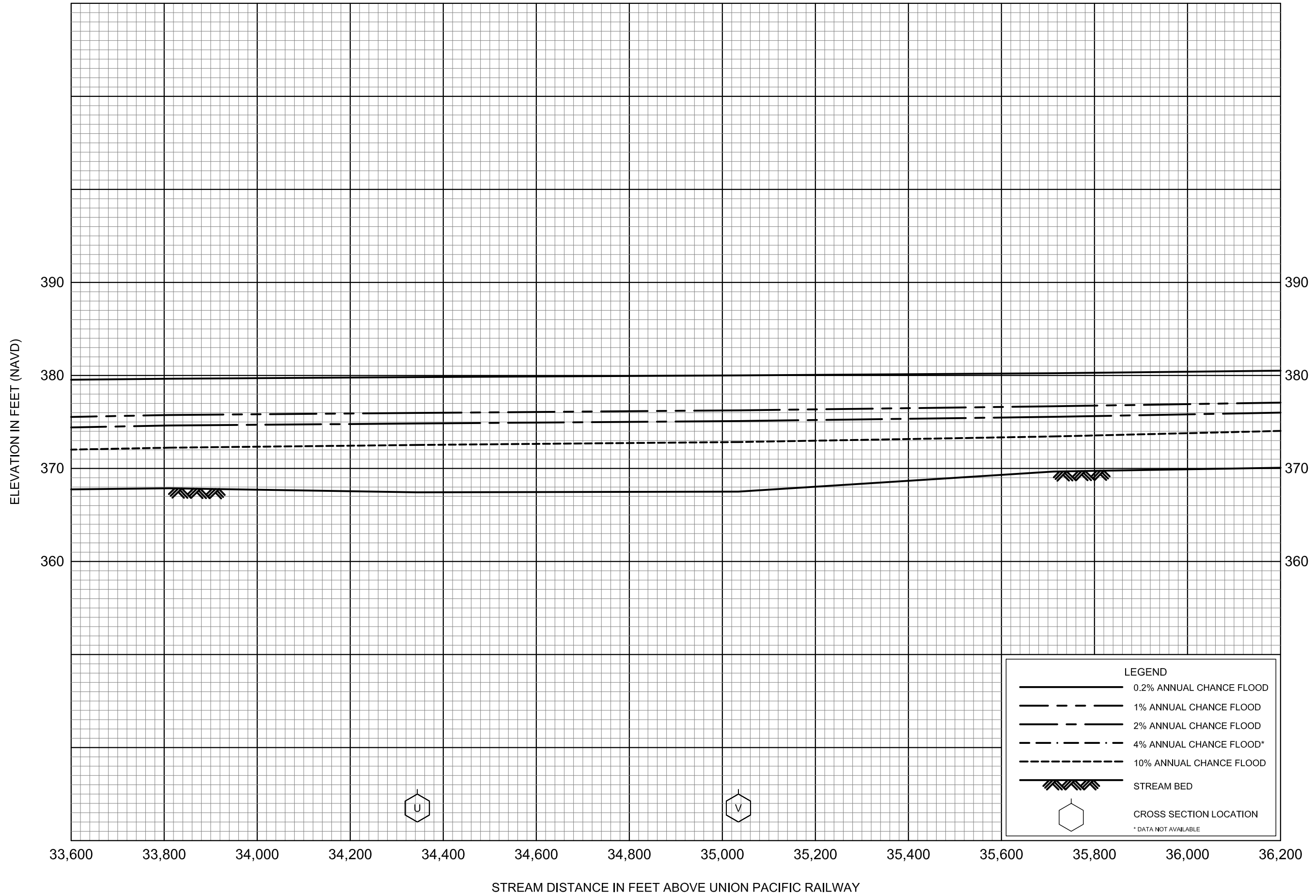


FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

KERN COUNTY, CA  
AND INCORPORATED AREAS



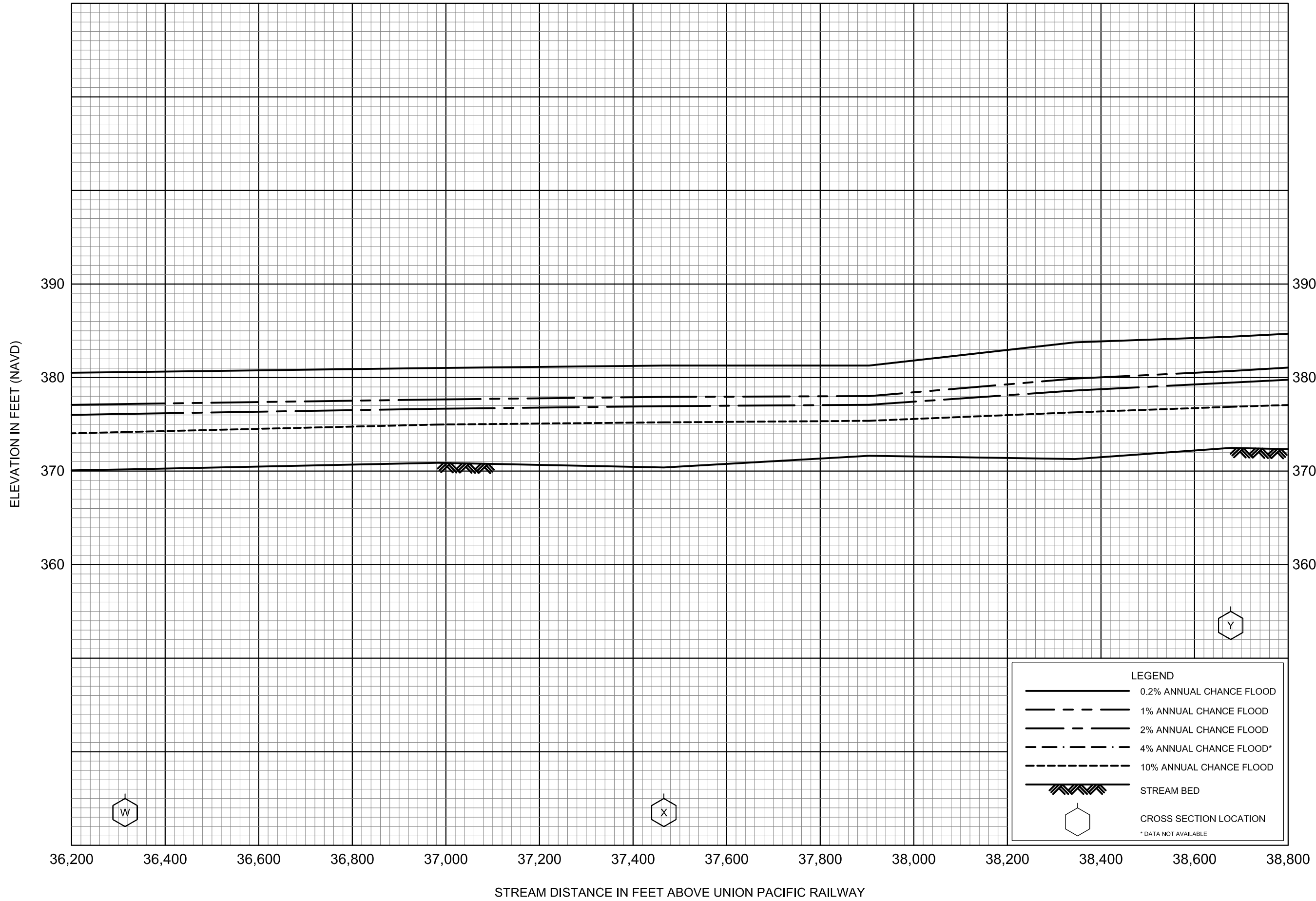
FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

KERN COUNTY, CA  
AND INCORPORATED AREAS

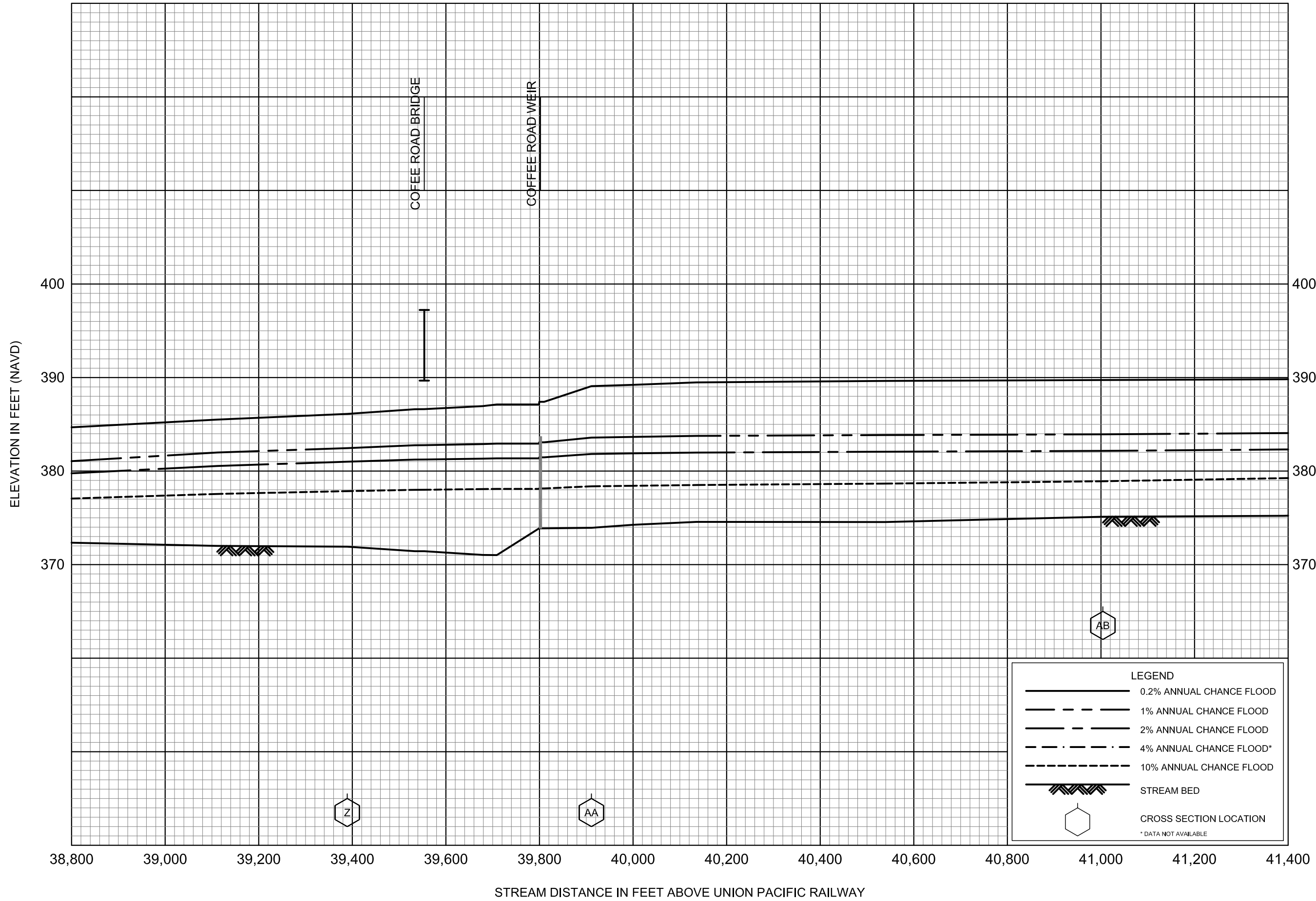




FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

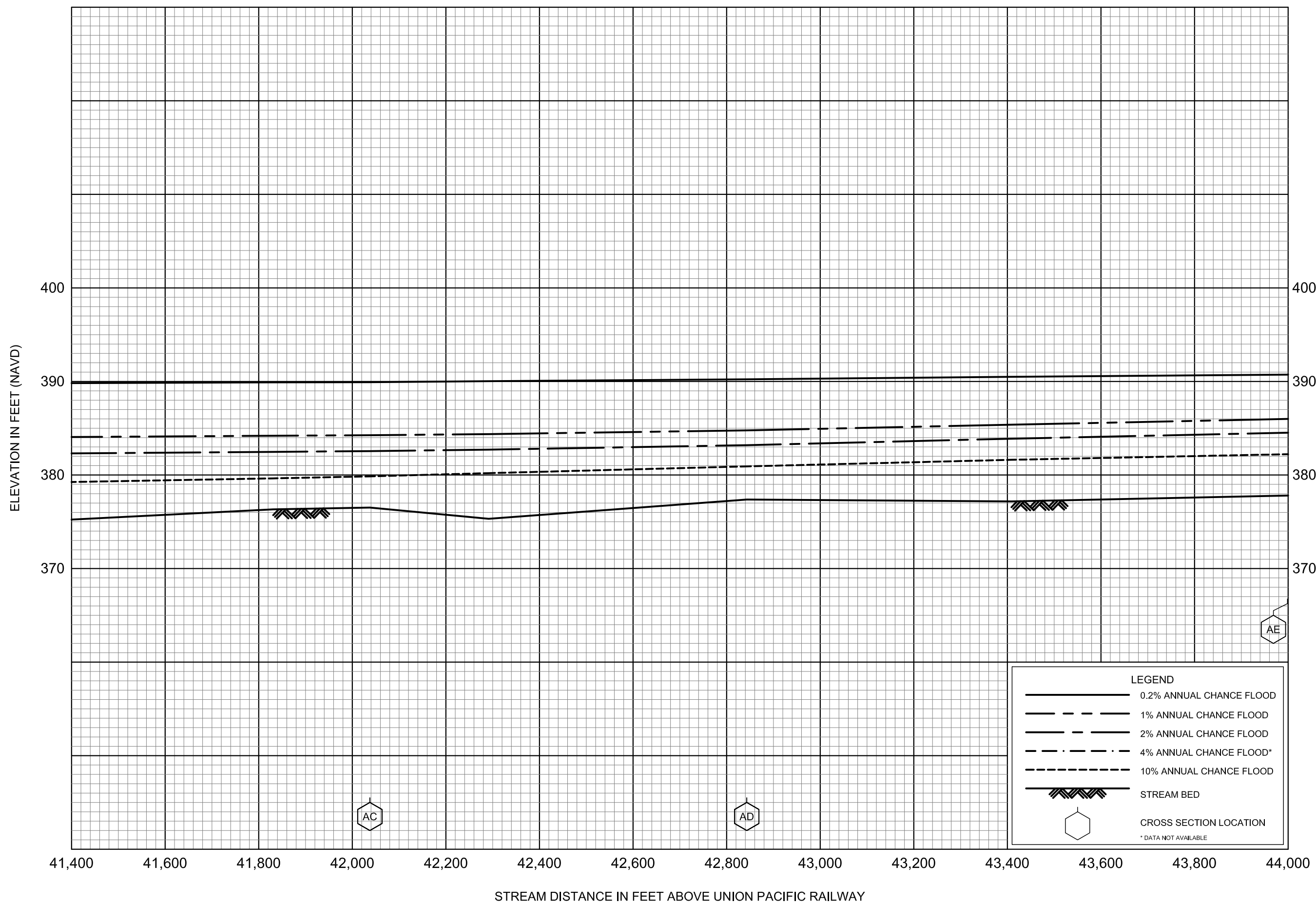
FEDERAL EMERGENCY MANAGEMENT AGENCY  
 KERN COUNTY, CA  
 AND INCORPORATED AREAS



FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY  
 KERN COUNTY, CA  
 AND INCORPORATED AREAS

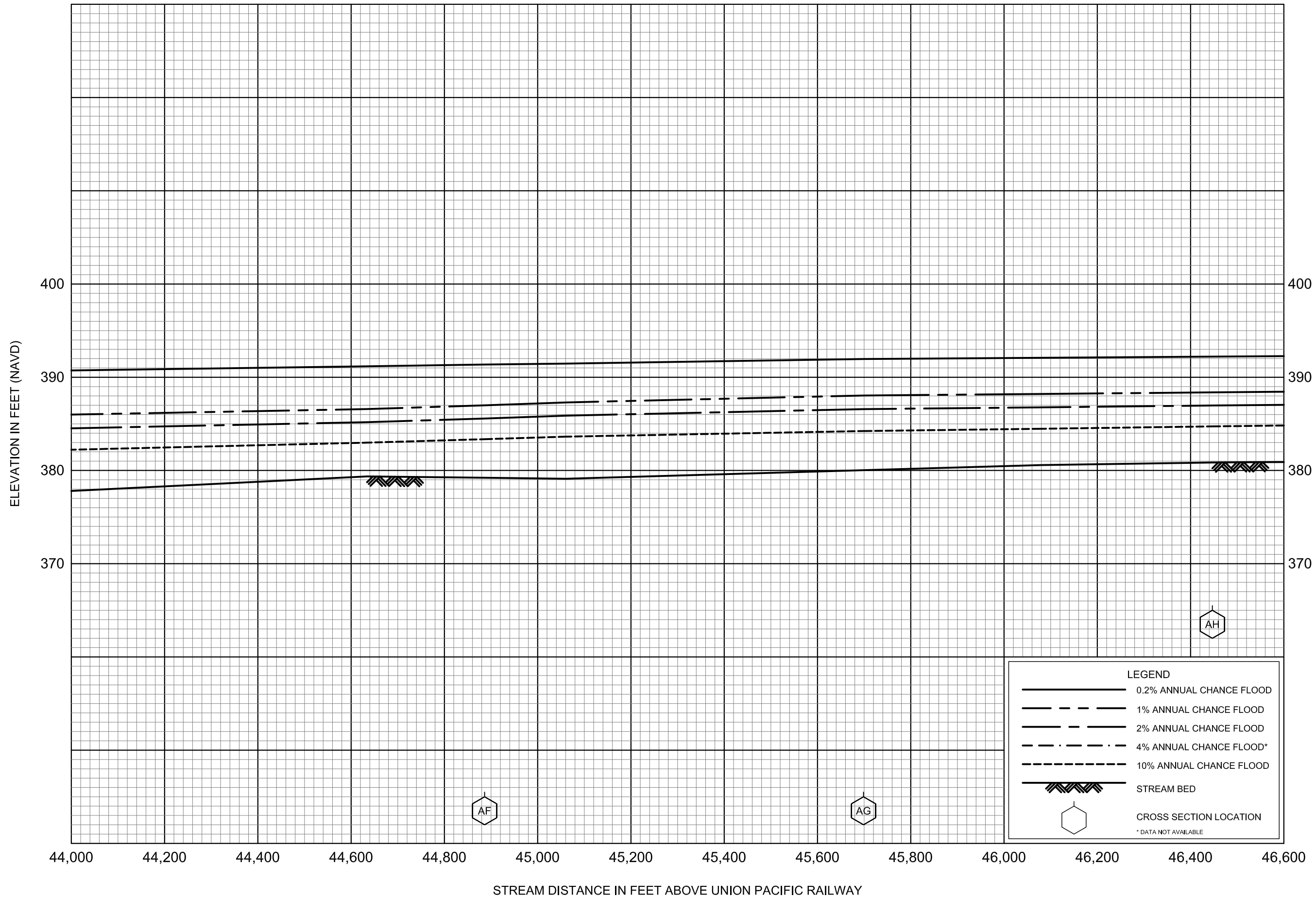


FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

KERN COUNTY, CA  
AND INCORPORATED AREAS



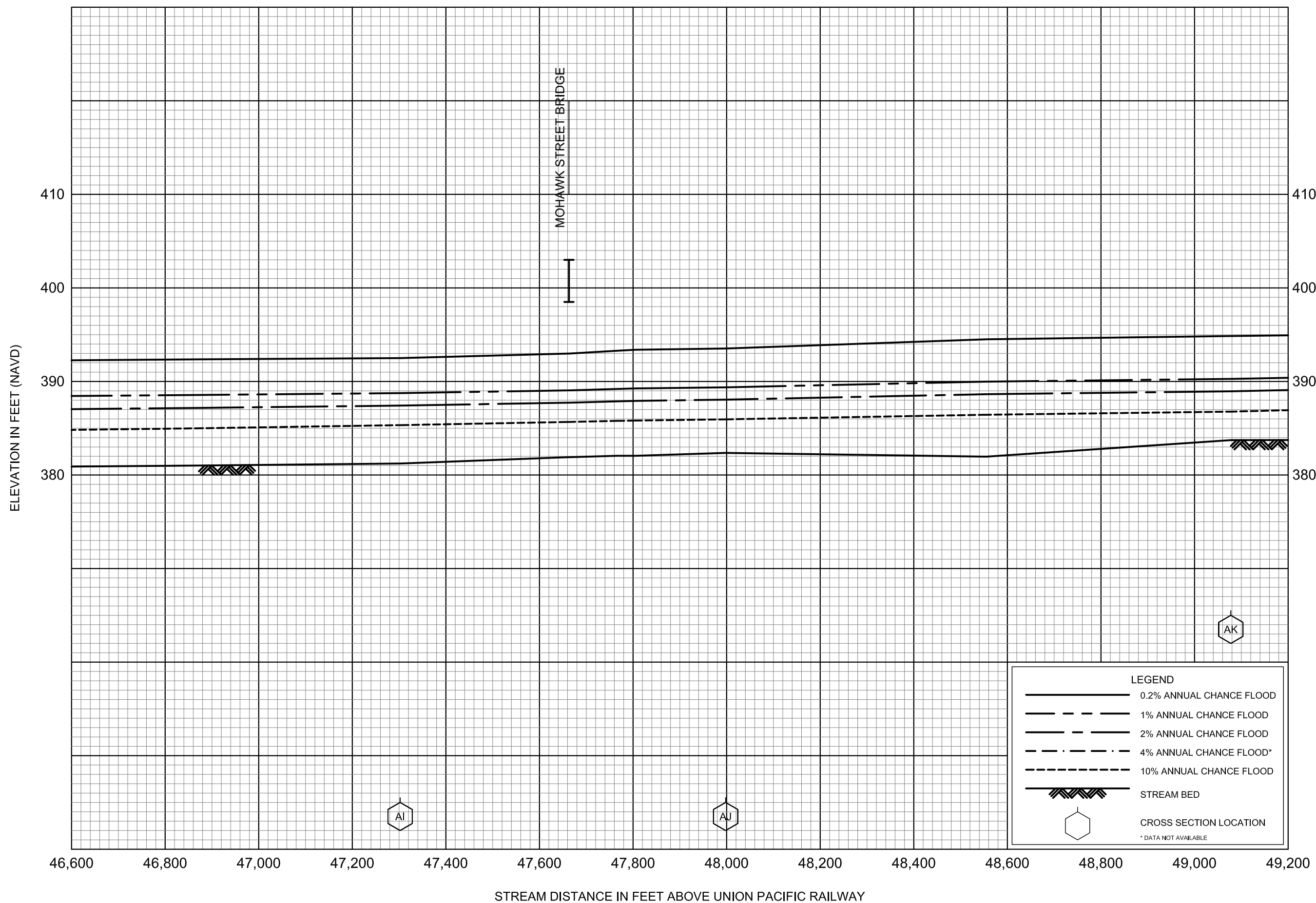
**LEGEND**

	0.2% ANNUAL CHANCE FLOOD
	1% ANNUAL CHANCE FLOOD
	2% ANNUAL CHANCE FLOOD
	4% ANNUAL CHANCE FLOOD*
	10% ANNUAL CHANCE FLOOD
	STREAM BED
	CROSS SECTION LOCATION
	* DATA NOT AVAILABLE

FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY  
 KERN COUNTY, CA  
 AND INCORPORATED AREAS

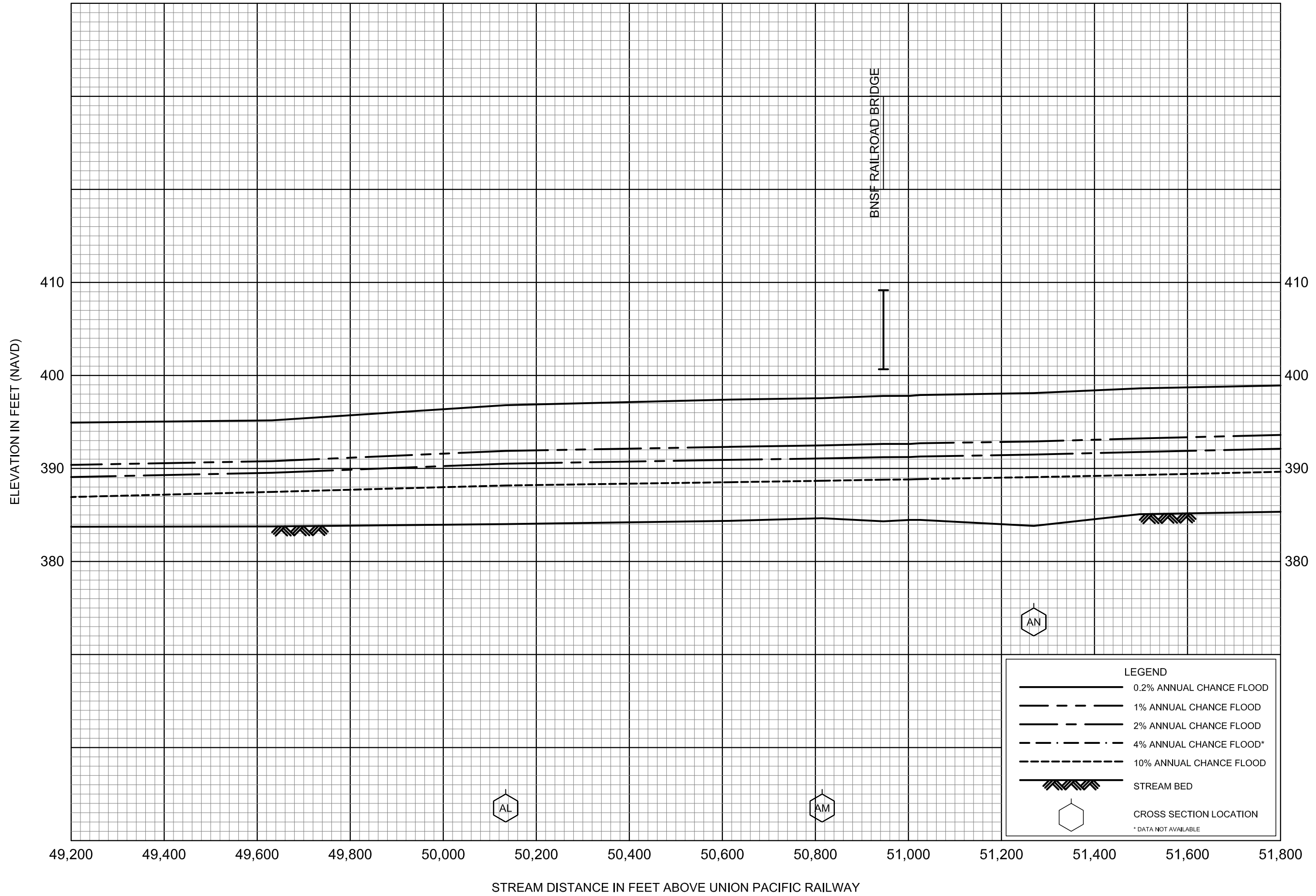


FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

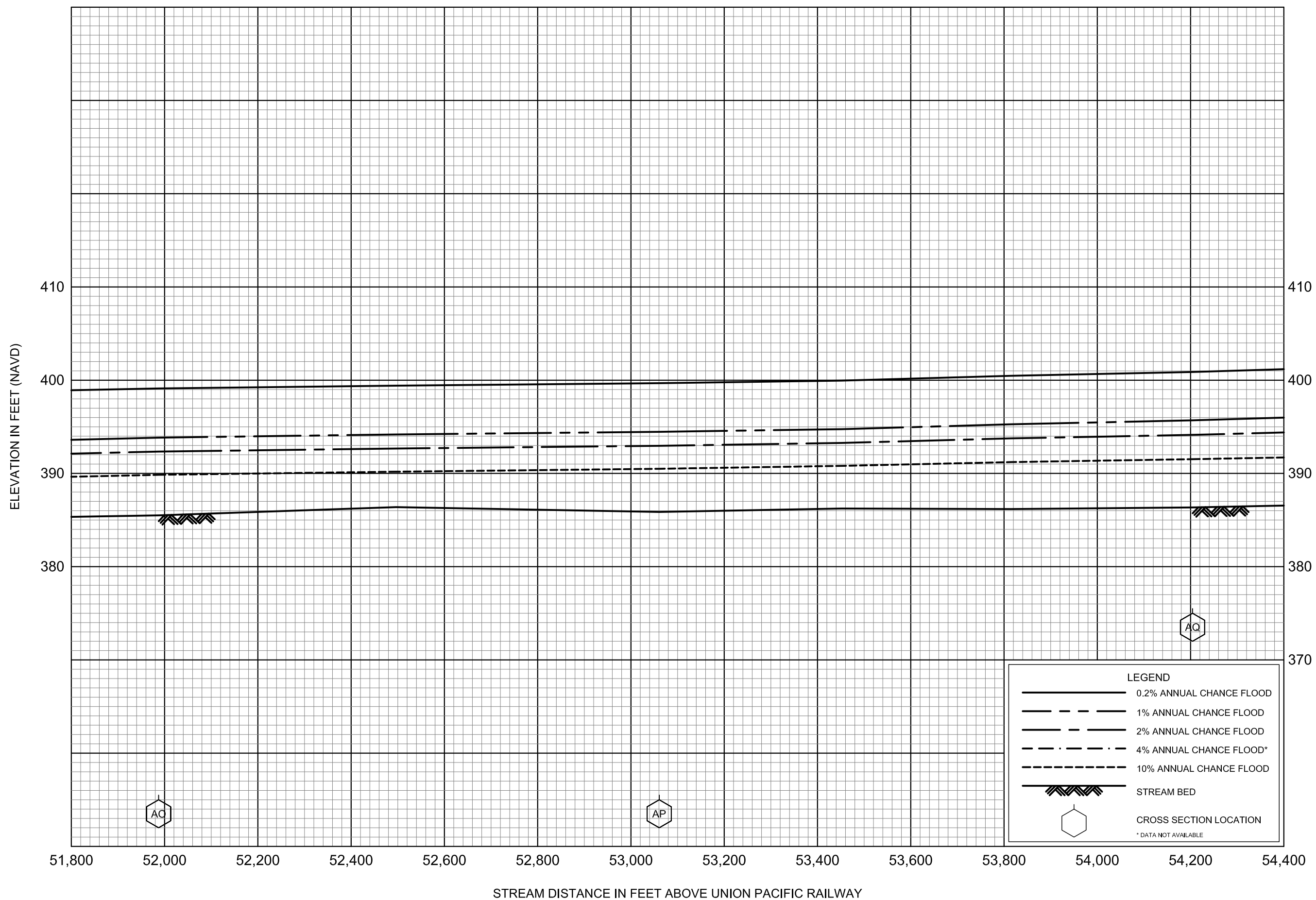
KERN COUNTY, CA  
AND INCORPORATED AREAS



FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS

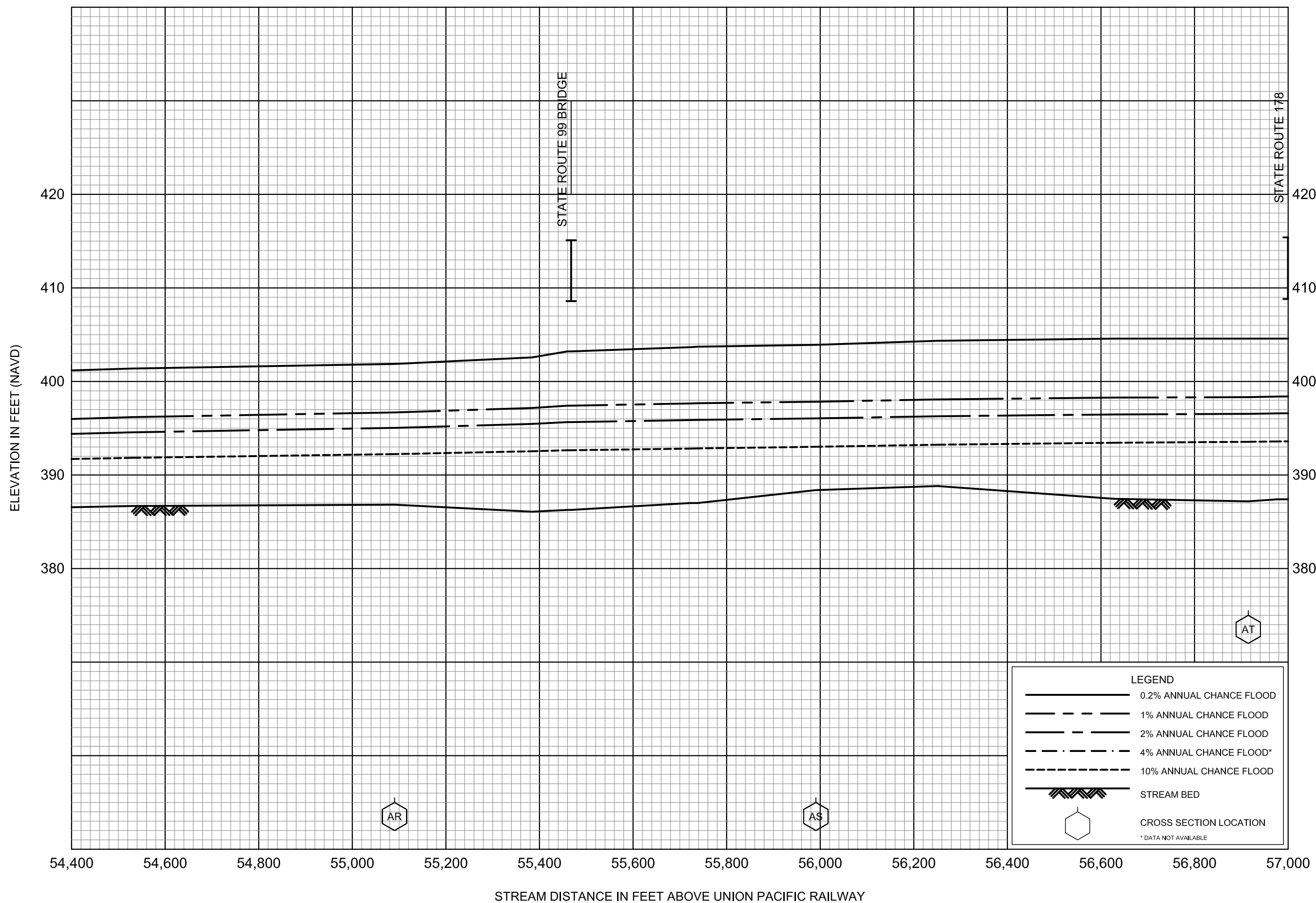


FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

KERN COUNTY, CA  
AND INCORPORATED AREAS



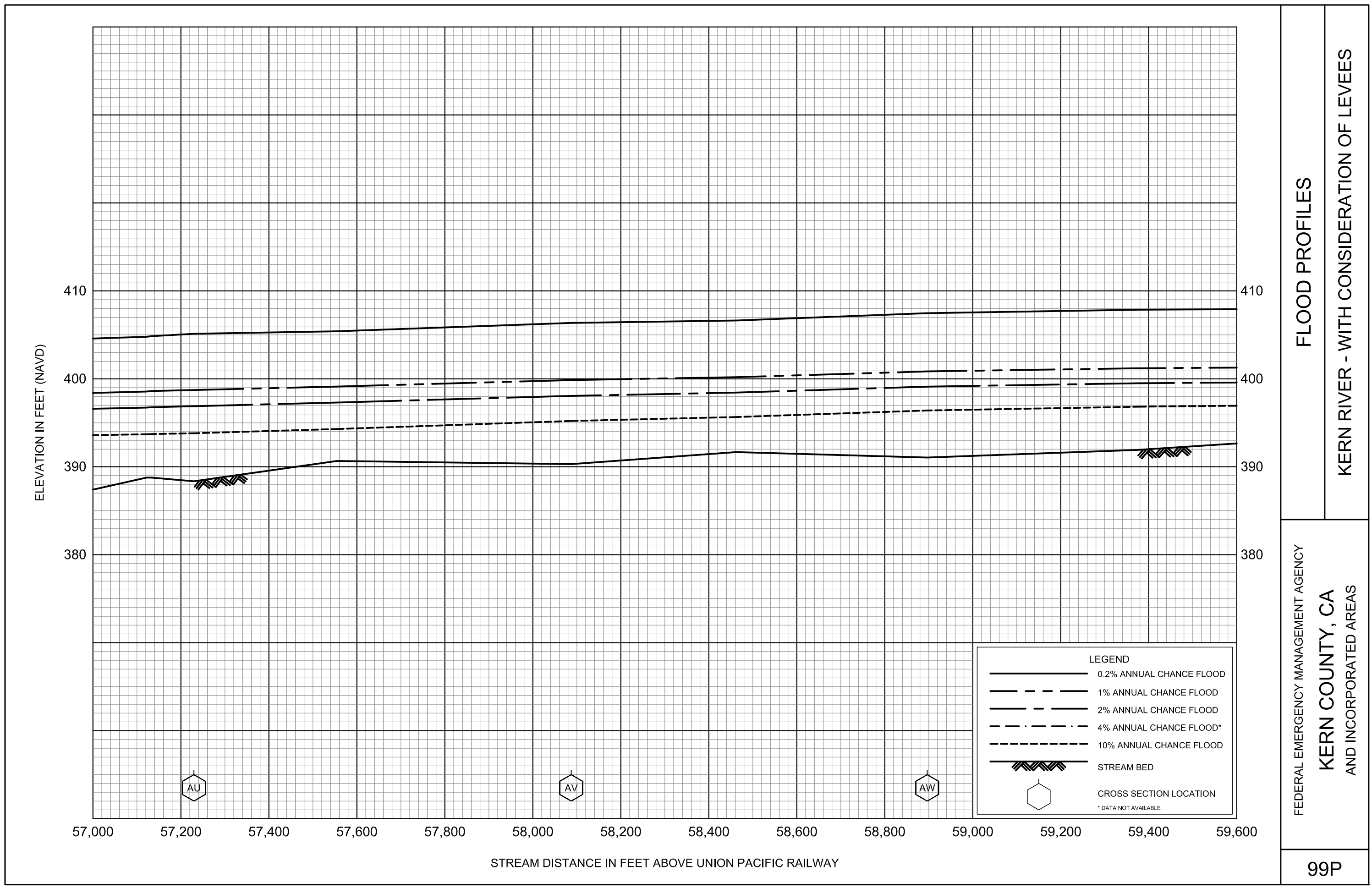
FLOOD PROFILES

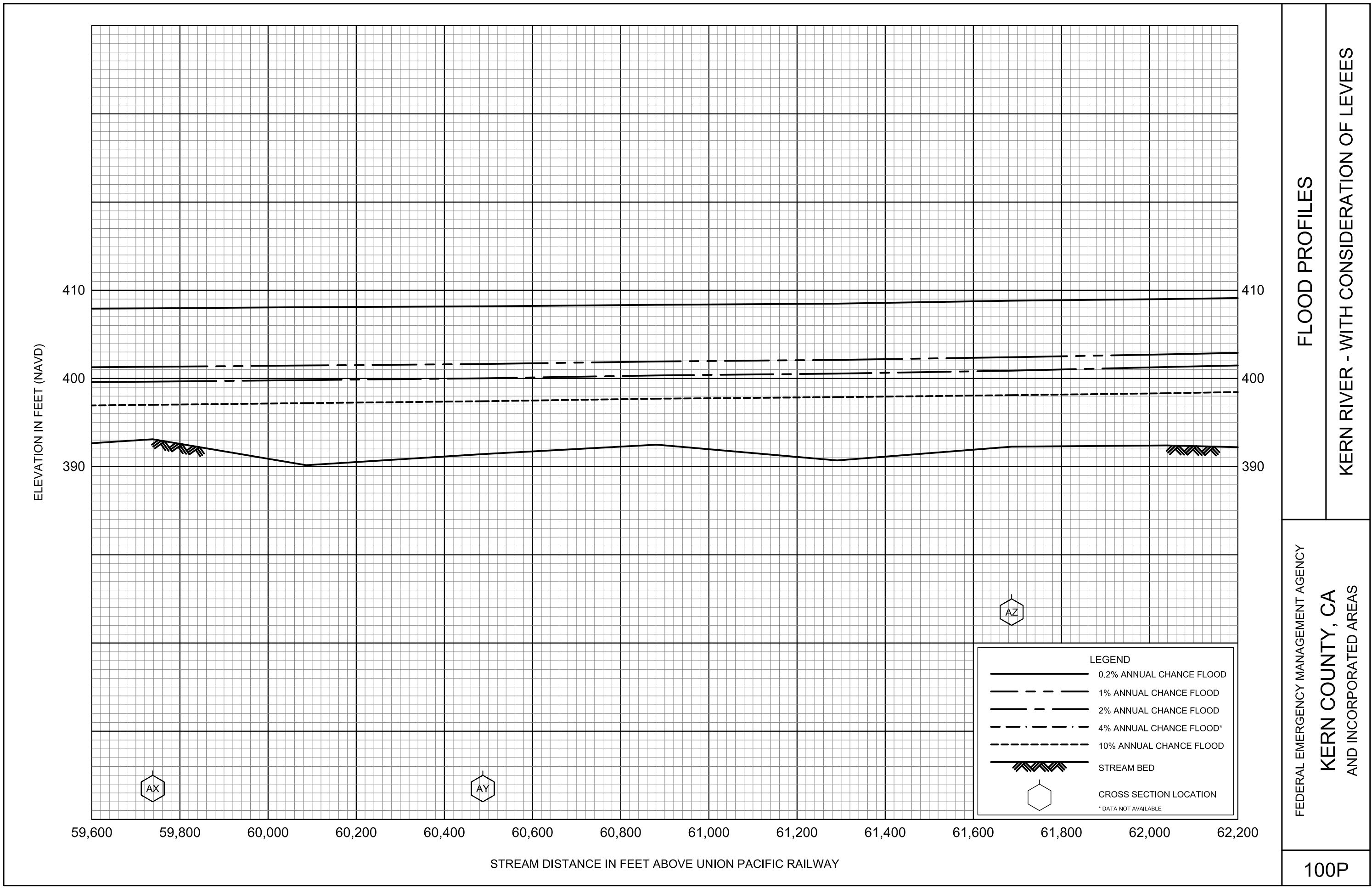
KERN RIVER - WITH CONSIDERATION OF LEVEES

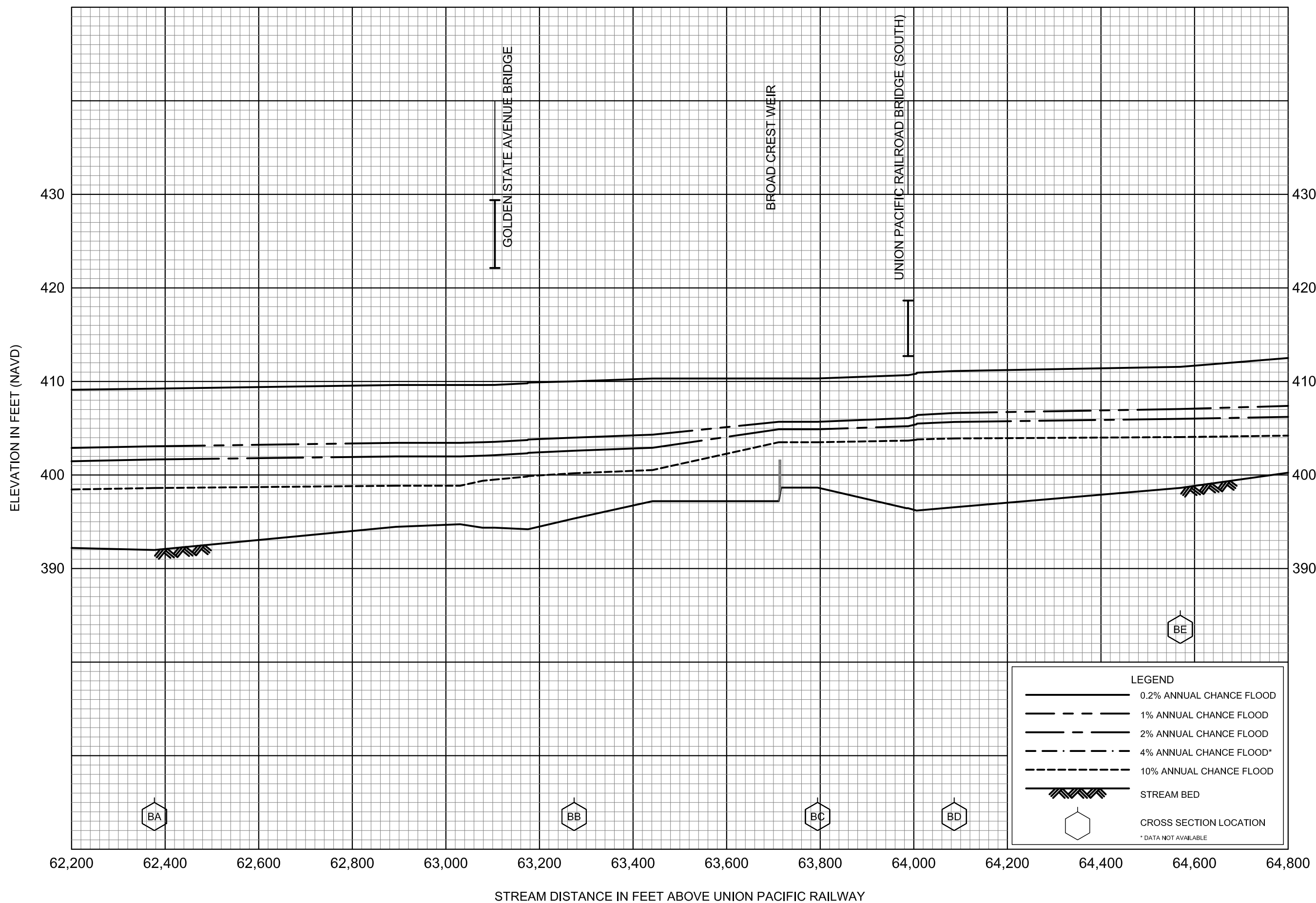
FEDERAL EMERGENCY MANAGEMENT AGENCY

KERN COUNTY, CA  
AND INCORPORATED AREAS







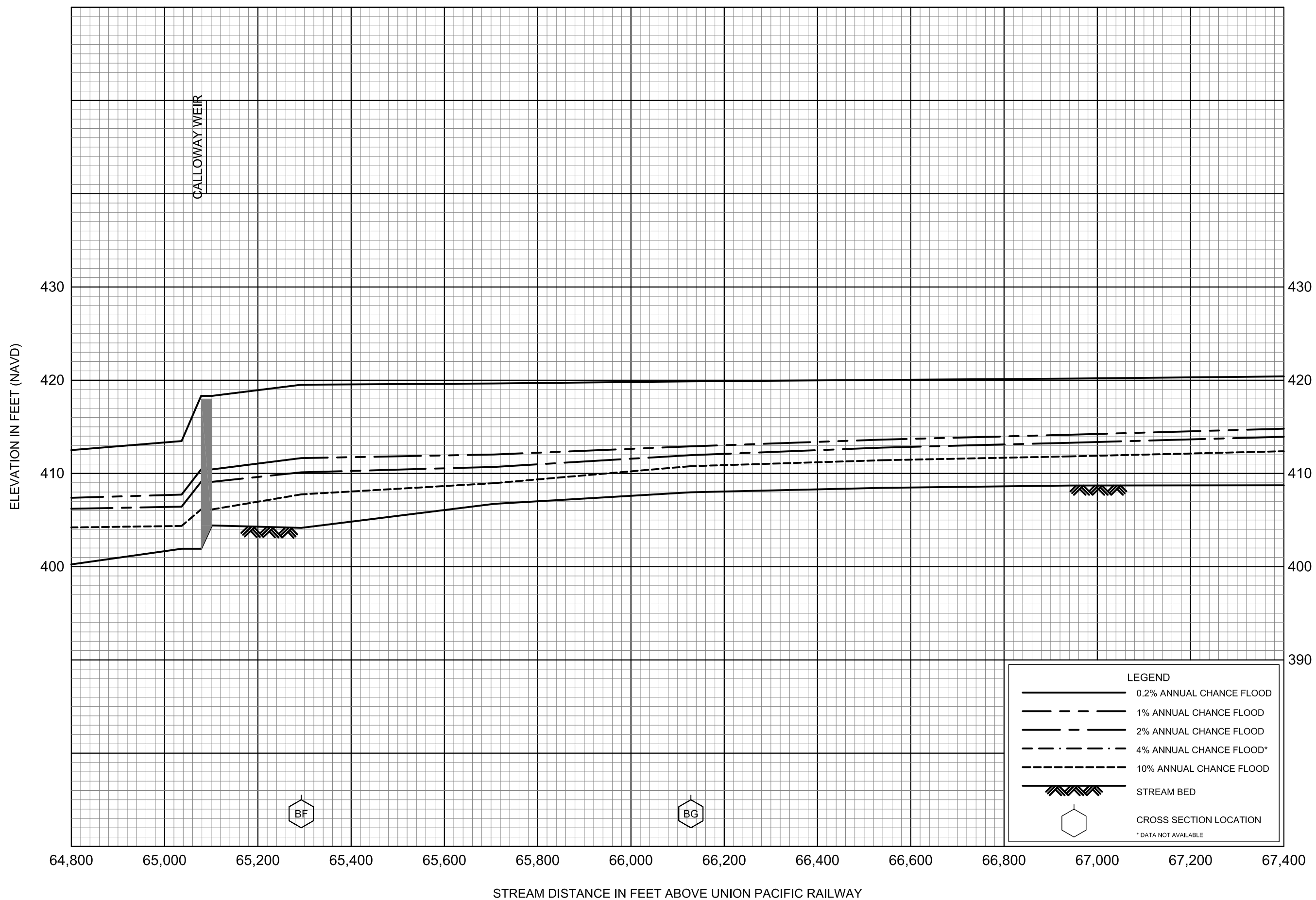


FLOOD PROFILES







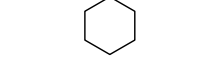
KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

KERN COUNTY, CA  
AND INCORPORATED AREAS



**LEGEND**

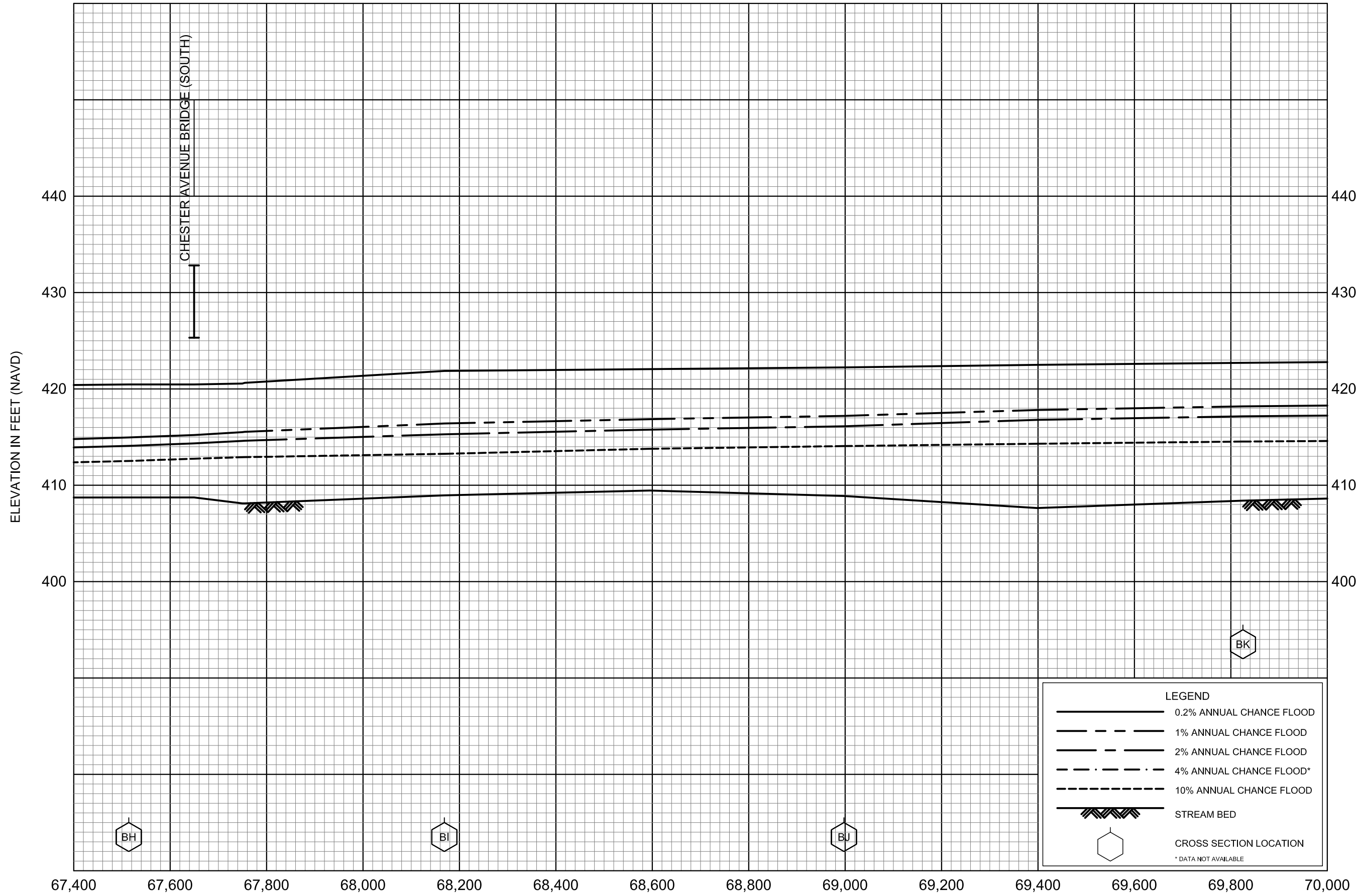
-  0.2% ANNUAL CHANCE FLOOD
-  1% ANNUAL CHANCE FLOOD
-  2% ANNUAL CHANCE FLOOD
-  4% ANNUAL CHANCE FLOOD\*
-  10% ANNUAL CHANCE FLOOD
-  STREAM BED
-  CROSS SECTION LOCATION

\* DATA NOT AVAILABLE

**FLOOD PROFILES**

**KERN RIVER - WITH CONSIDERATION OF LEVEES**

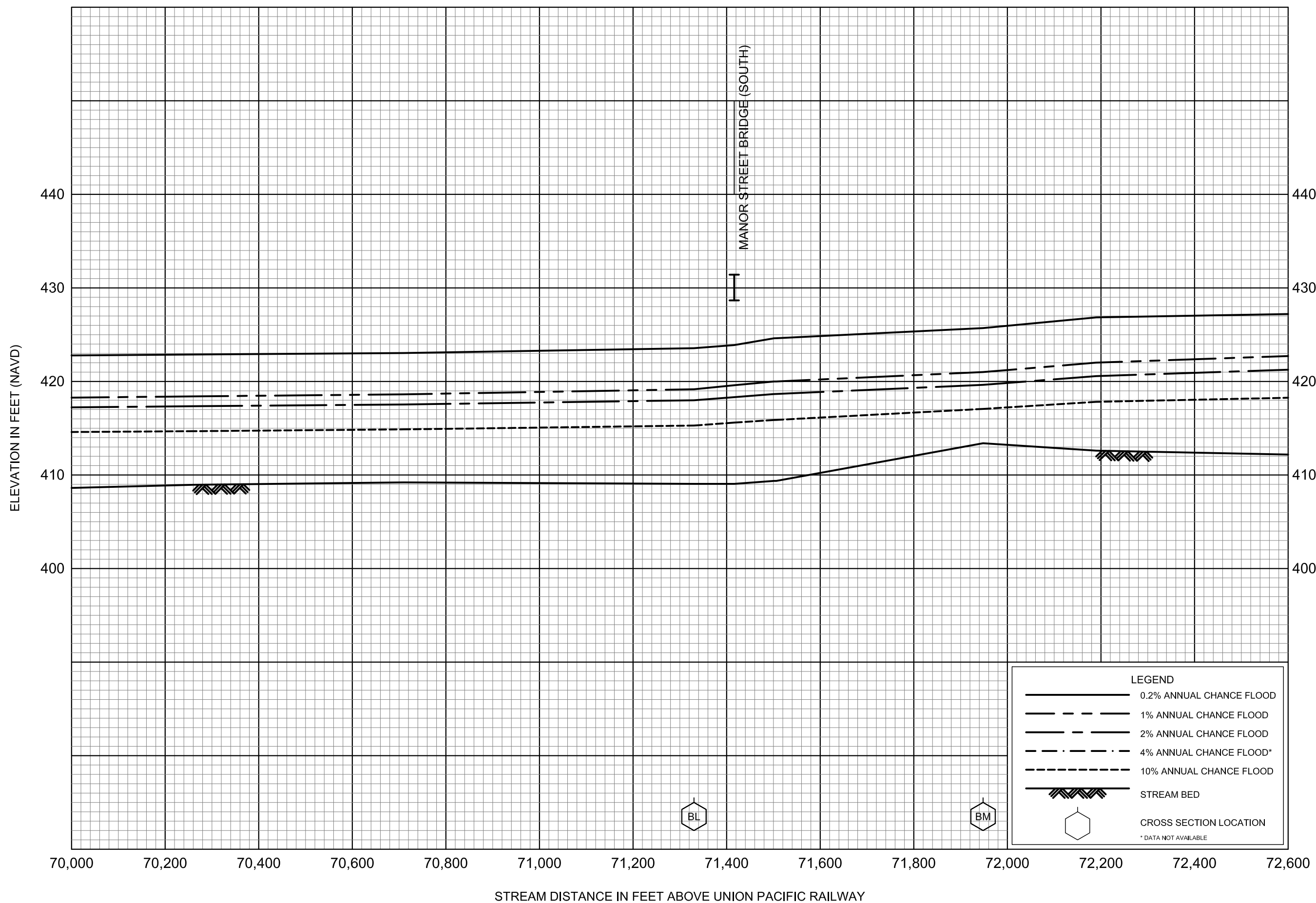
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS



FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS

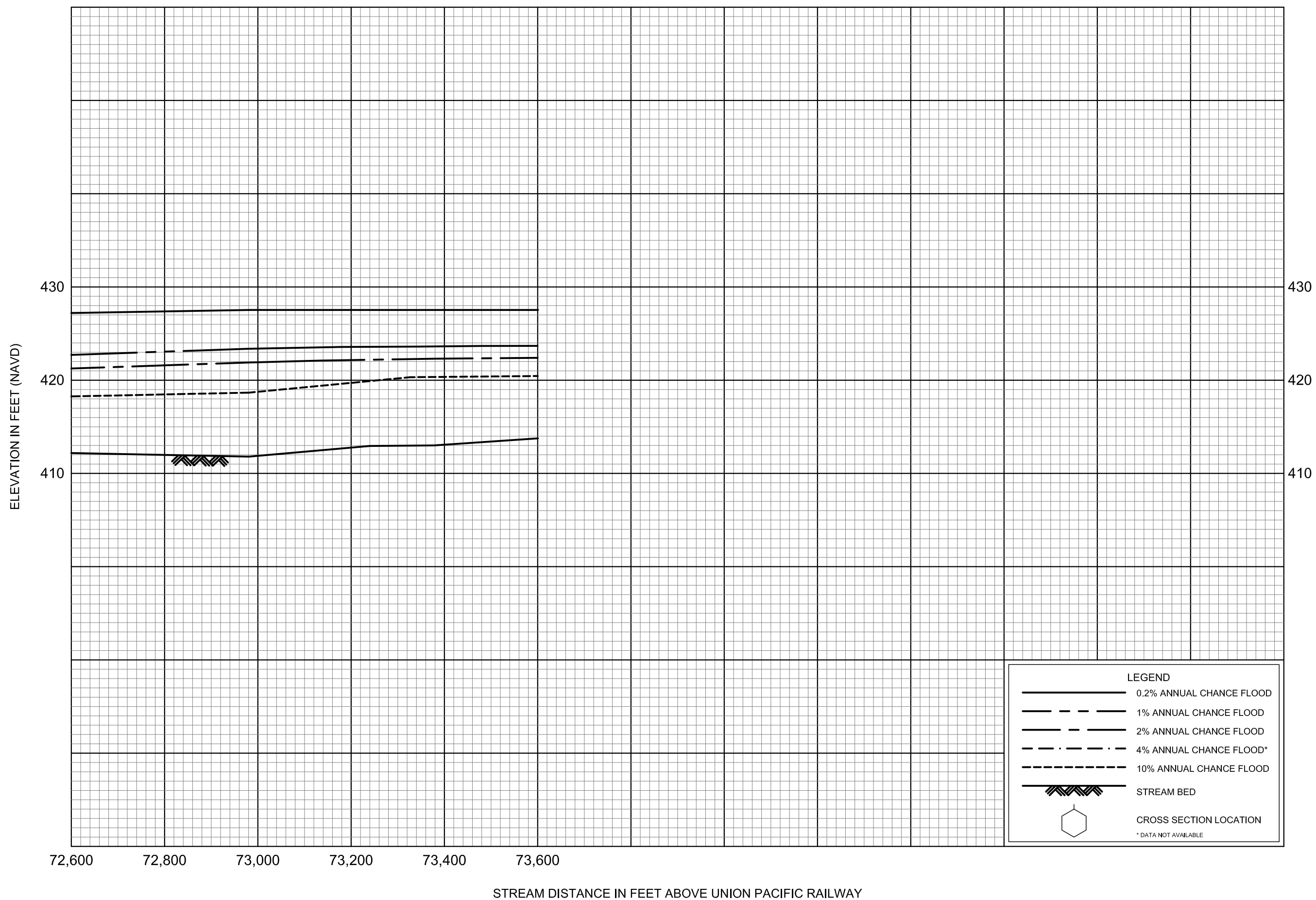


FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

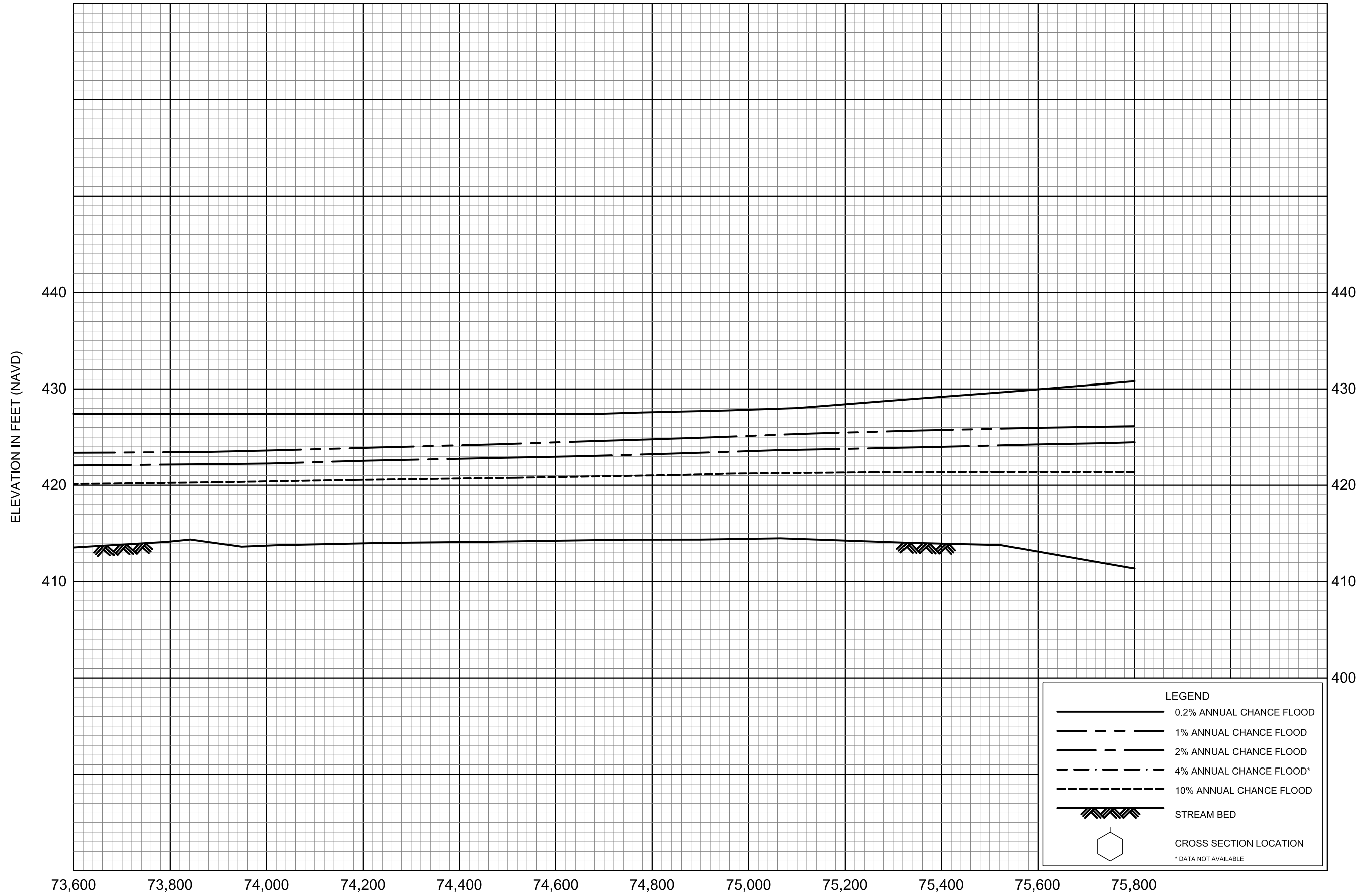
KERN COUNTY, CA  
AND INCORPORATED AREAS



FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS



**LEGEND**

- 0.2% ANNUAL CHANCE FLOOD
- - - 1% ANNUAL CHANCE FLOOD
- · - 2% ANNUAL CHANCE FLOOD
- · · - 4% ANNUAL CHANCE FLOOD\*
- - - - 10% ANNUAL CHANCE FLOOD
- / / / / / STREAM BED
- ⬡ CROSS SECTION LOCATION

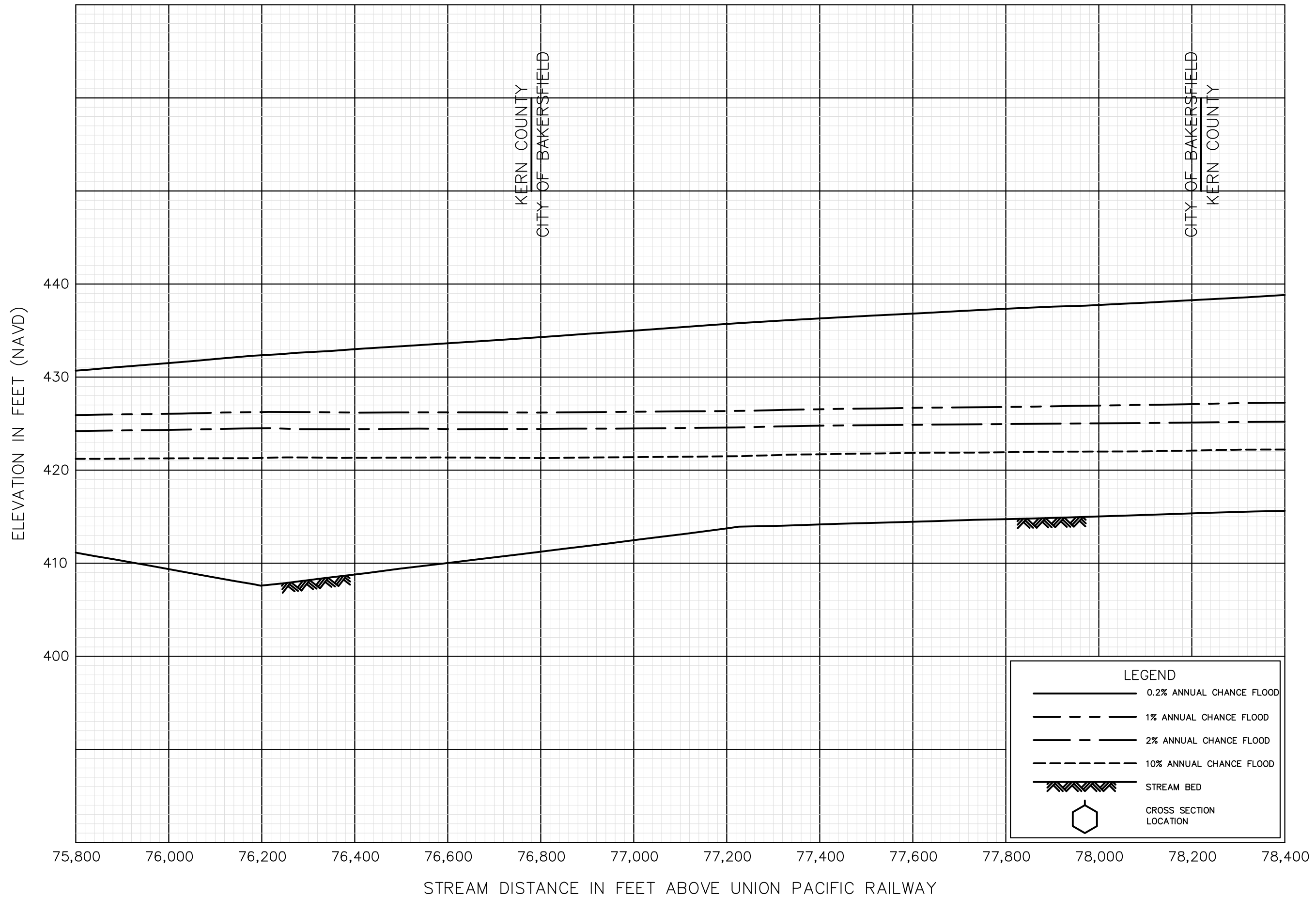
\* DATA NOT AVAILABLE

**FLOOD PROFILES**

**KERN RIVER - WITH CONSIDERATION OF LEVEES**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS

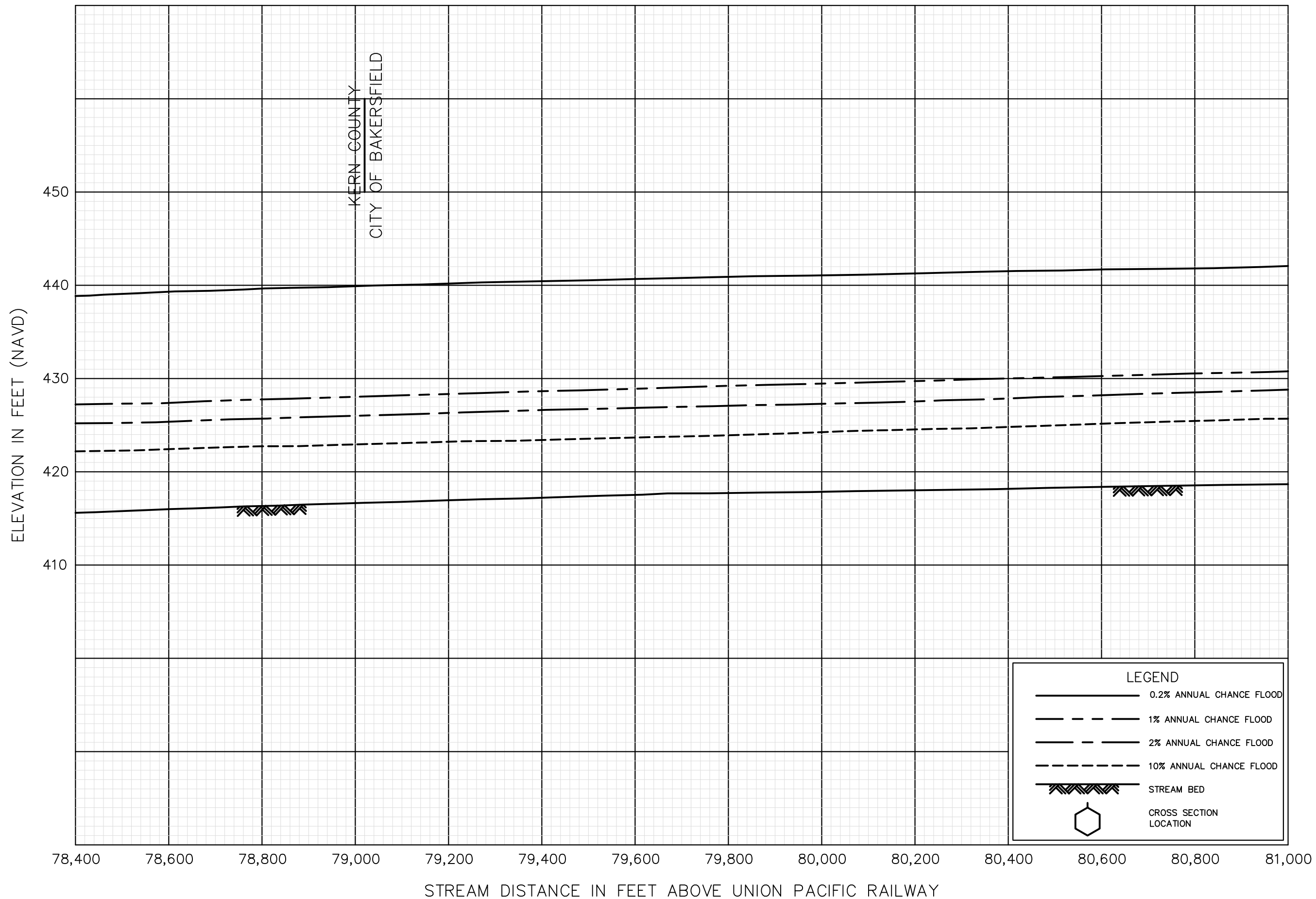




FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

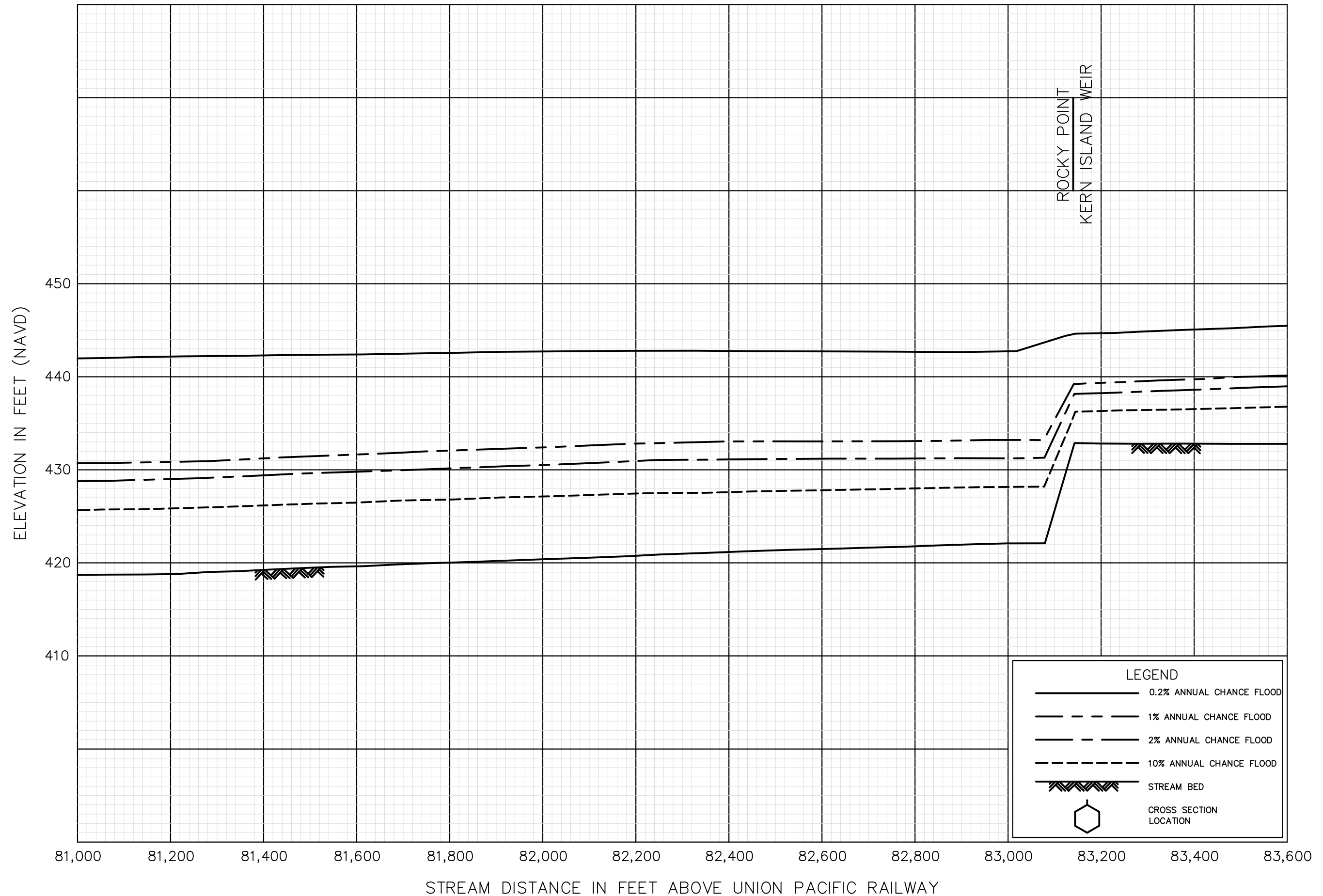
FEDERAL EMERGENCY MANAGEMENT AGENCY  
 KERN COUNTY, CA  
 AND INCORPORATED AREAS



FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

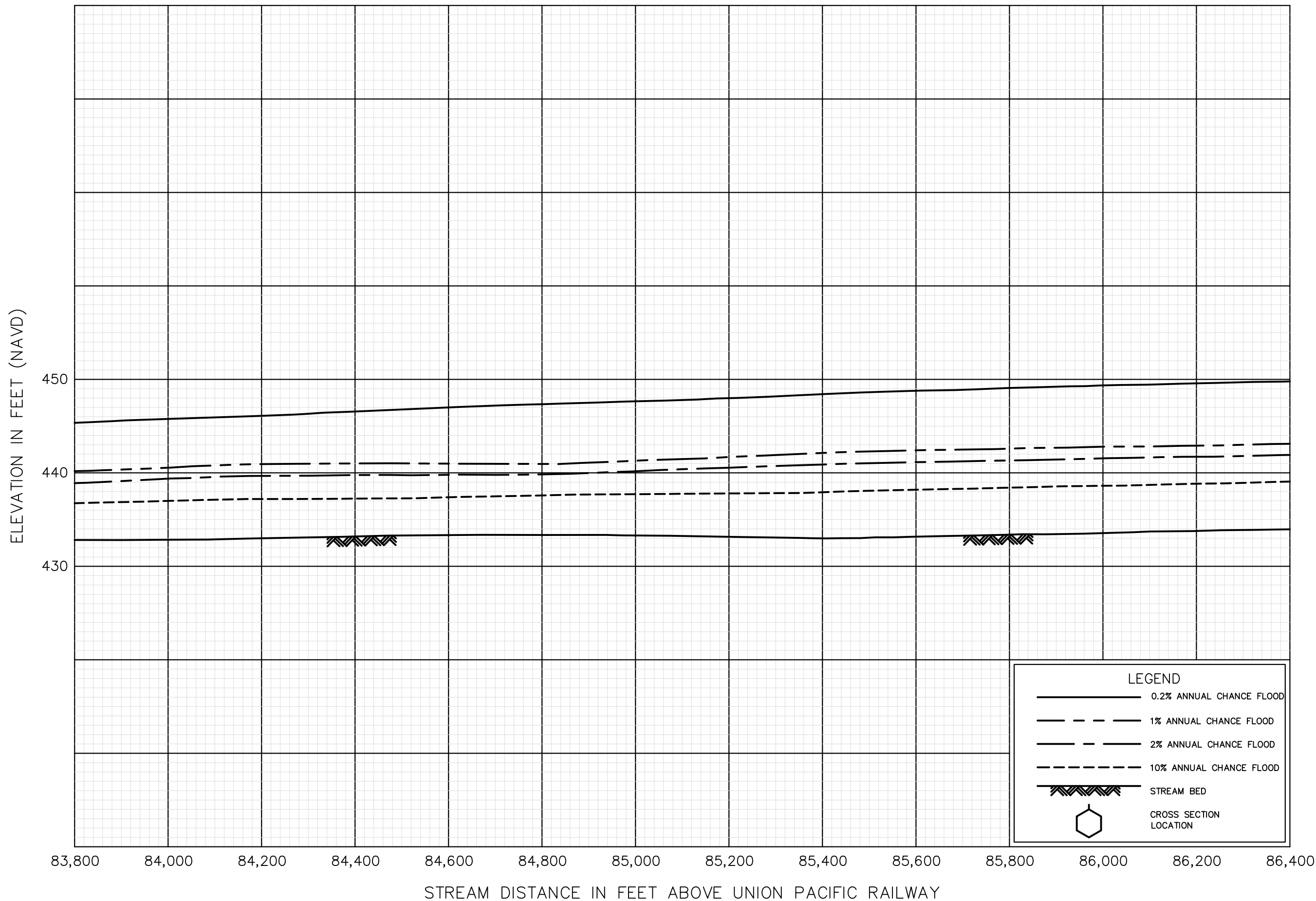
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS



## FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

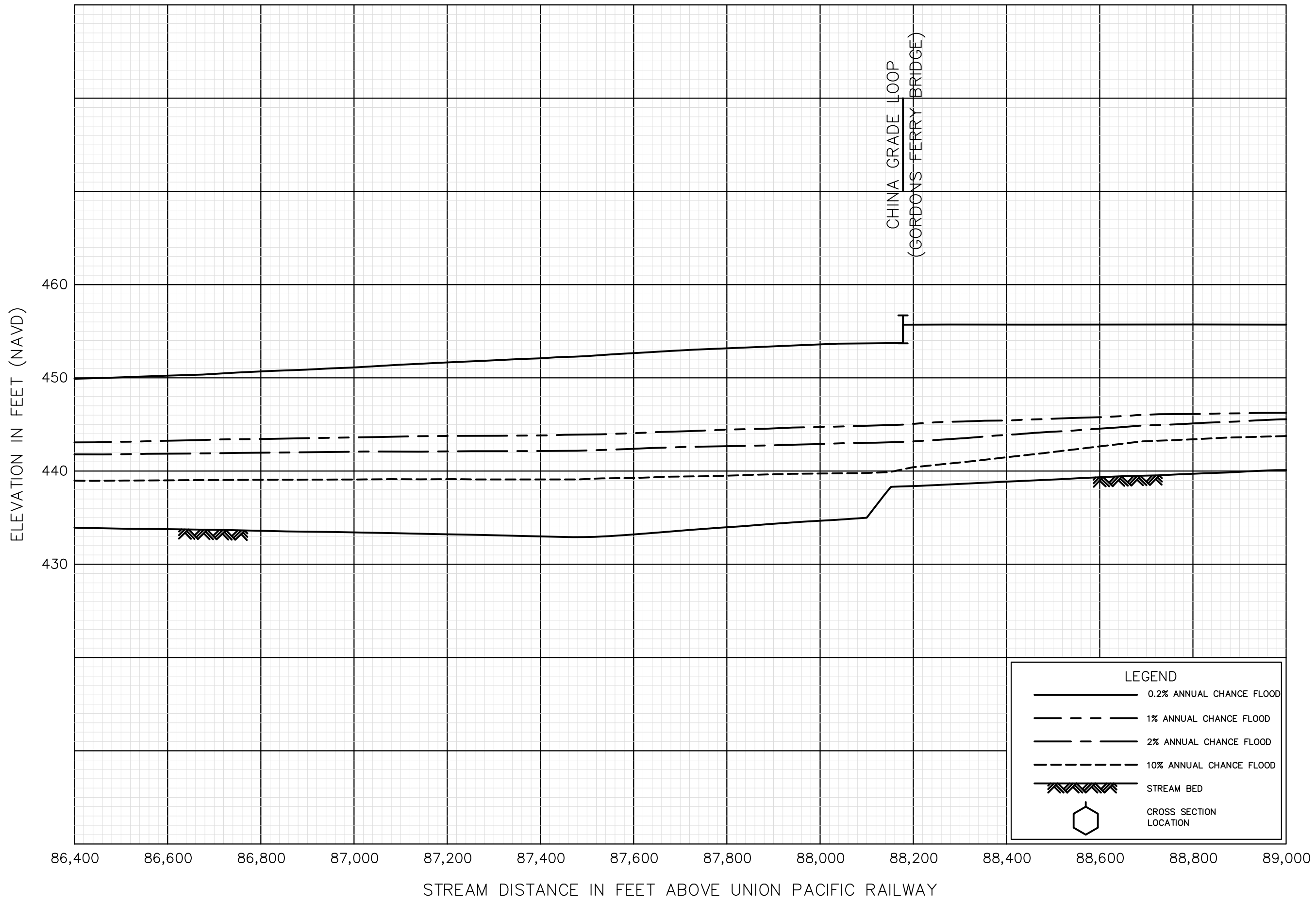
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS



**FLOOD PROFILES**

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS

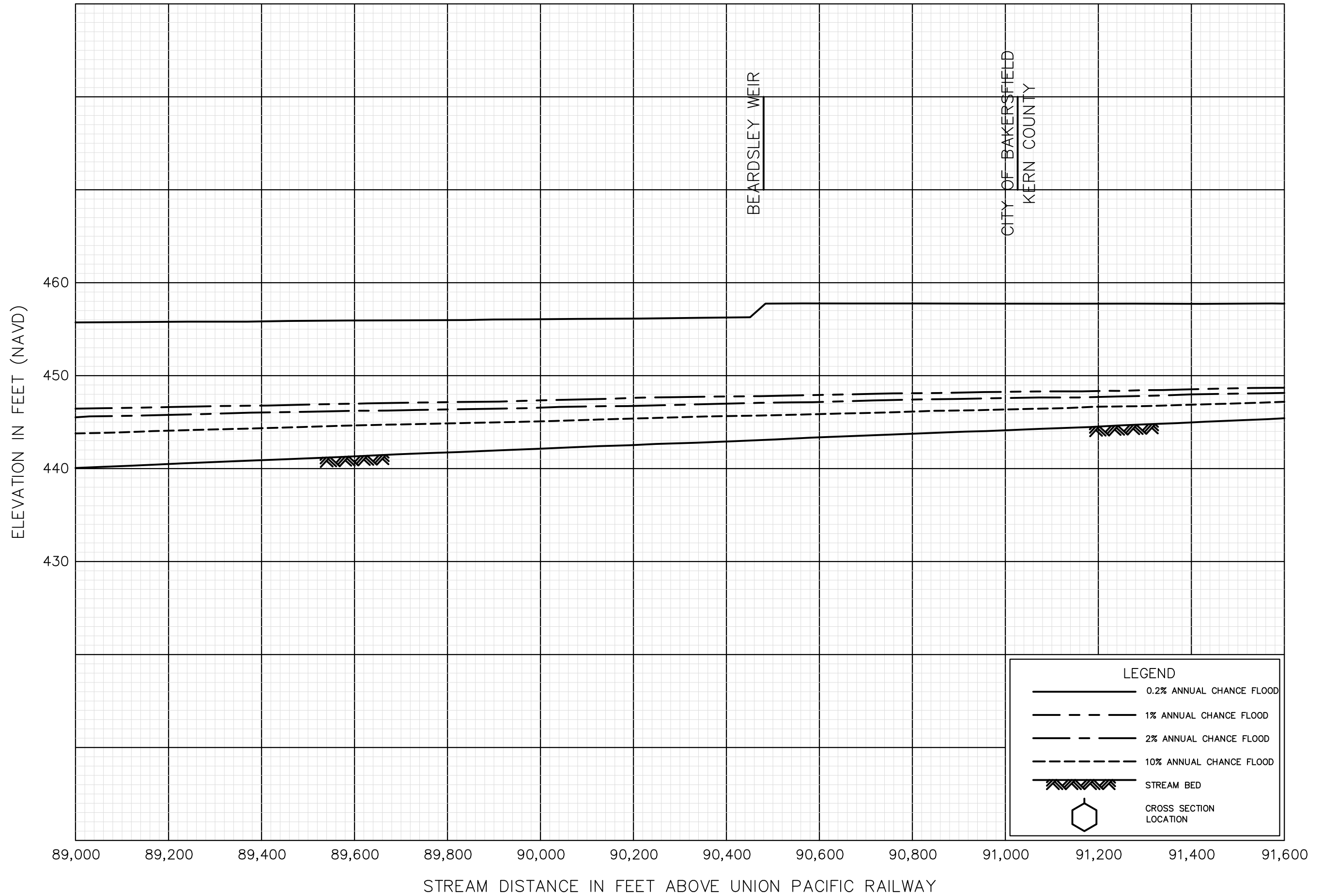


FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

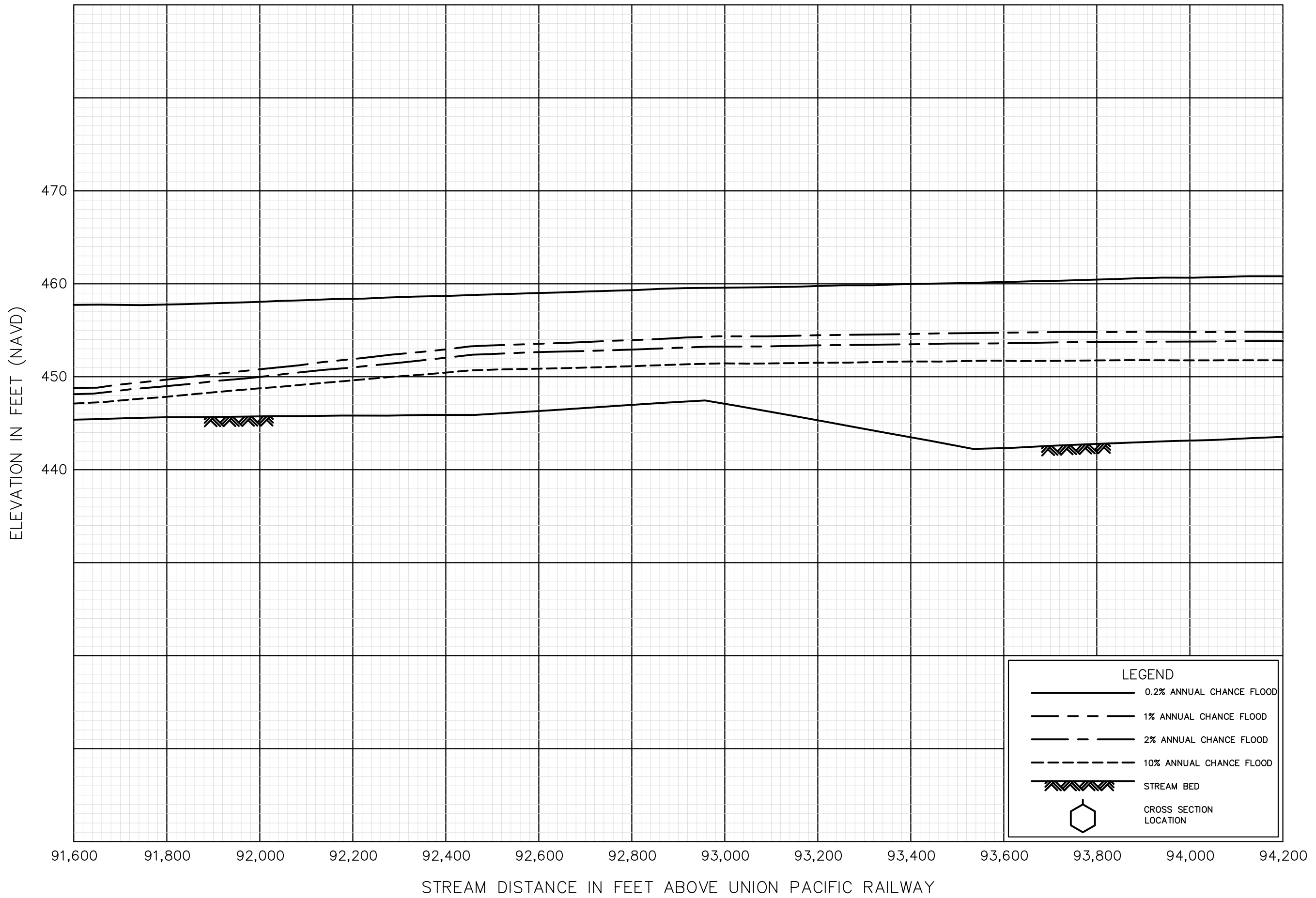
KERN COUNTY, CA  
AND INCORPORATED AREAS



FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY  
 KERN COUNTY, CA  
 AND INCORPORATED AREAS

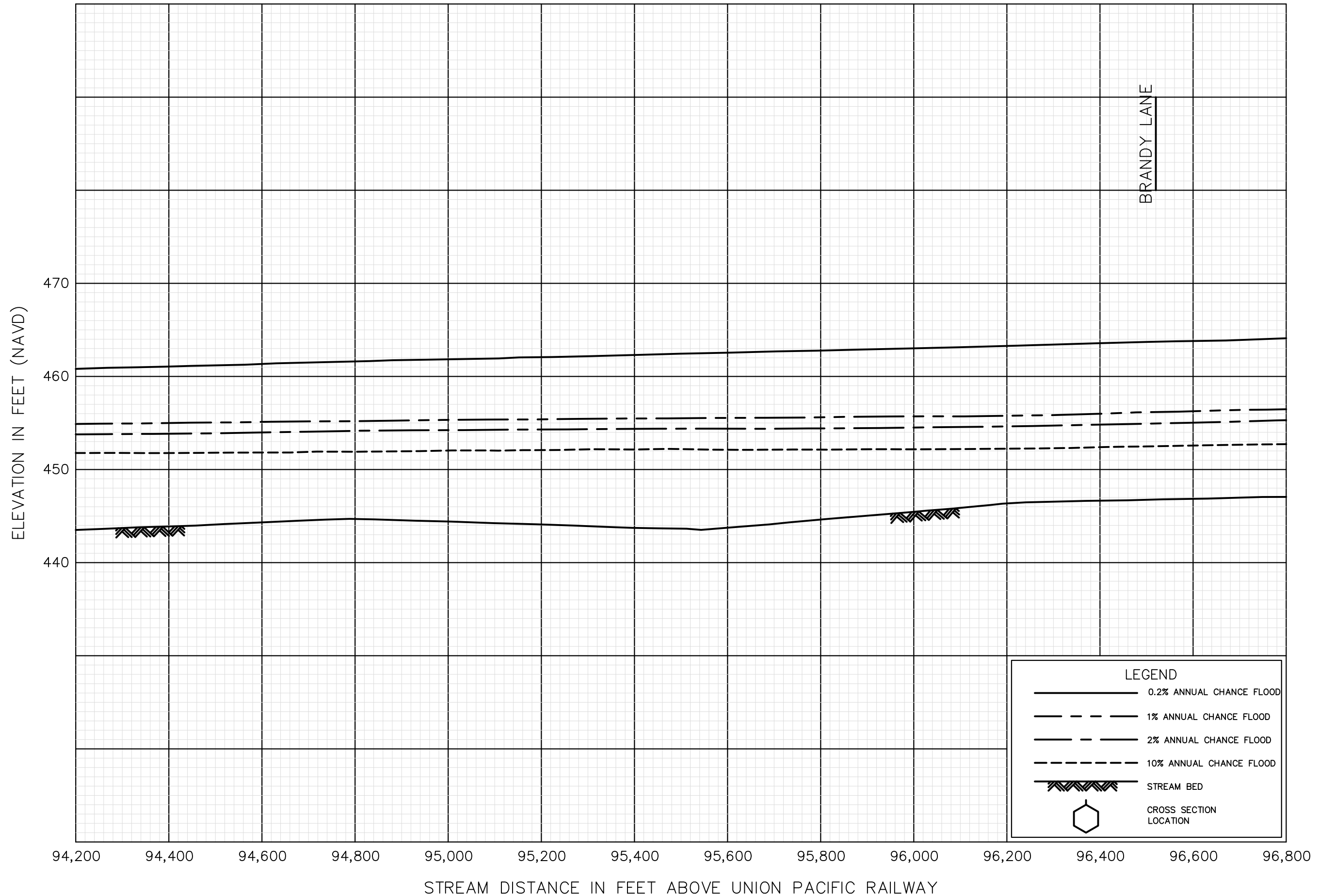


# FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

**KERN COUNTY, CA**  
AND INCORPORATED AREAS



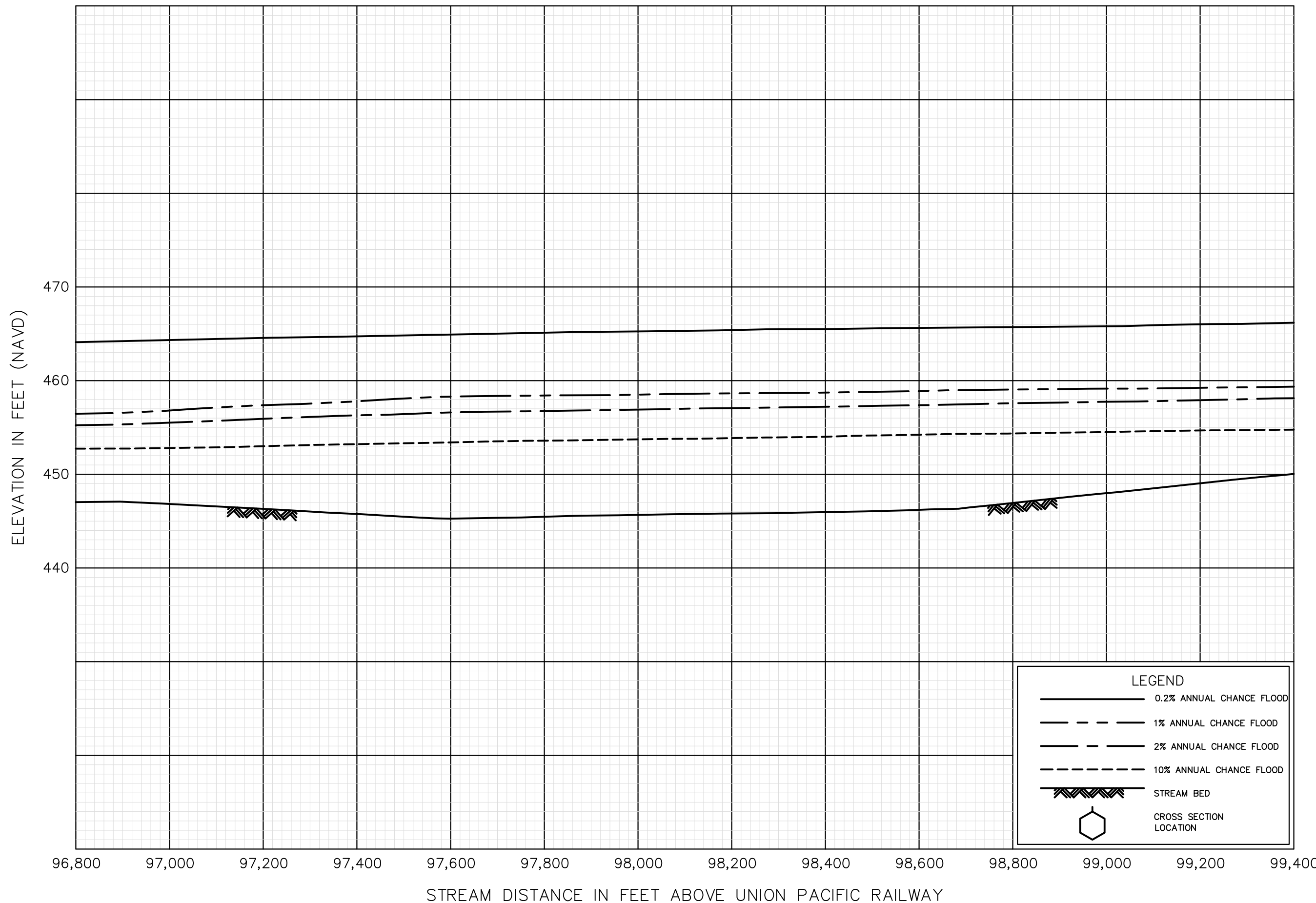
FLOOD PROFILES

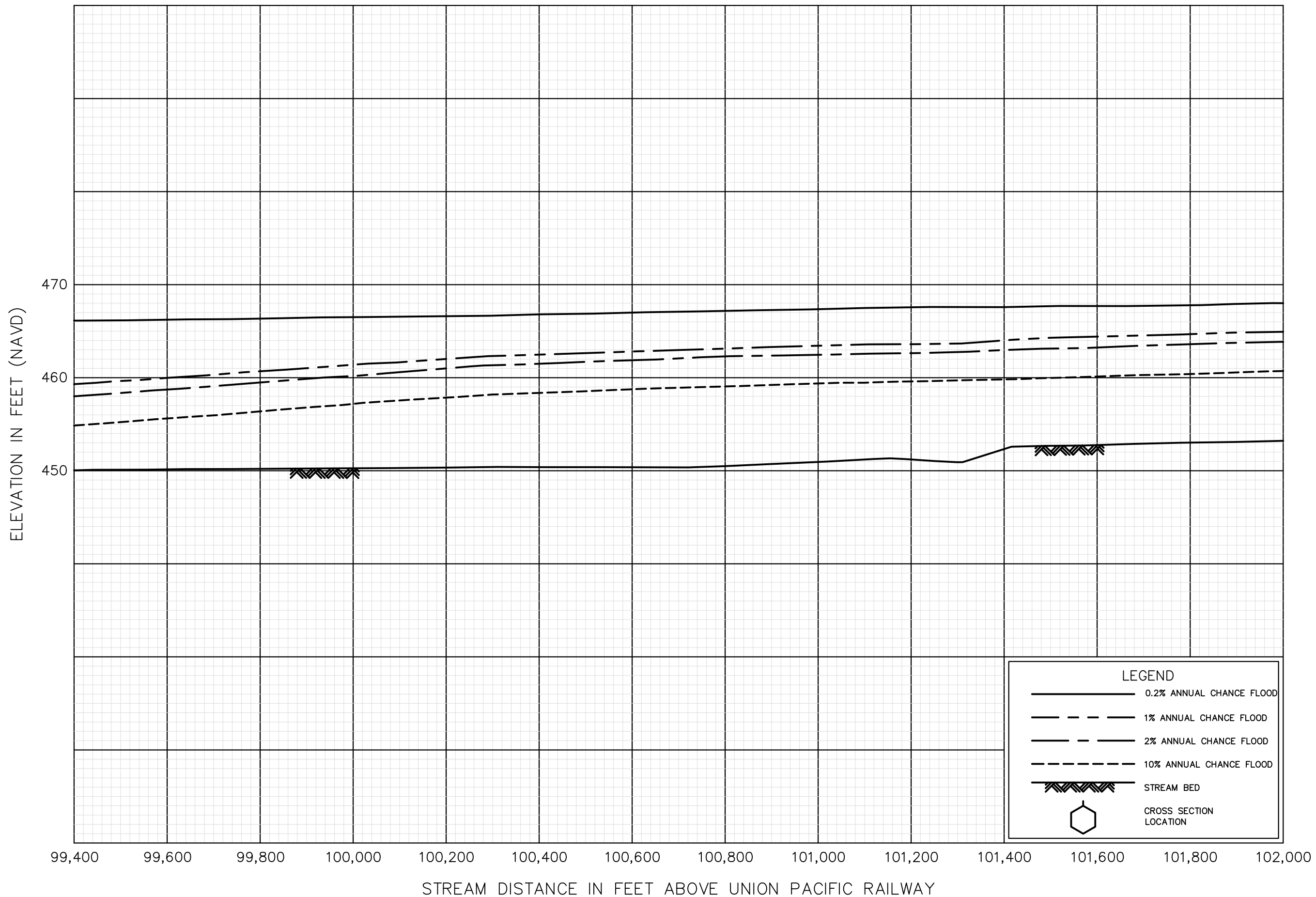
KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

KERN COUNTY, CA  
AND INCORPORATED AREAS

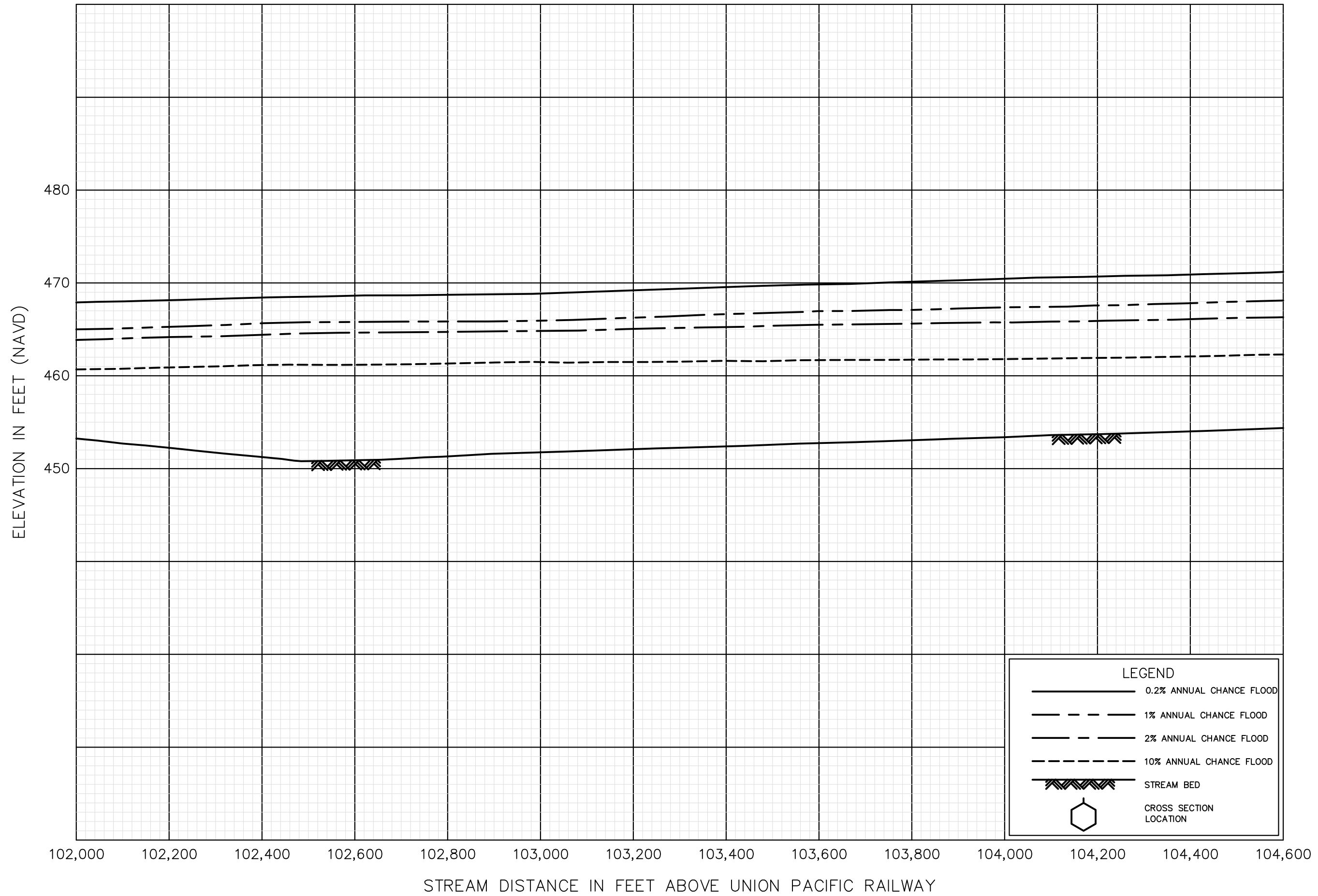






FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS

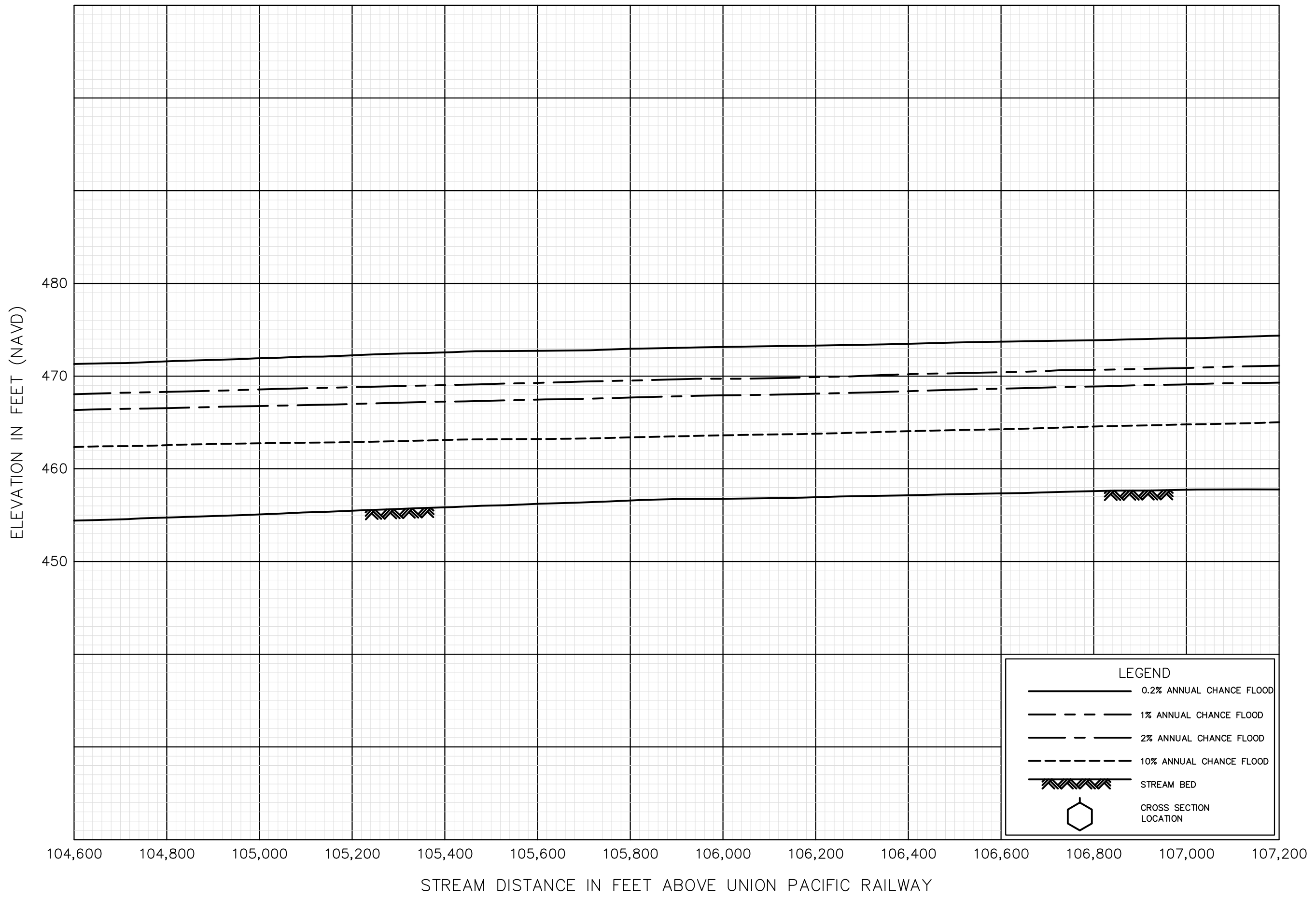
**FLOOD PROFILES**  
 KERN RIVER - WITH CONSIDERATION OF LEVEES



FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

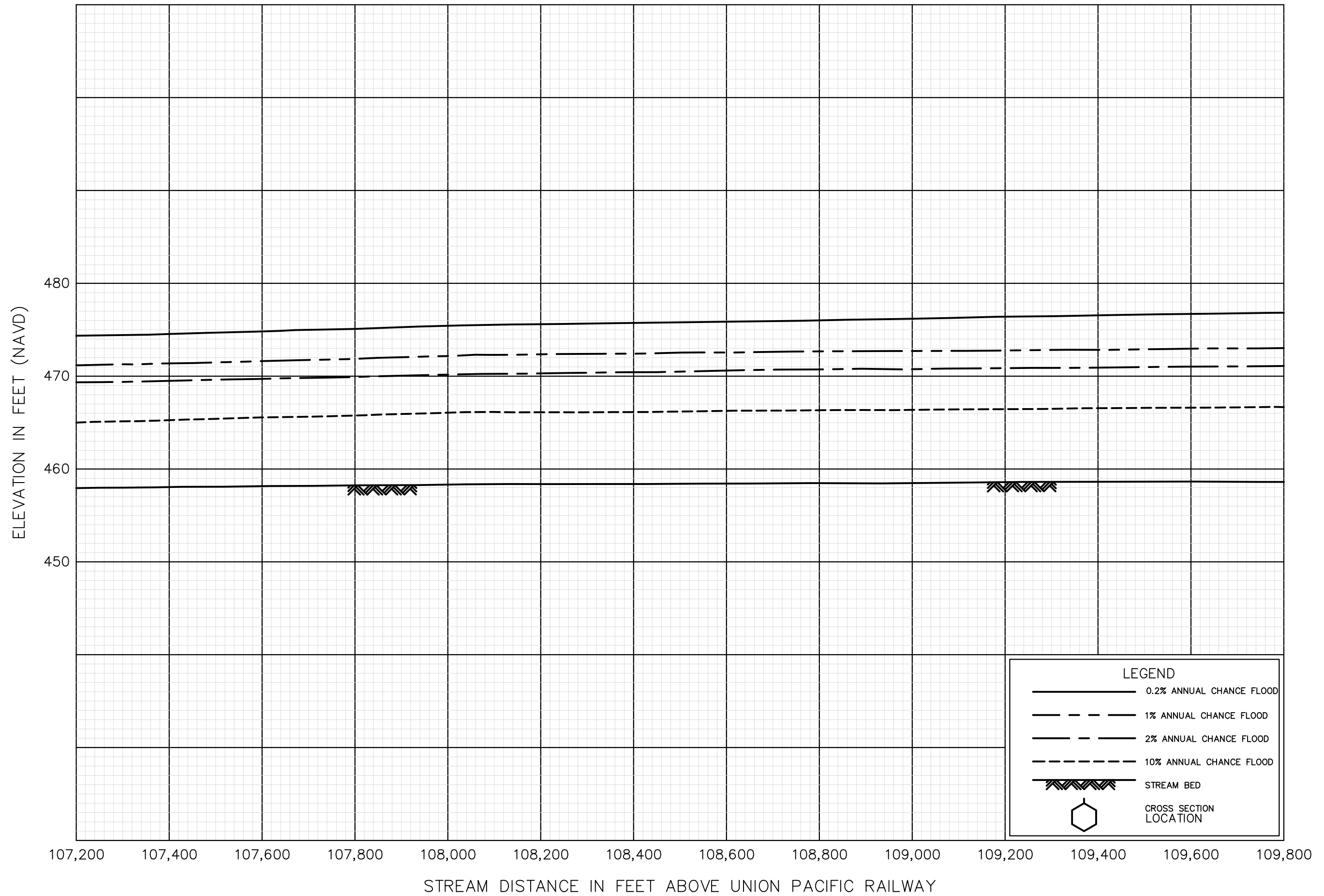
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS



FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

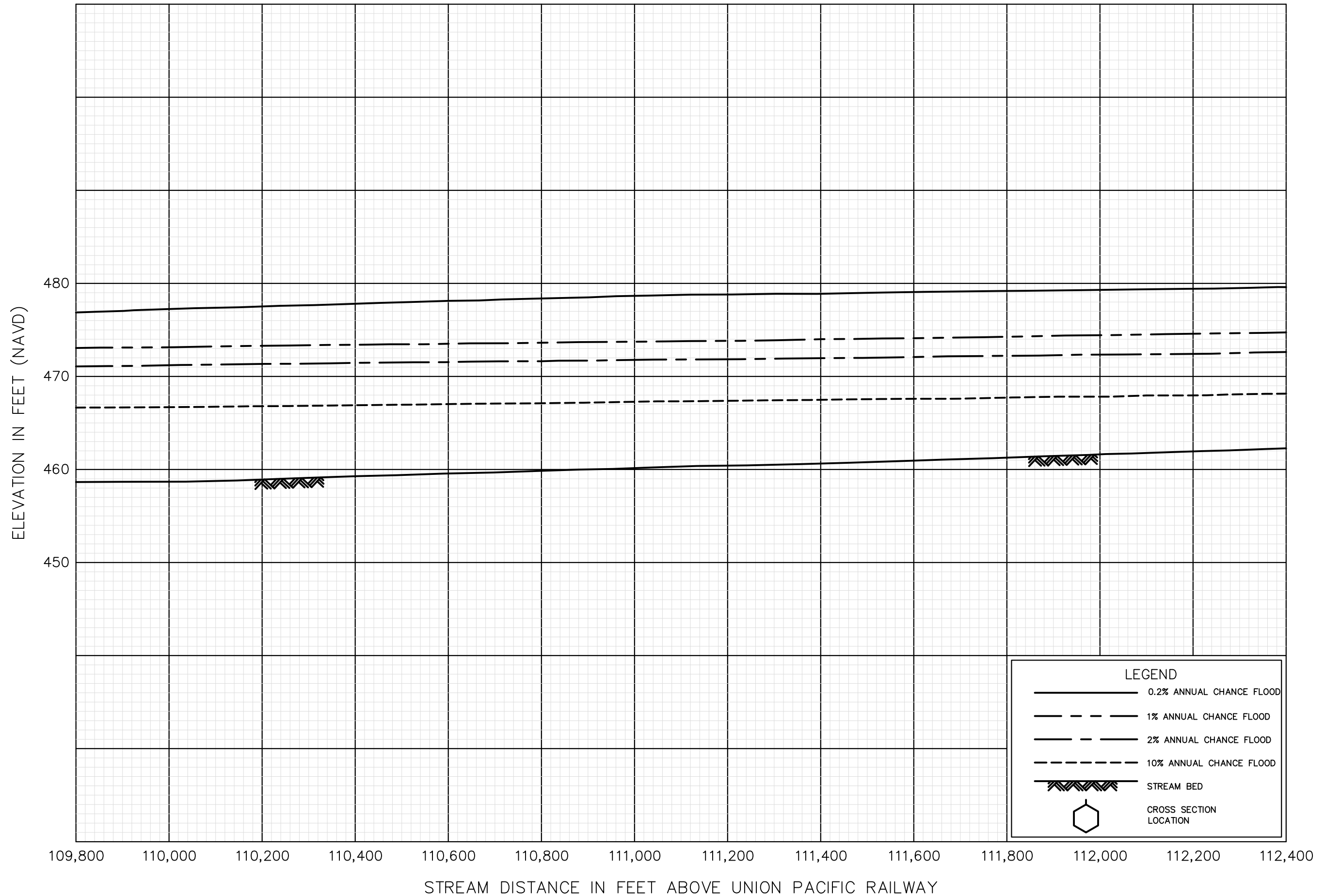
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS



FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

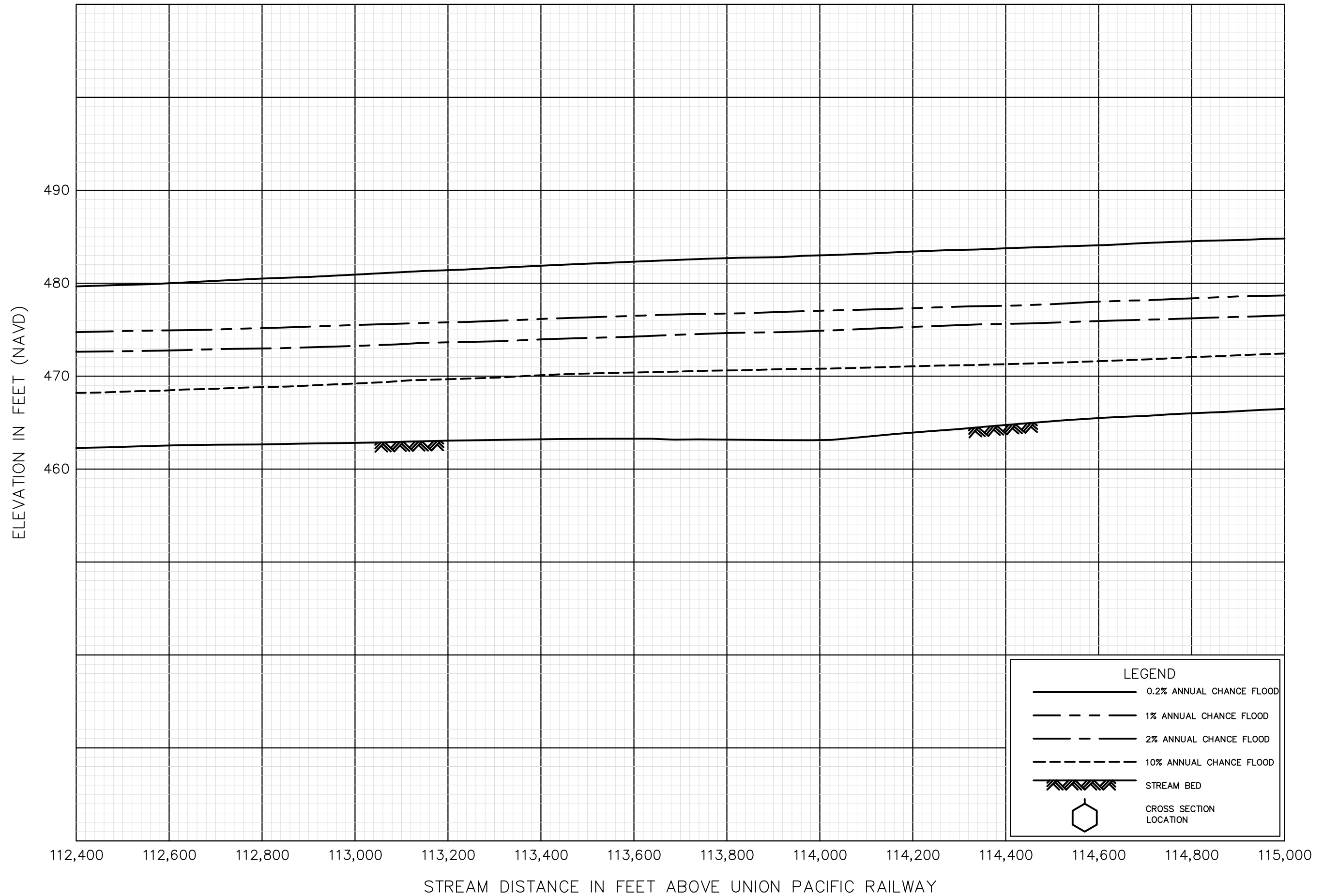
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS



FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS

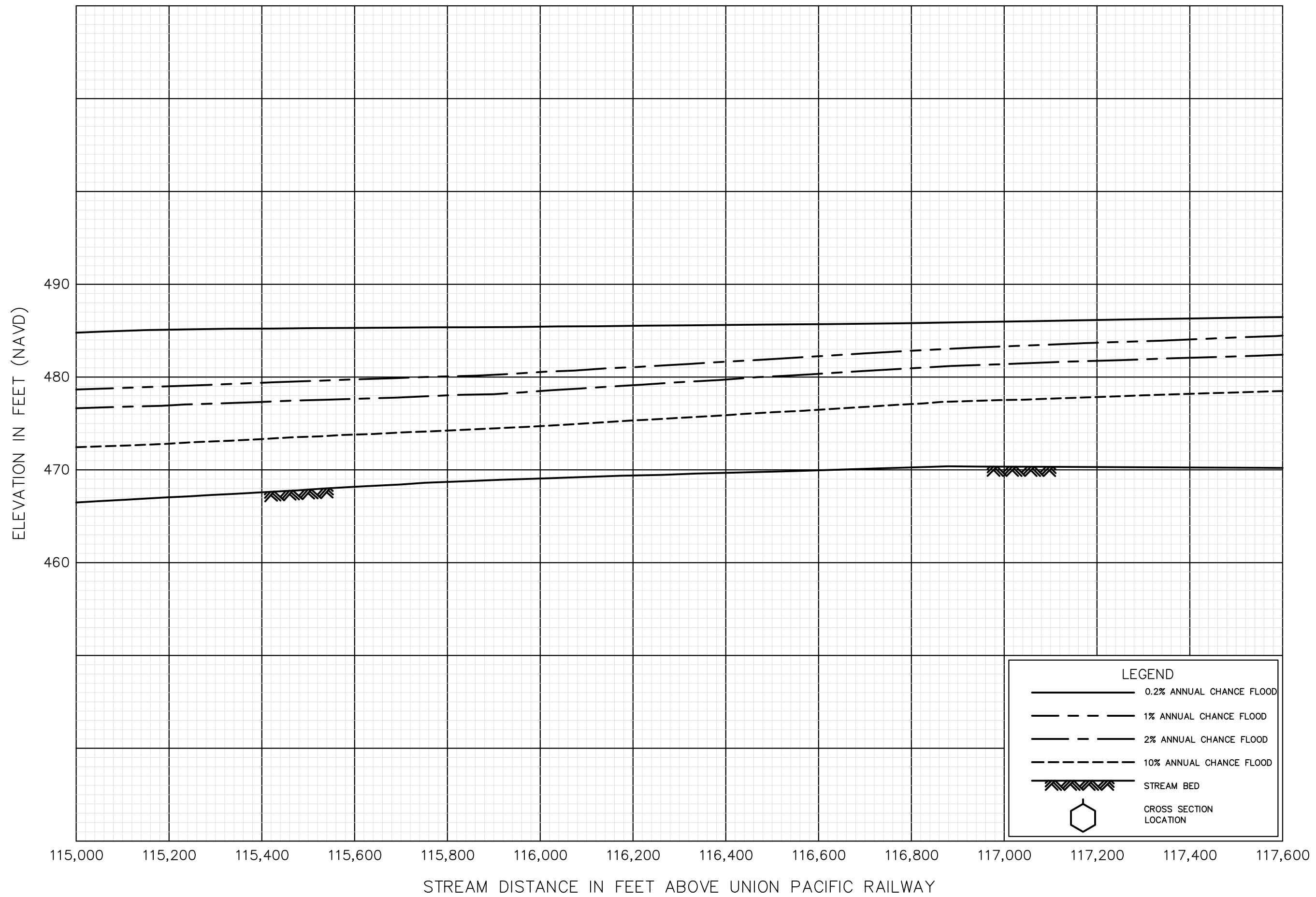


# FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

**KERN COUNTY, CA**  
AND INCORPORATED AREAS

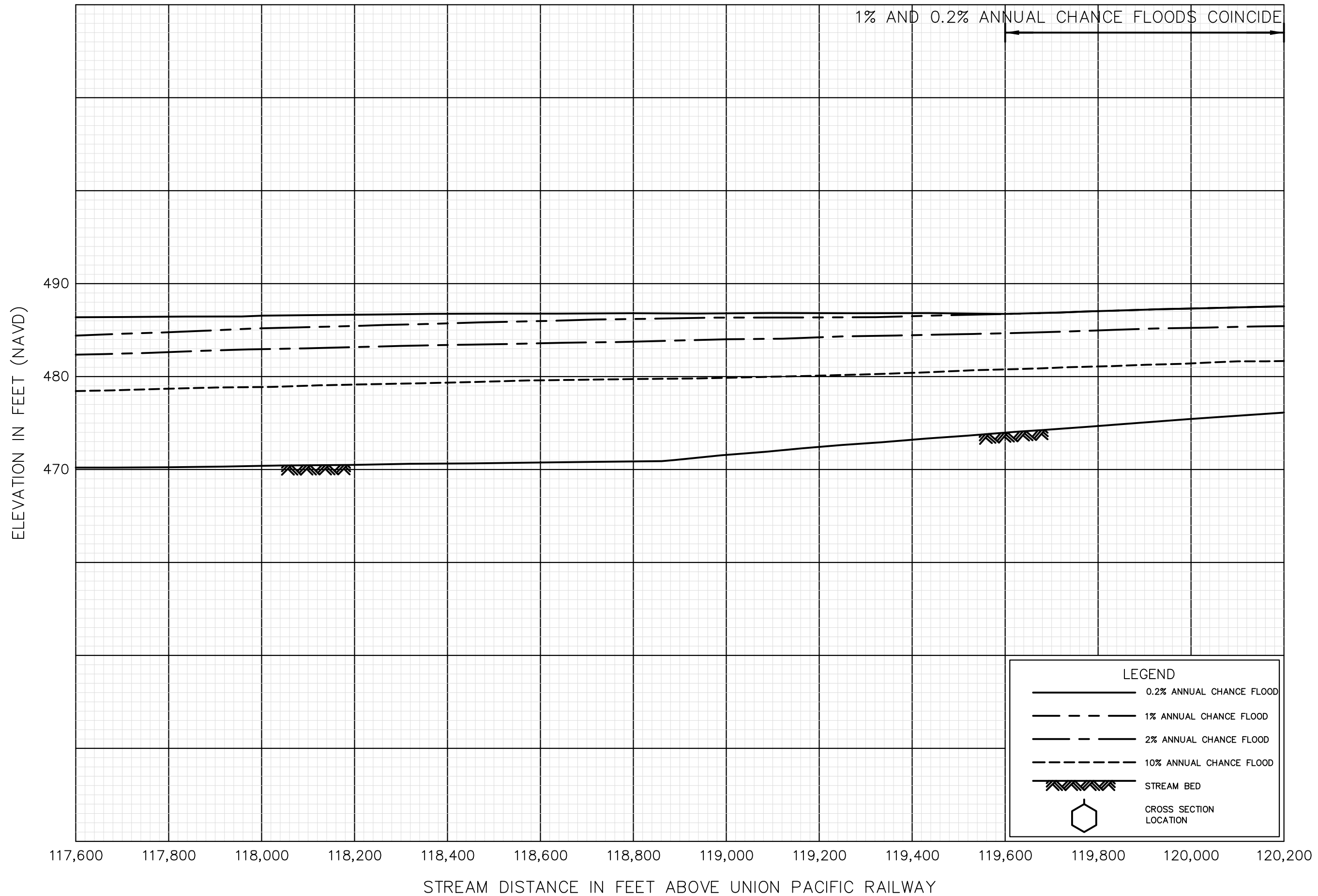


**FLOOD PROFILES**

KERN RIVER - WITH CONSIDERATION OF LEVEES

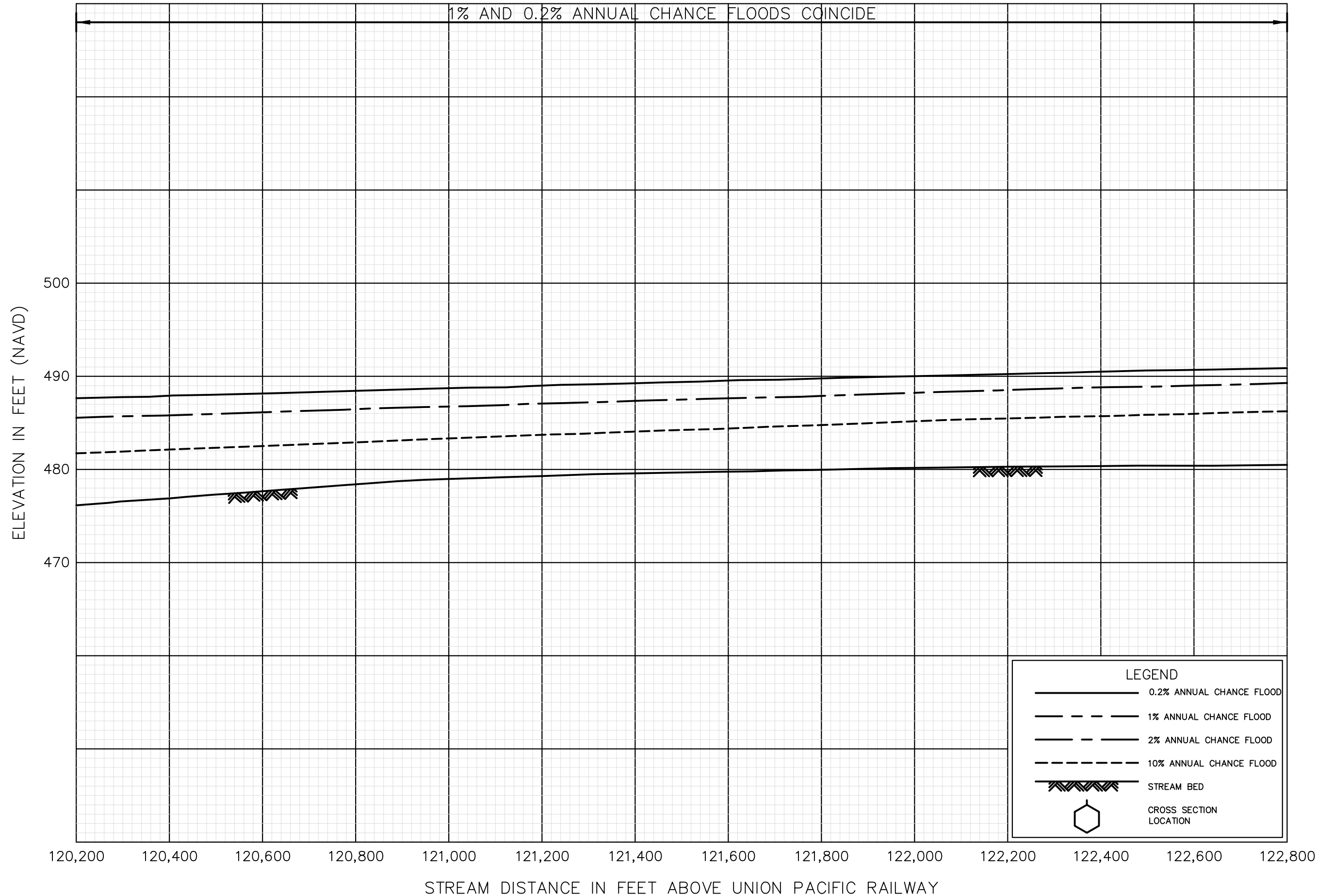
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS





FLOOD PROFILES  
 KERN RIVER - WITH CONSIDERATION OF LEVEES

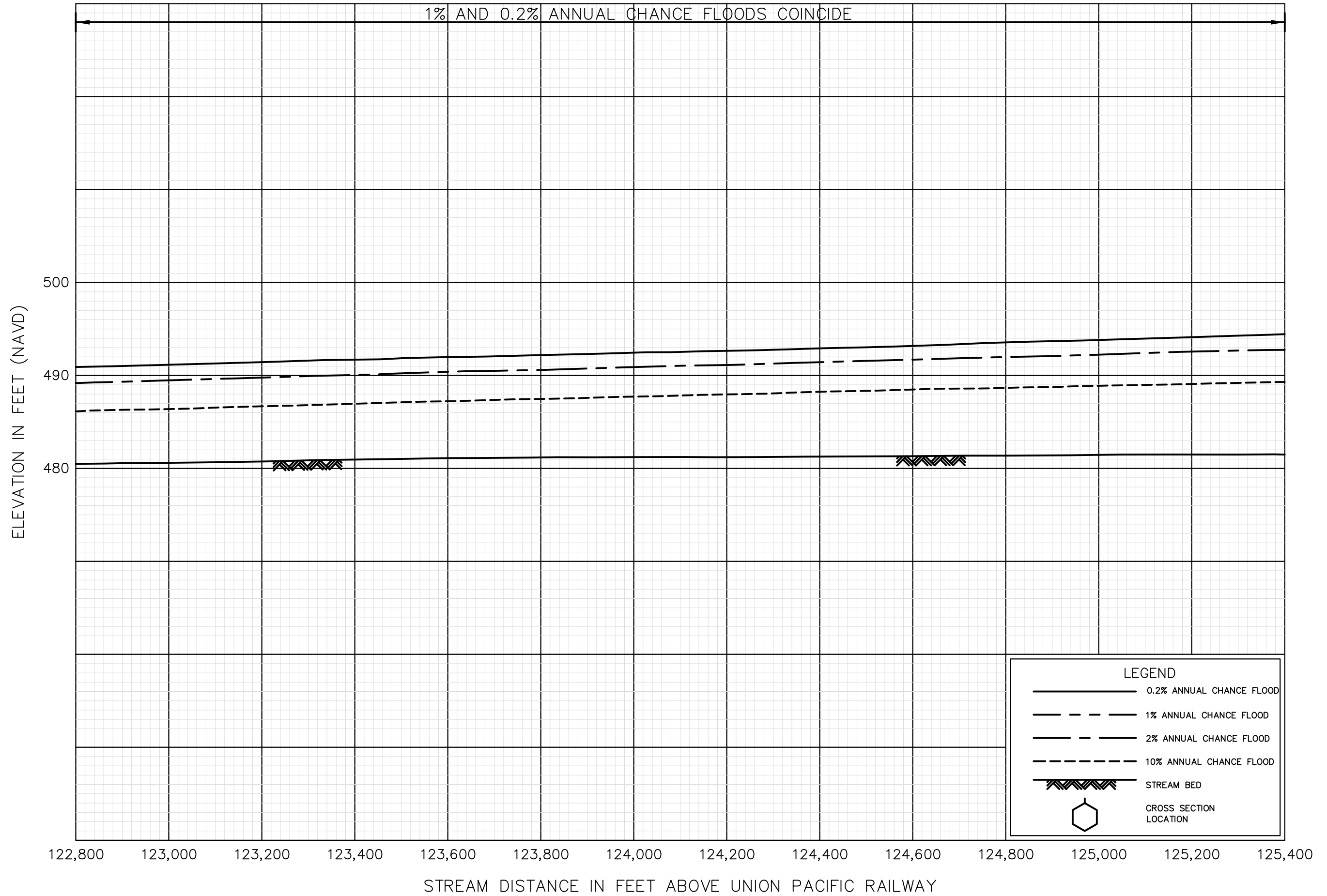
FEDERAL EMERGENCY MANAGEMENT AGENCY  
 KERN COUNTY, CA  
 AND INCORPORATED AREAS



FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

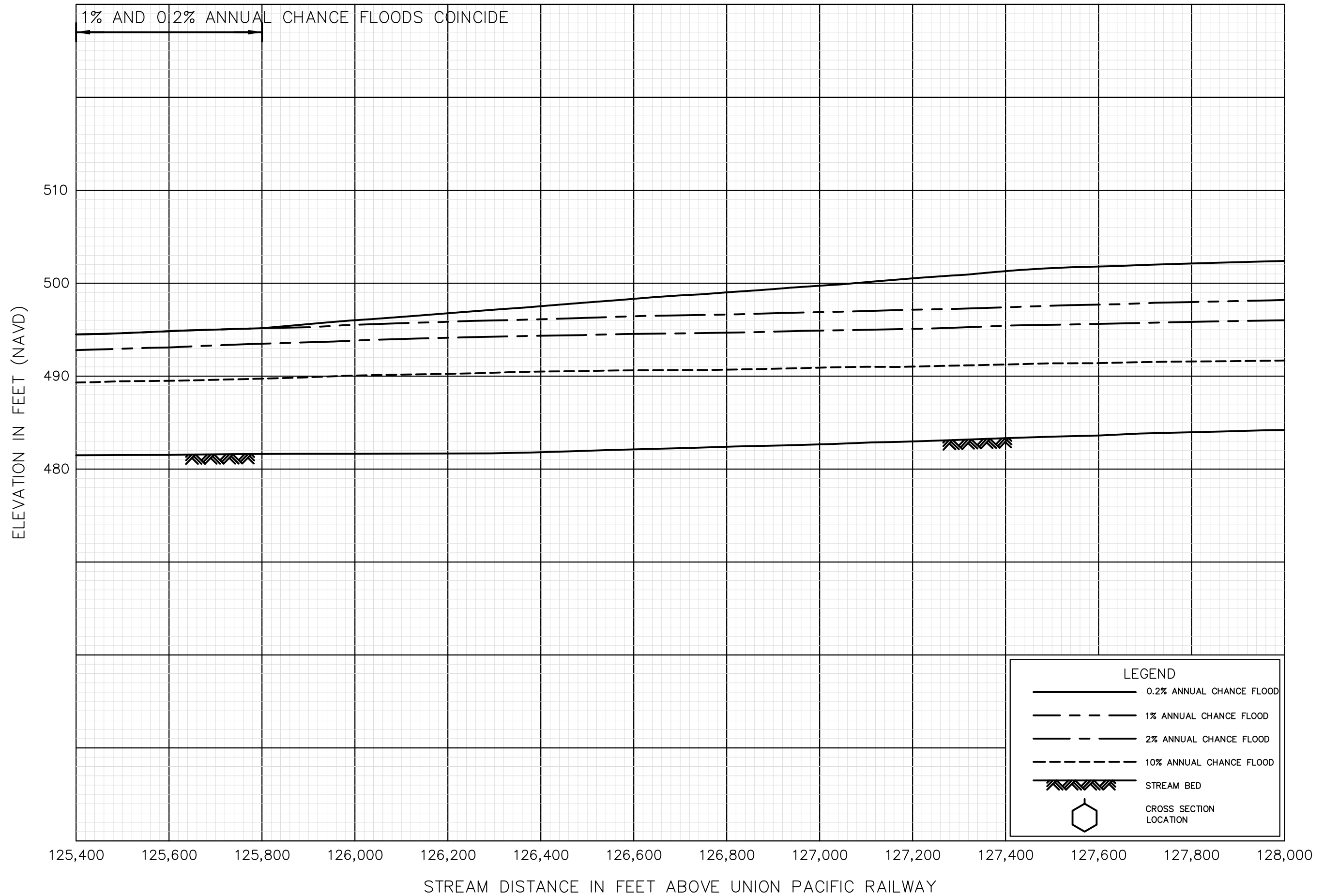
FEDERAL EMERGENCY MANAGEMENT AGENCY  
 KERN COUNTY, CA  
 AND INCORPORATED AREAS



FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

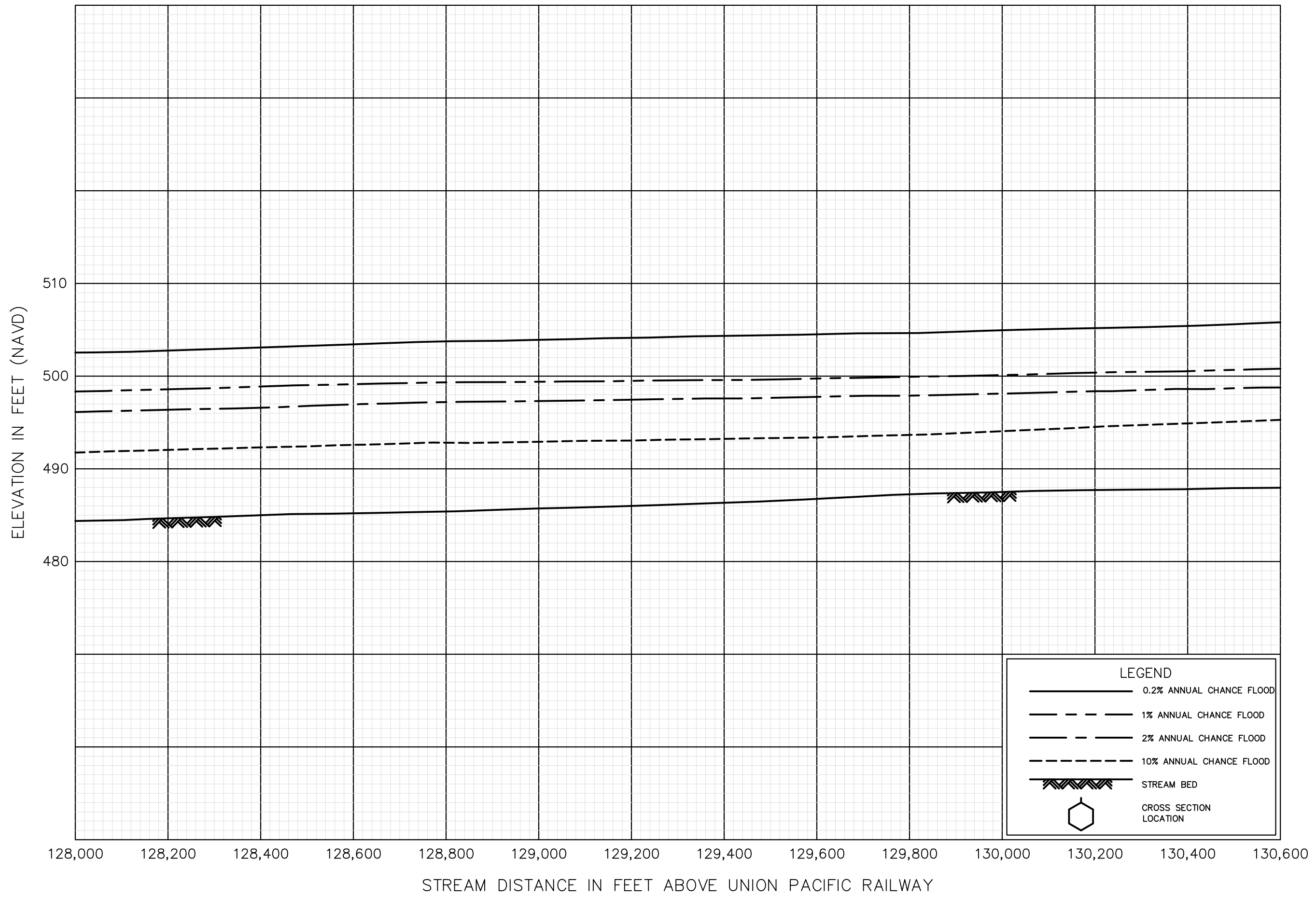
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS



FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

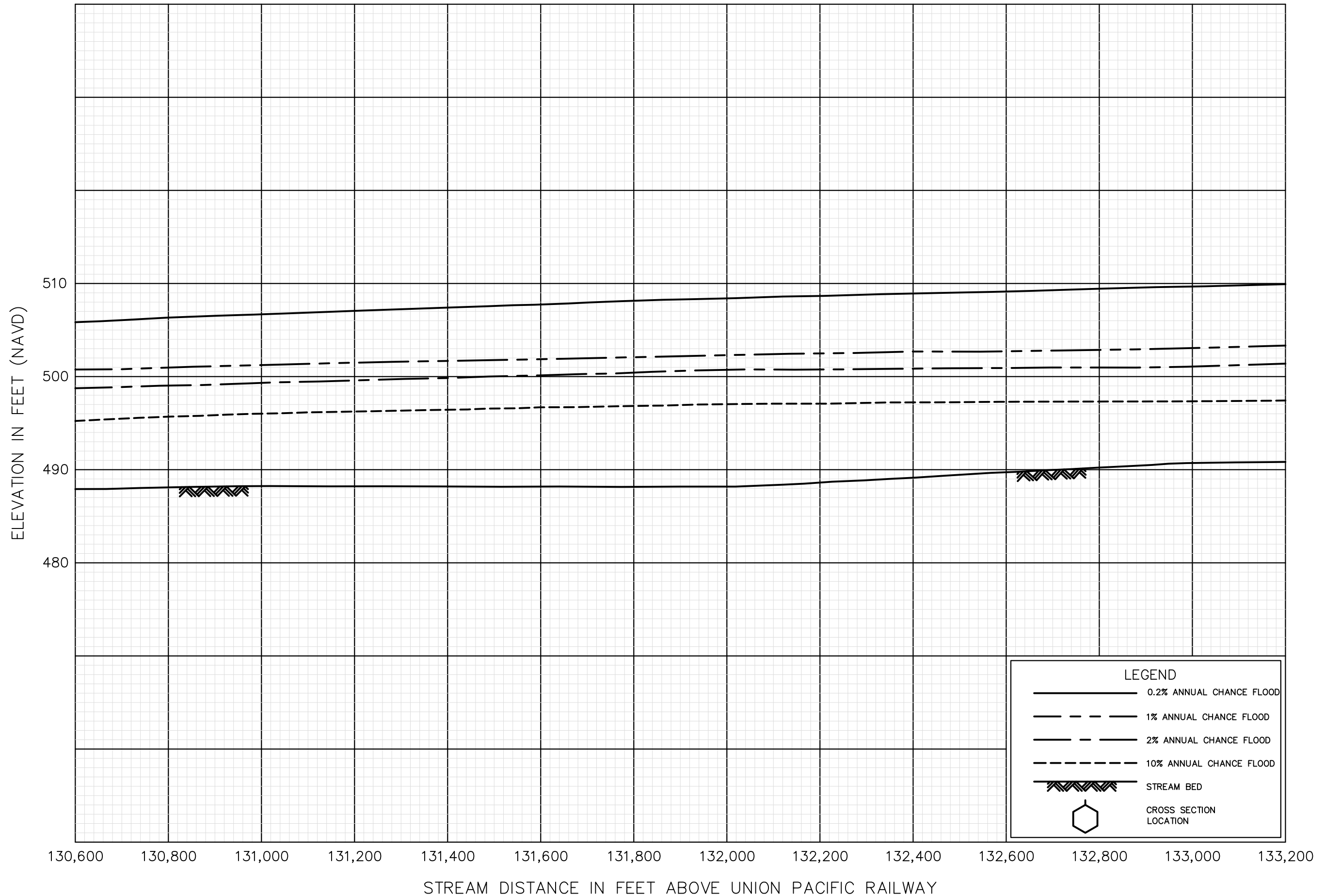
FEDERAL EMERGENCY MANAGEMENT AGENCY  
 KERN COUNTY, CA  
 AND INCORPORATED AREAS



FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

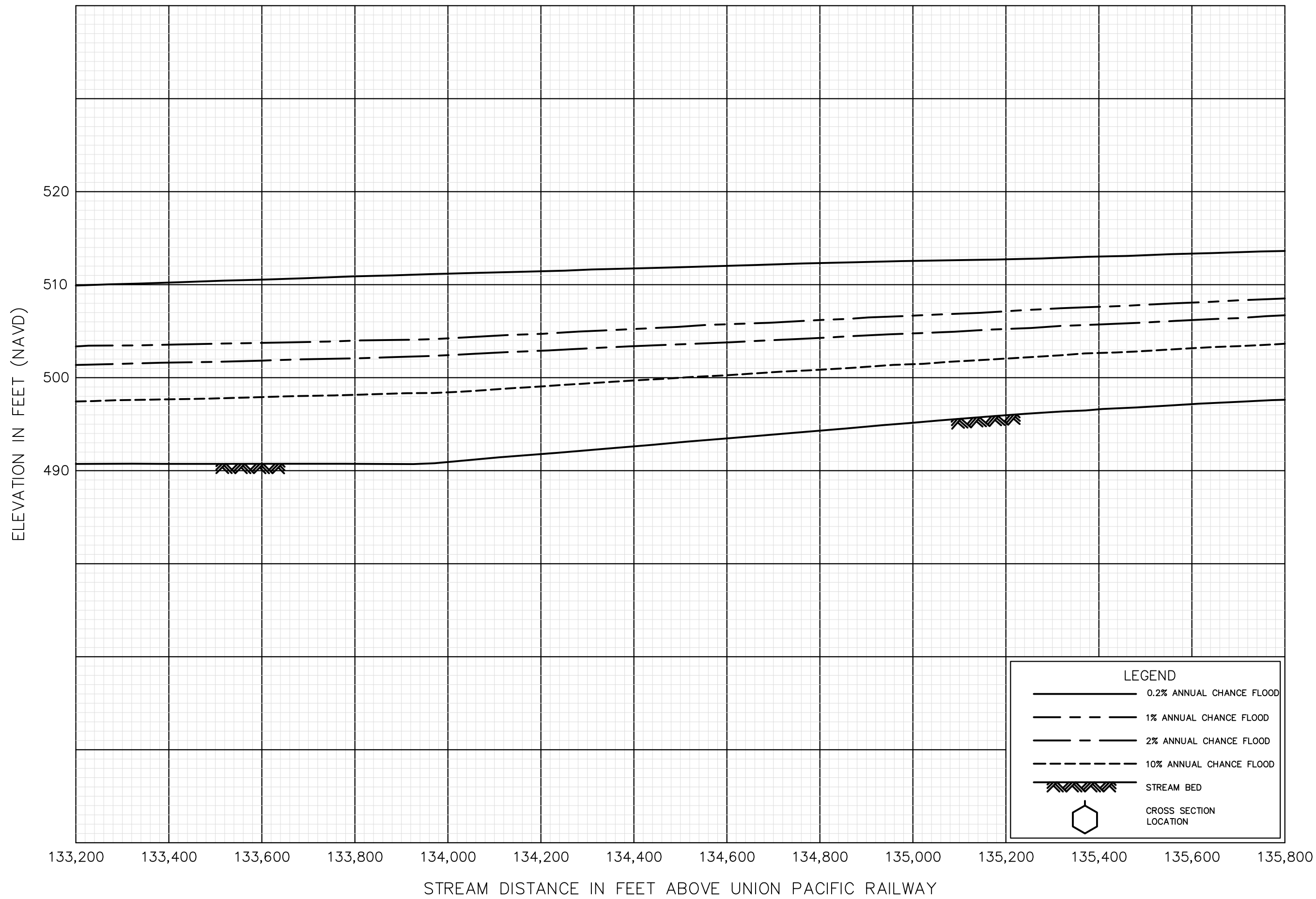
FEDERAL EMERGENCY MANAGEMENT AGENCY  
 KERN COUNTY, CA  
 AND INCORPORATED AREAS



FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

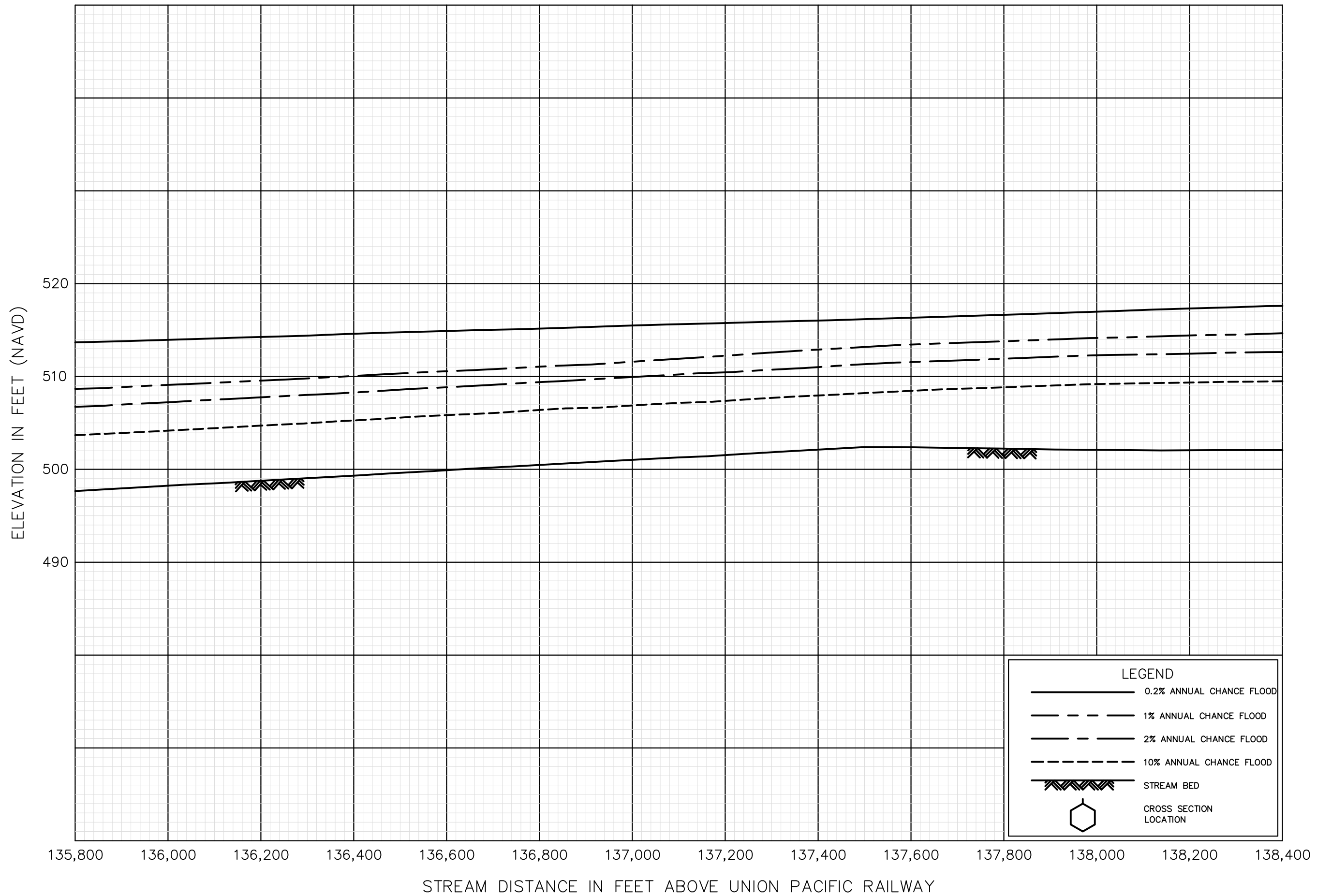
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS



FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS

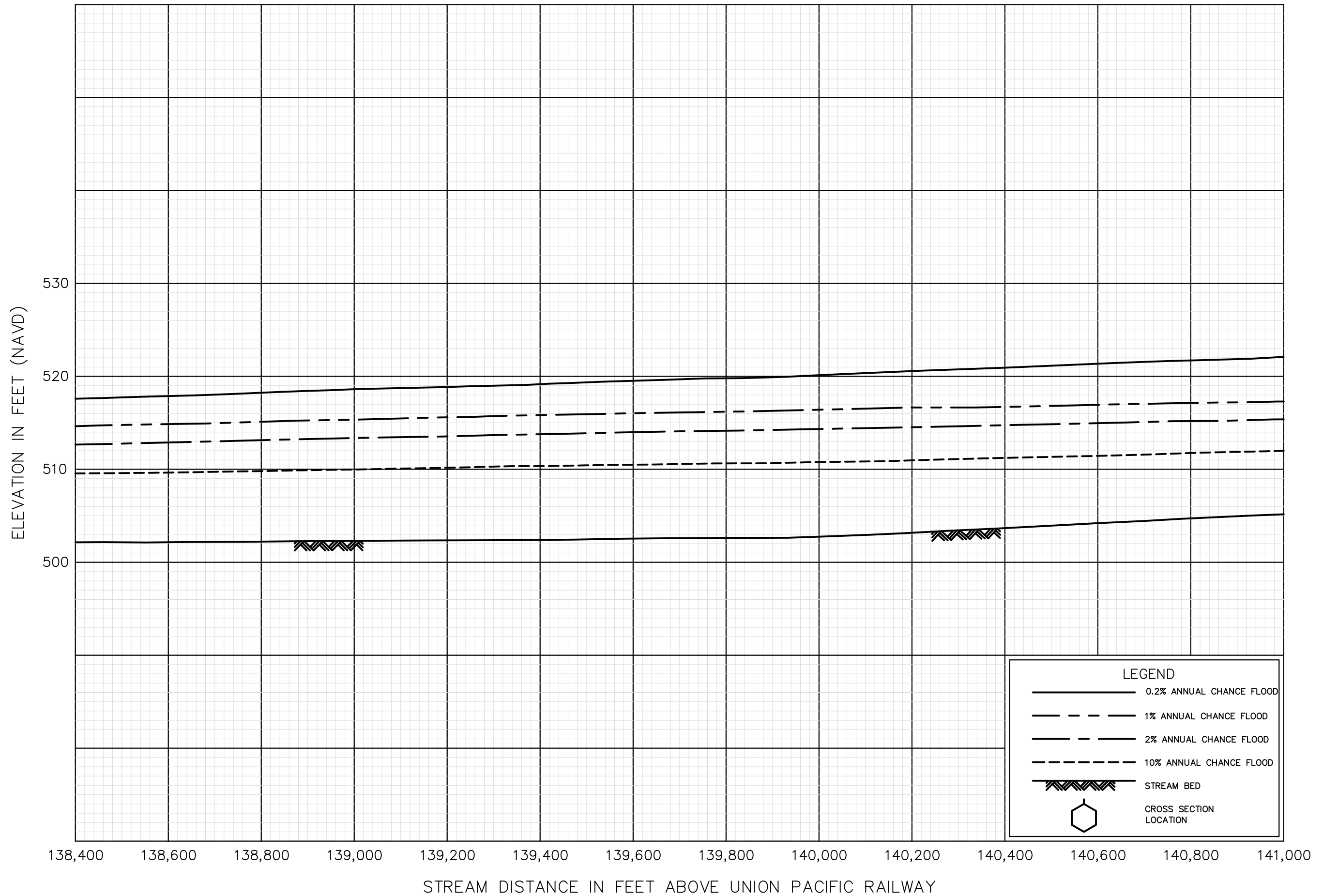


FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS



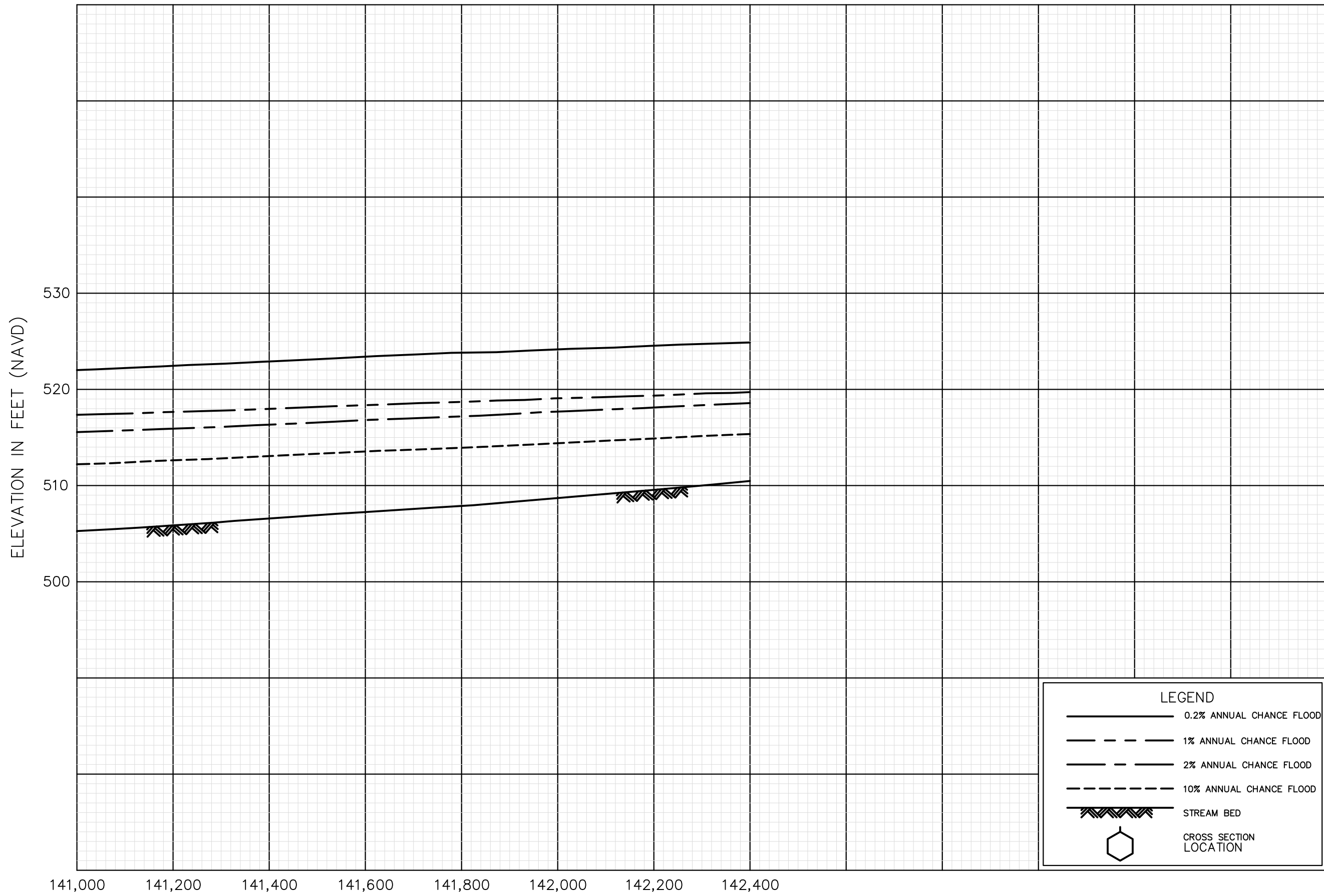


FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

KERN COUNTY, CA  
AND INCORPORATED AREAS



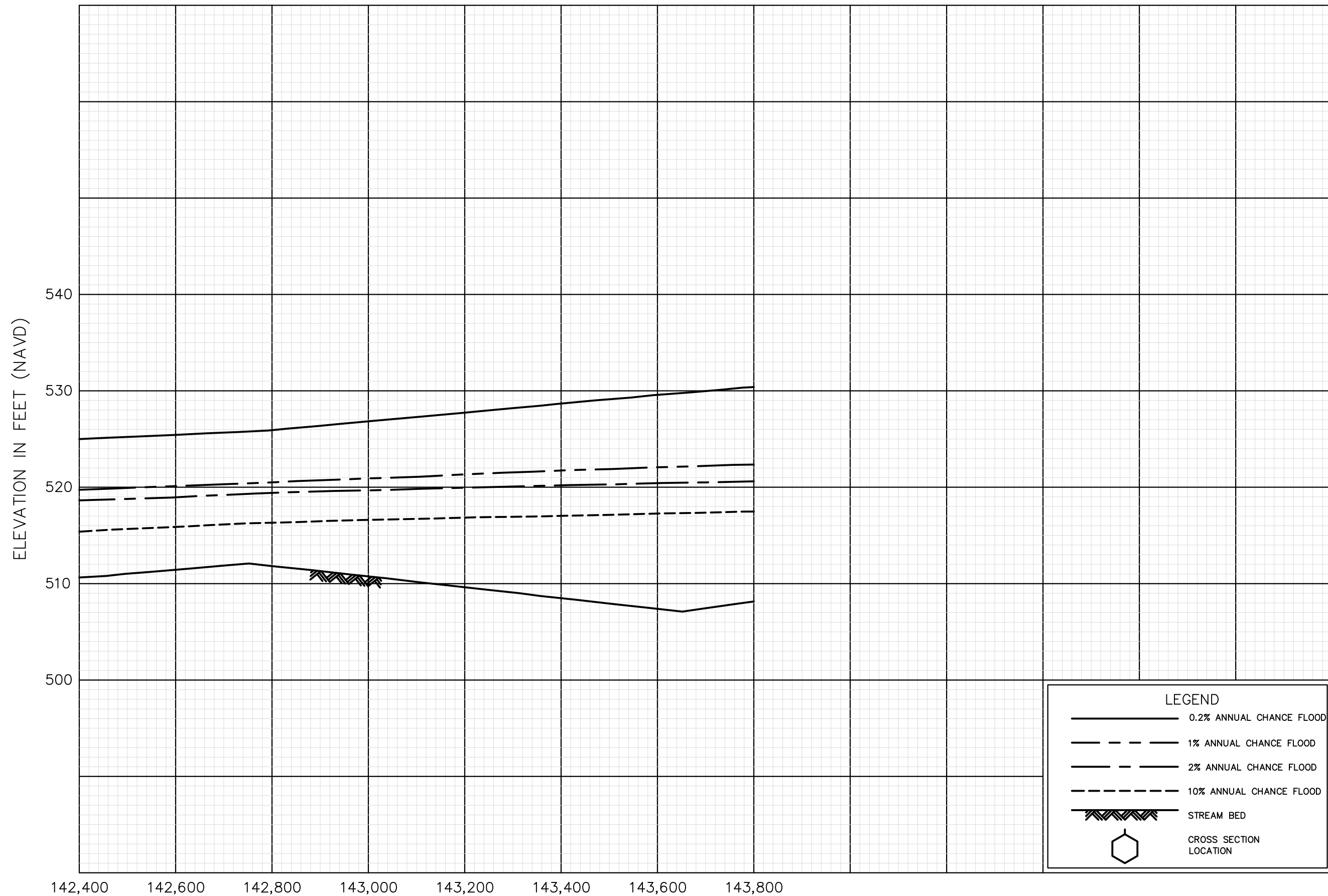
**LEGEND**

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







**FLOOD PROFILES**

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS

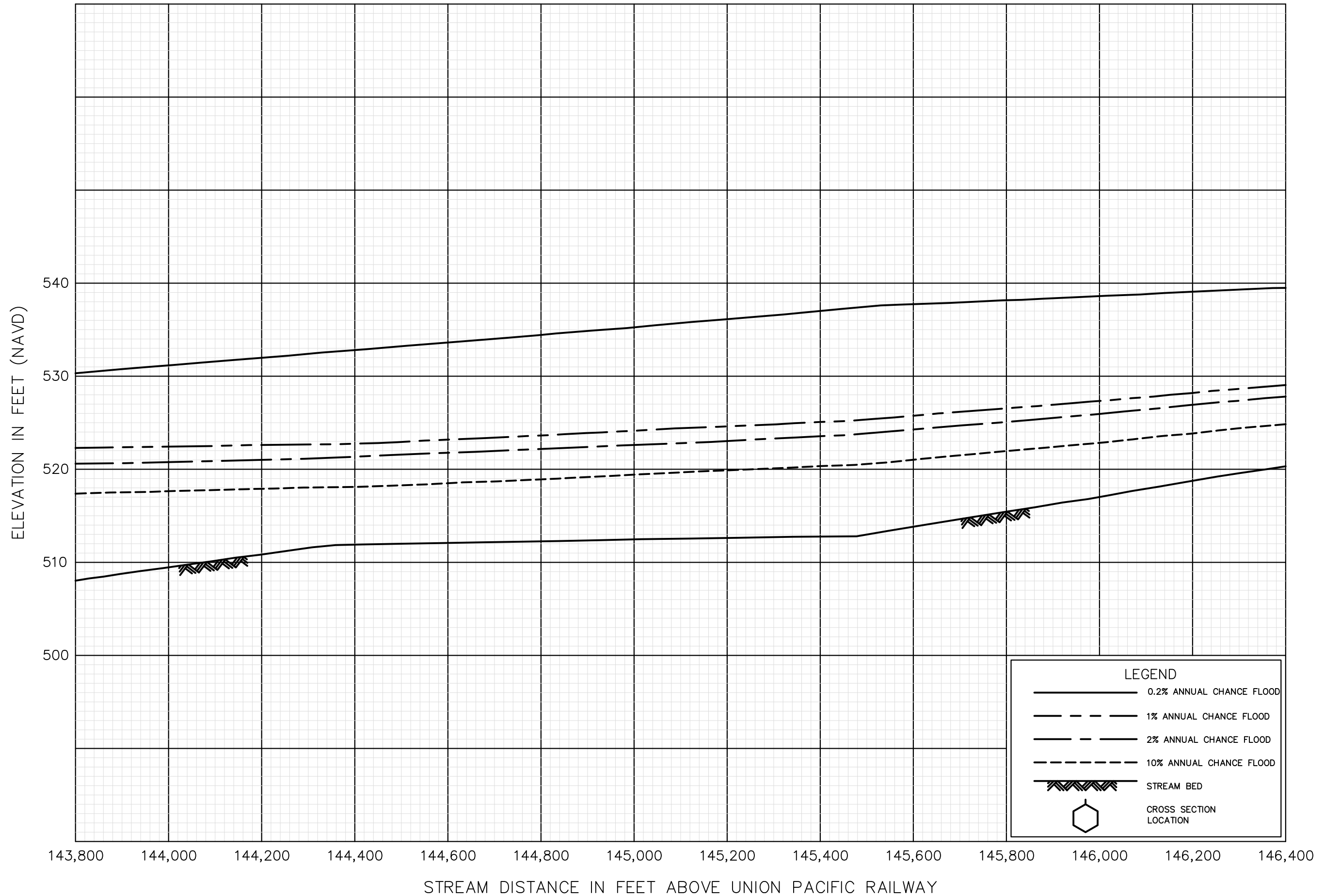


**LEGEND**

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

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS

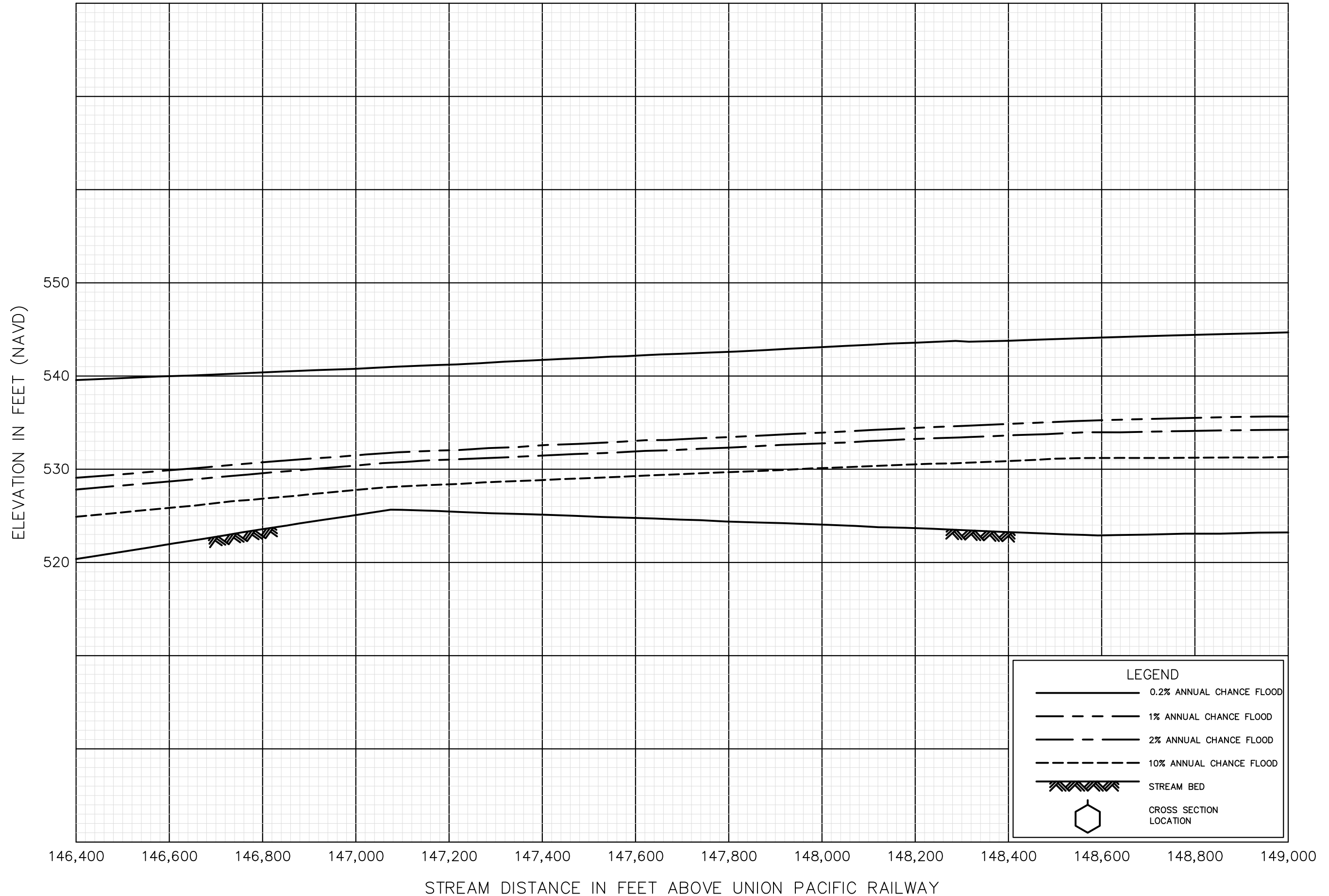
**FLOOD PROFILES**  
 KERN RIVER - WITH CONSIDERATION OF LEVEES



**FLOOD PROFILES**

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS

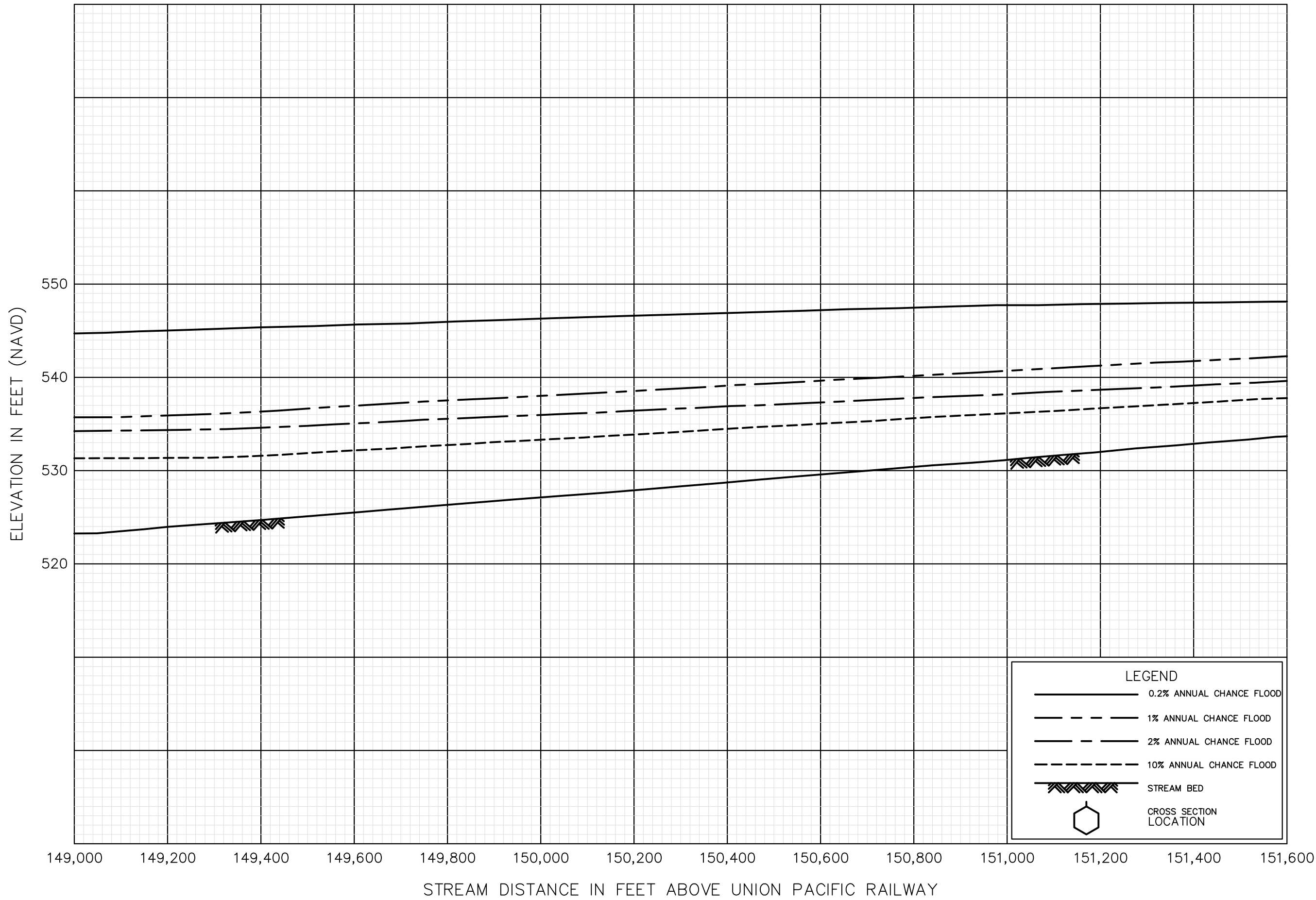


**FLOOD PROFILES**

KERN RIVER - WITH CONSIDERATION OF LEVEES

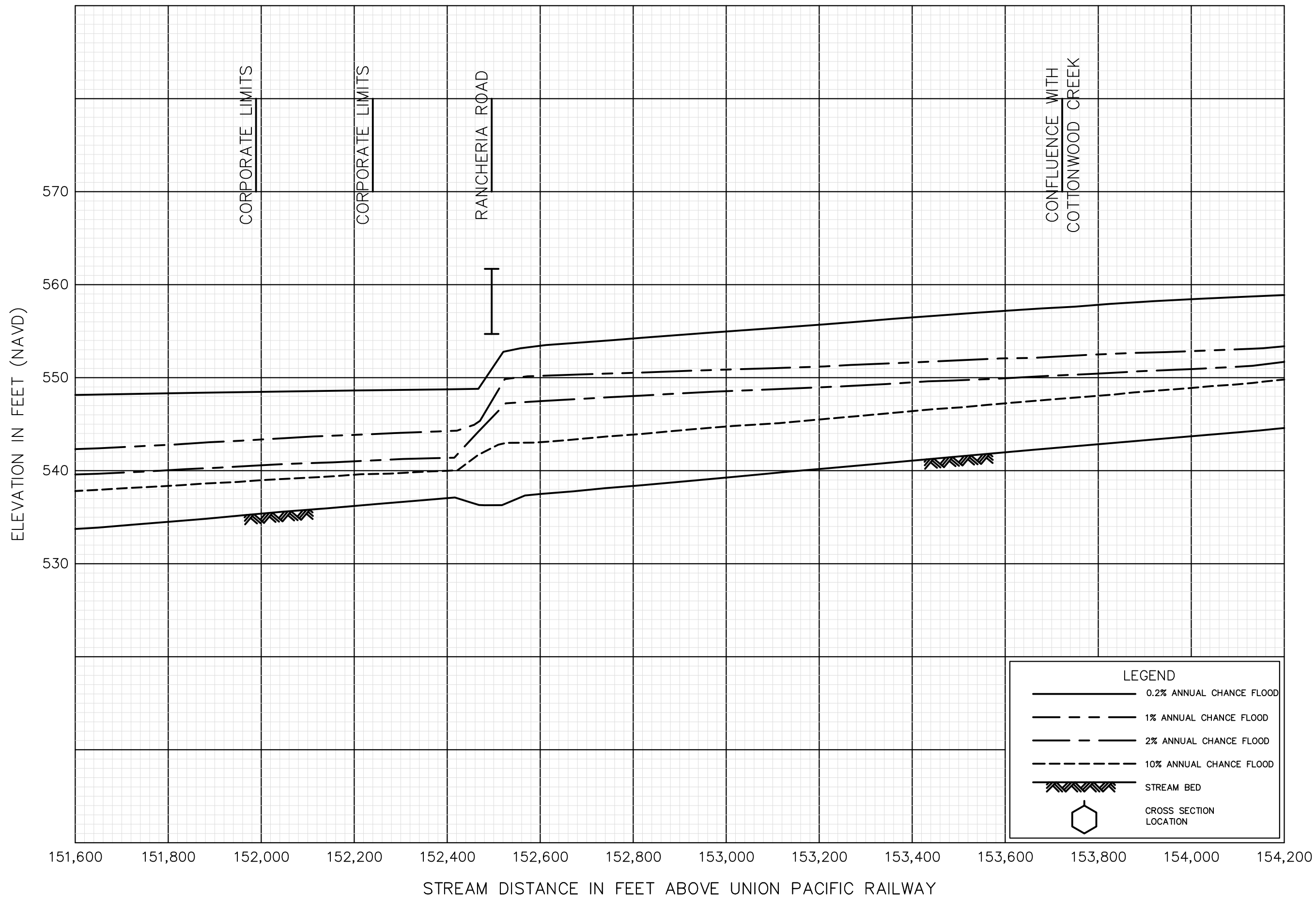
FEDERAL EMERGENCY MANAGEMENT AGENCY

**KERN COUNTY, CA**  
AND INCORPORATED AREAS



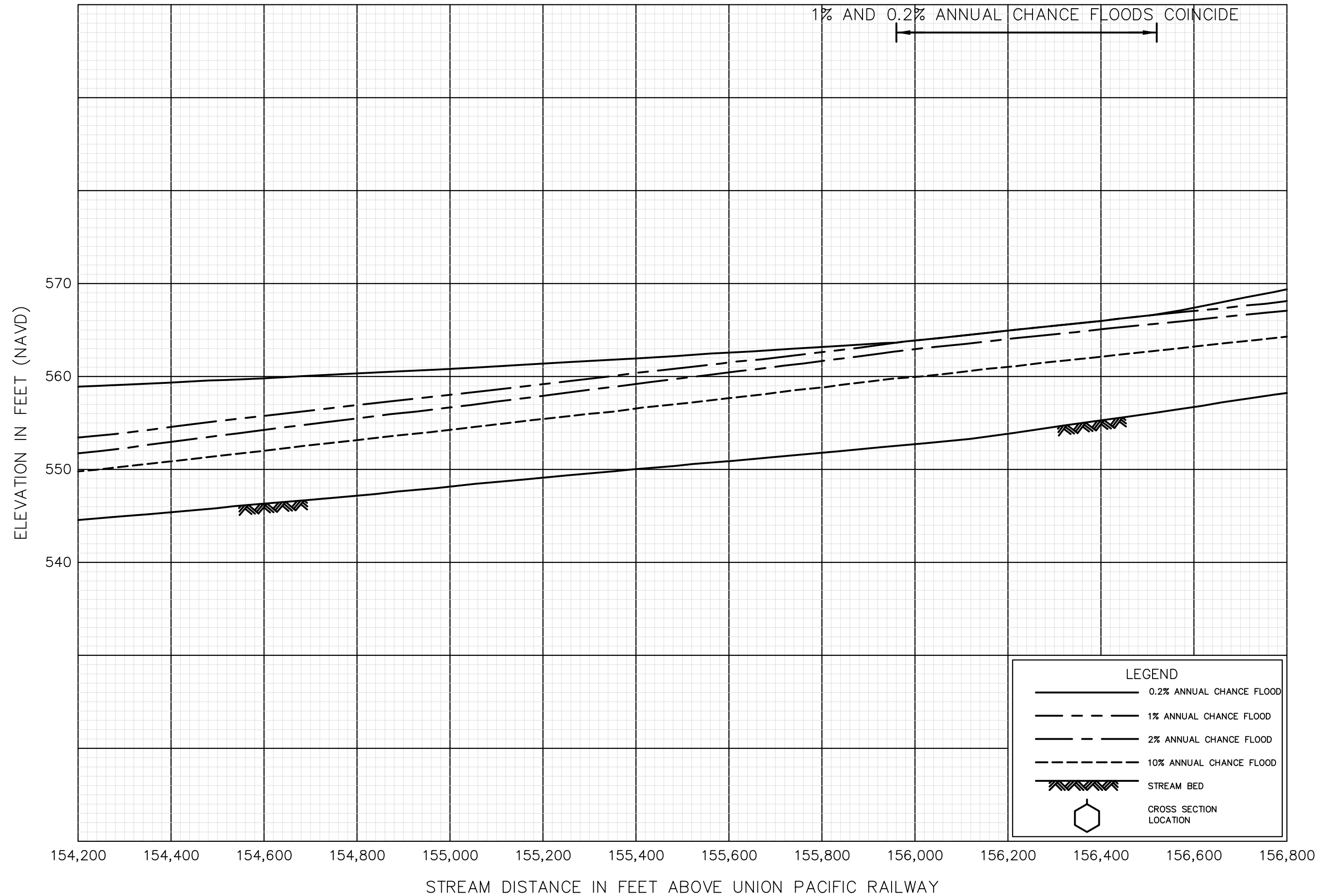
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS

**FLOOD PROFILES**  
 KERN RIVER - WITH CONSIDERATION OF LEVEES



FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS

**FLOOD PROFILES**  
 KERN RIVER—WITH CONSIDERATION OF LEVEES



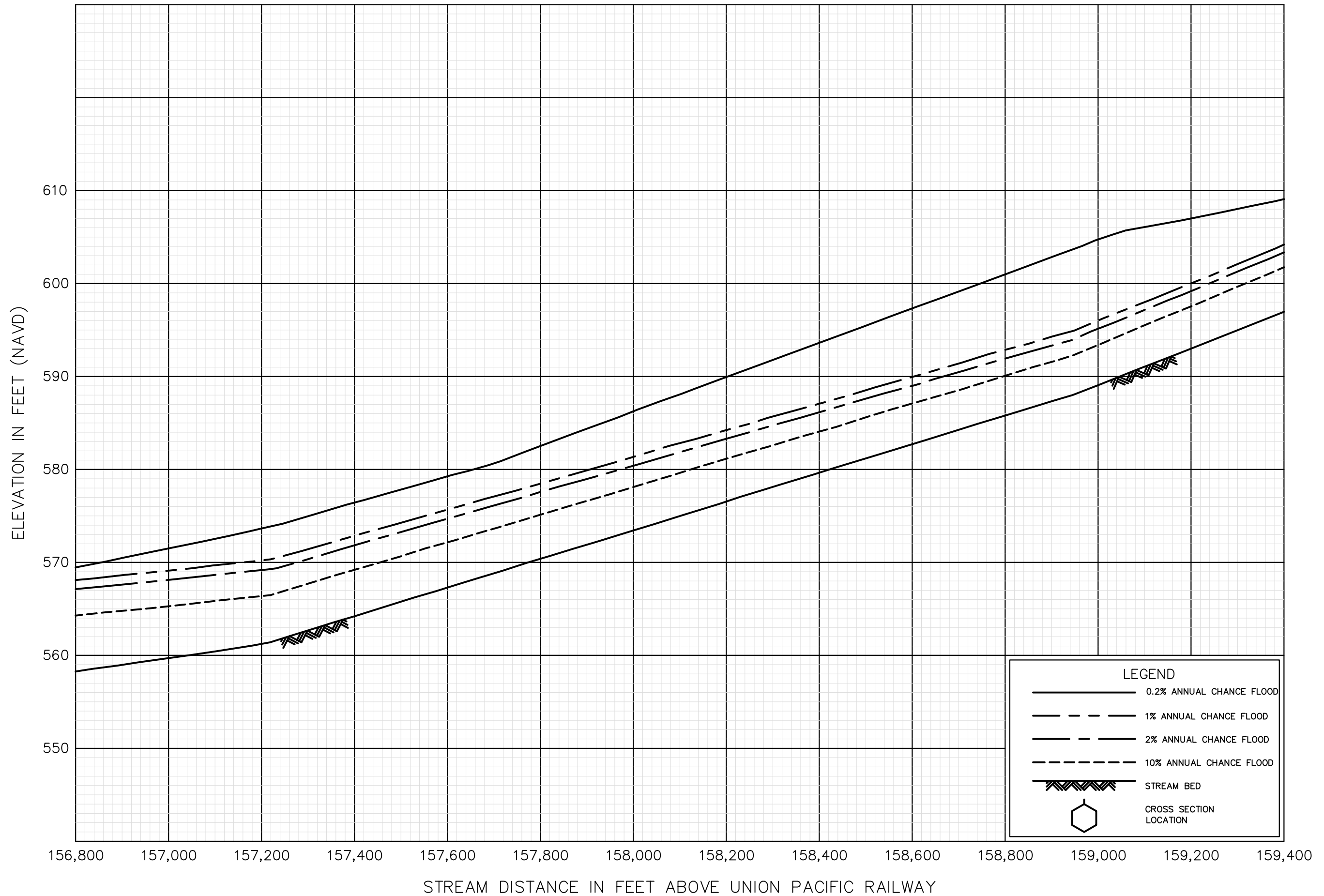
FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

KERN COUNTY, CA  
AND INCORPORATED AREAS



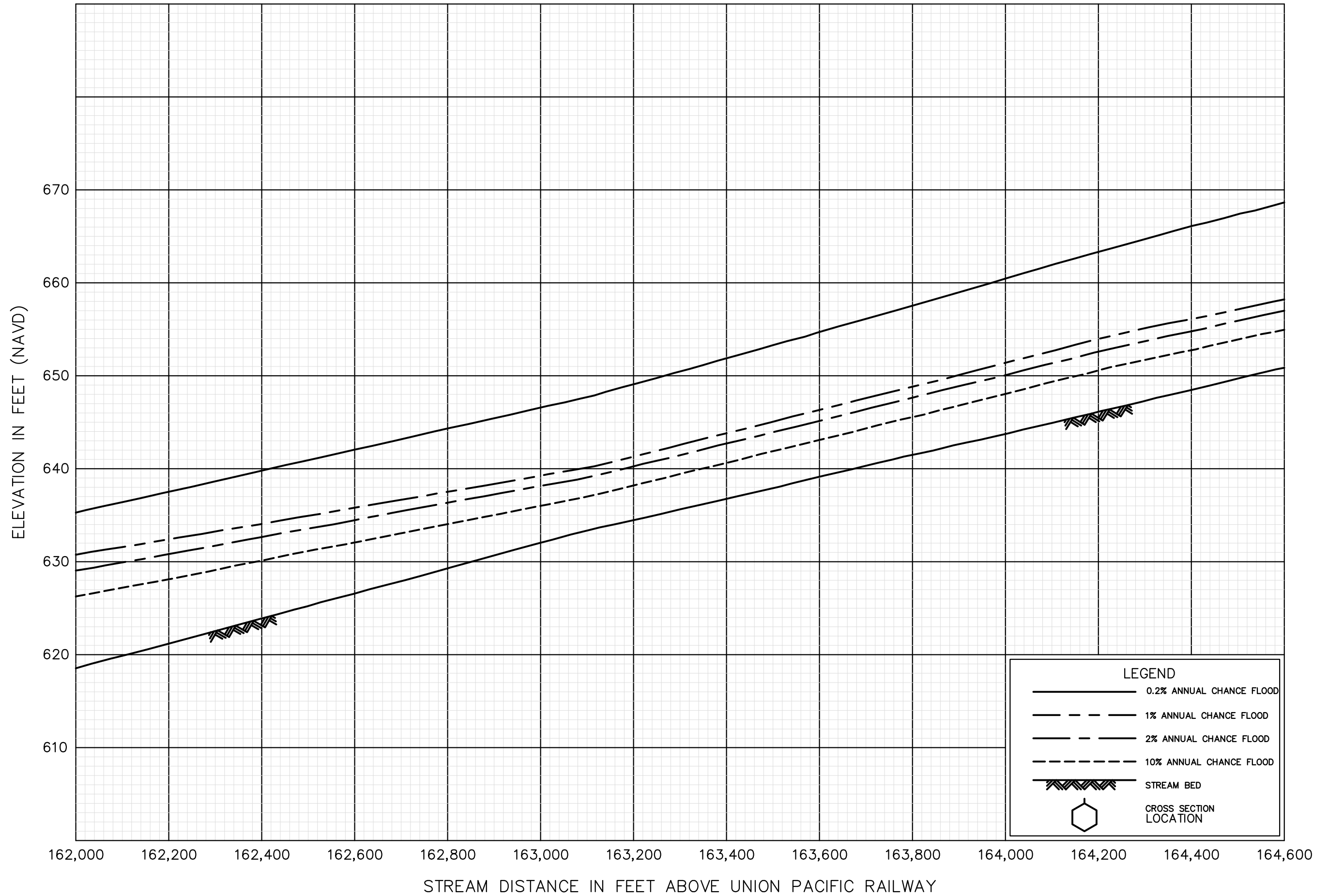


**FLOOD PROFILES**

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

**KERN COUNTY, CA**  
AND INCORPORATED AREAS

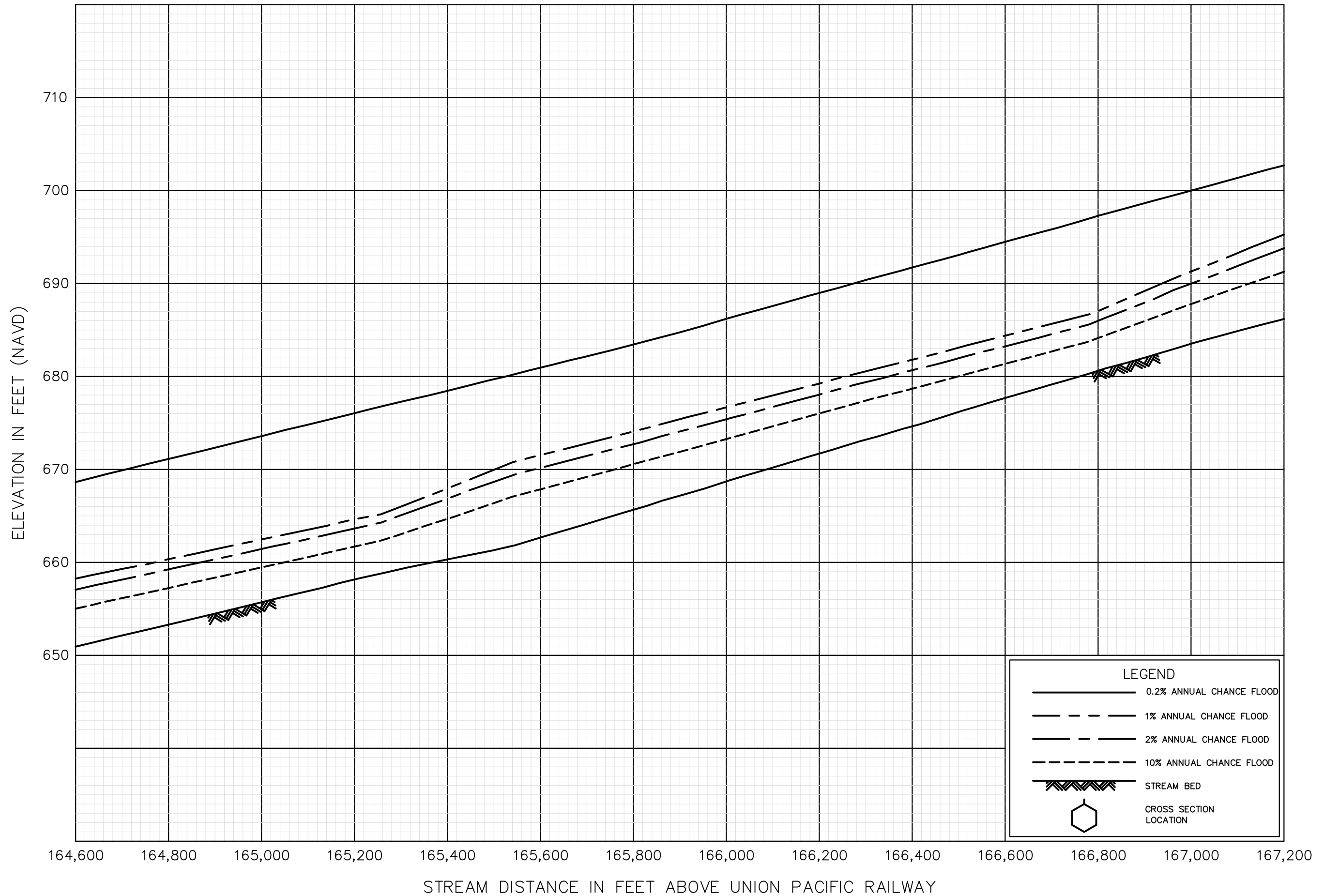


FLOOD PROFILES

KERN RIVER—WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

KERN COUNTY, CA  
AND INCORPORATED AREAS

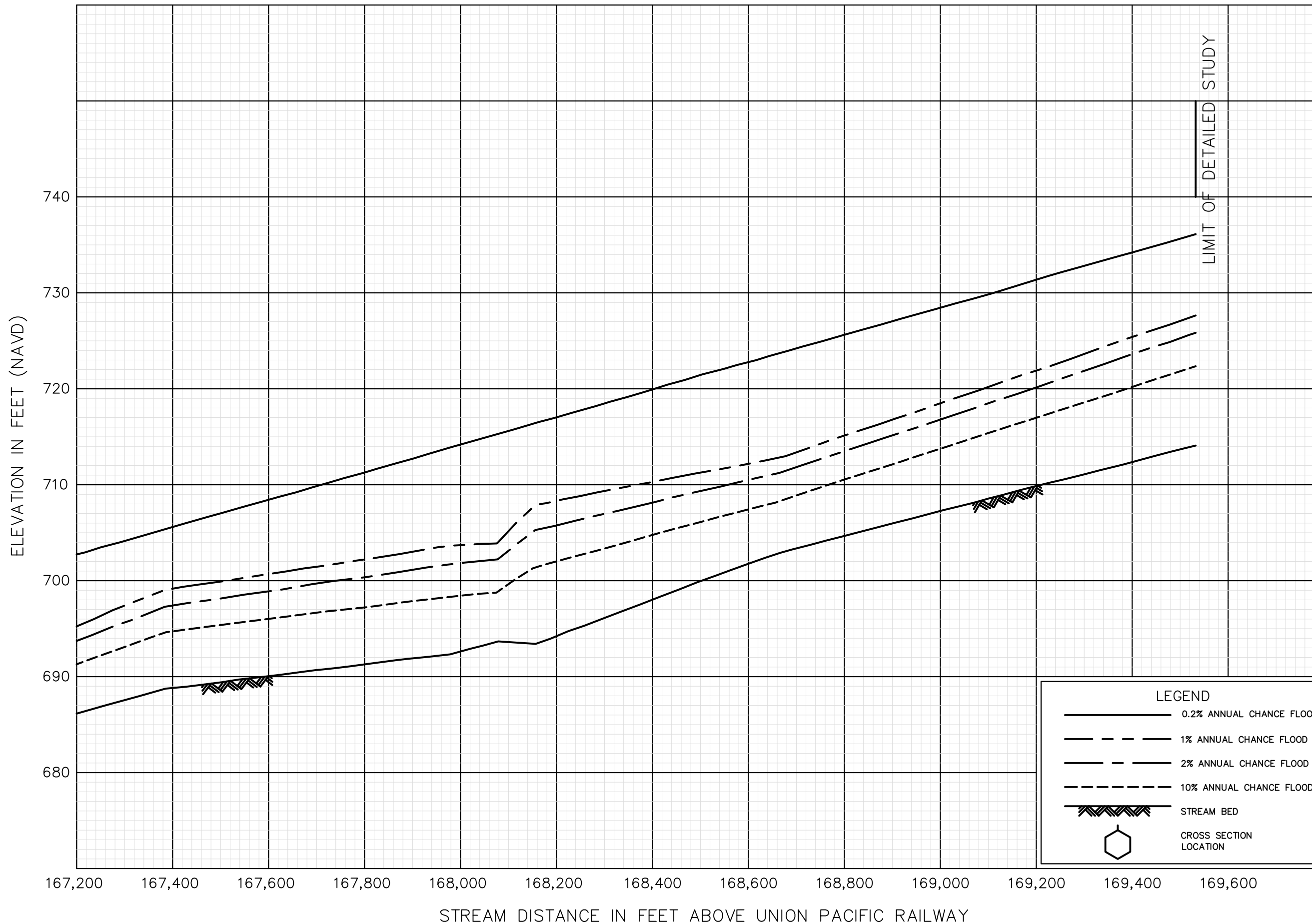


FLOOD PROFILES

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

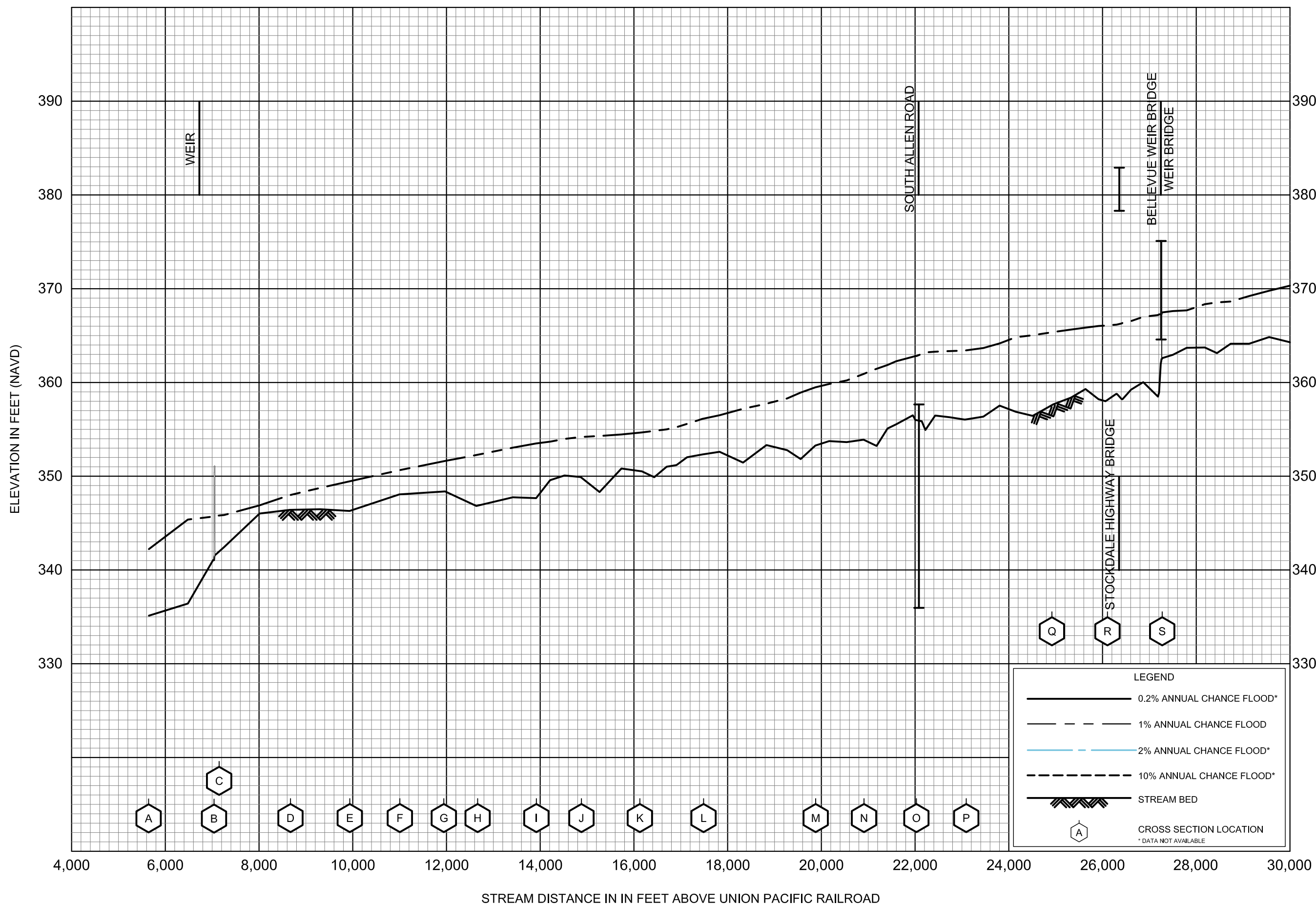
KERN COUNTY, CA  
AND INCORPORATED AREAS



**FLOOD PROFILES**

KERN RIVER - WITH CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY  
 KERN COUNTY, CA  
 AND INCORPORATED AREAS

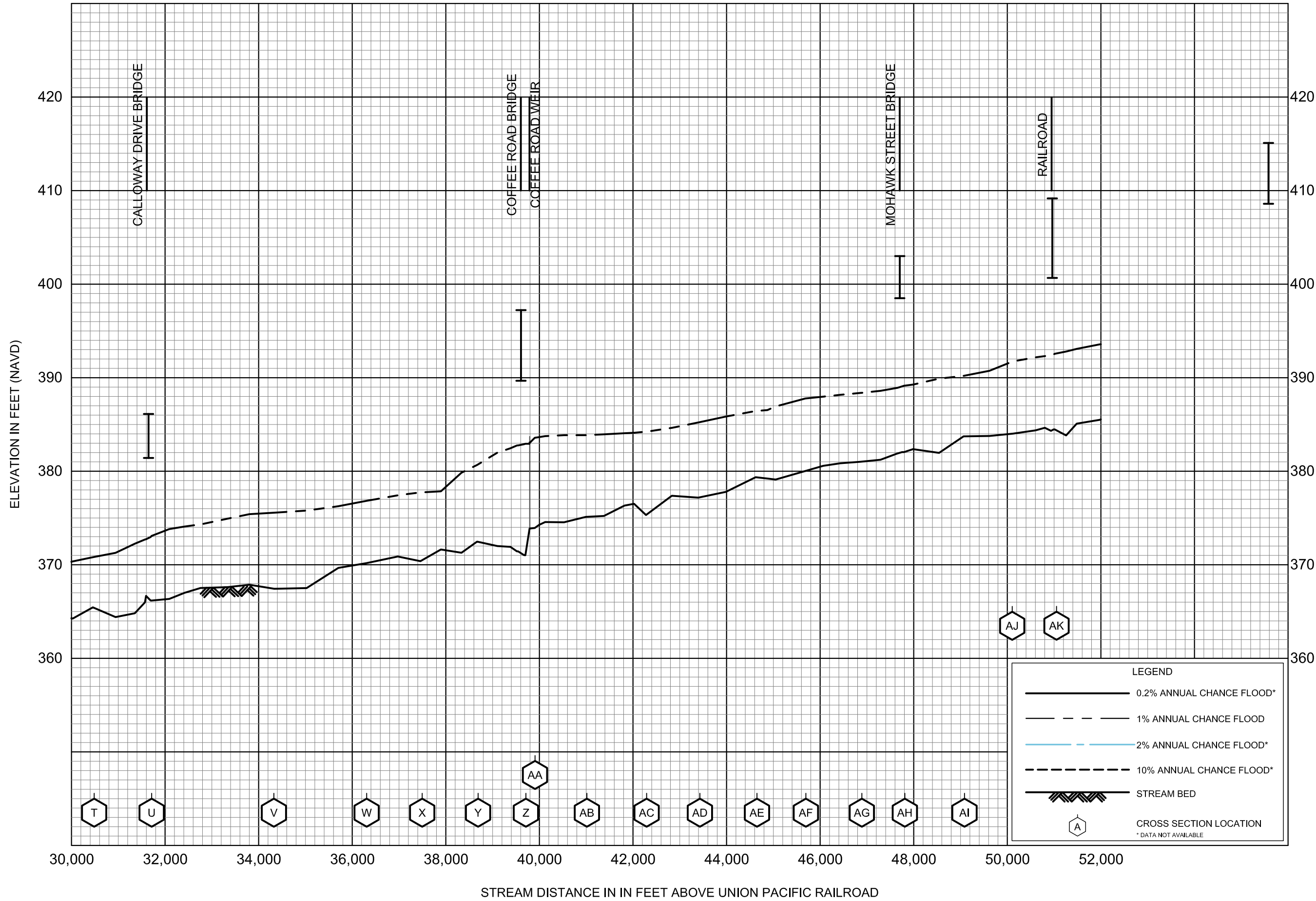


**FLOOD PROFILES**

**KERN RIVER - WITHOUT CONSIDERATION OF LEVEES**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**KERN COUNTY, CA**  
AND INCORPORATED AREAS

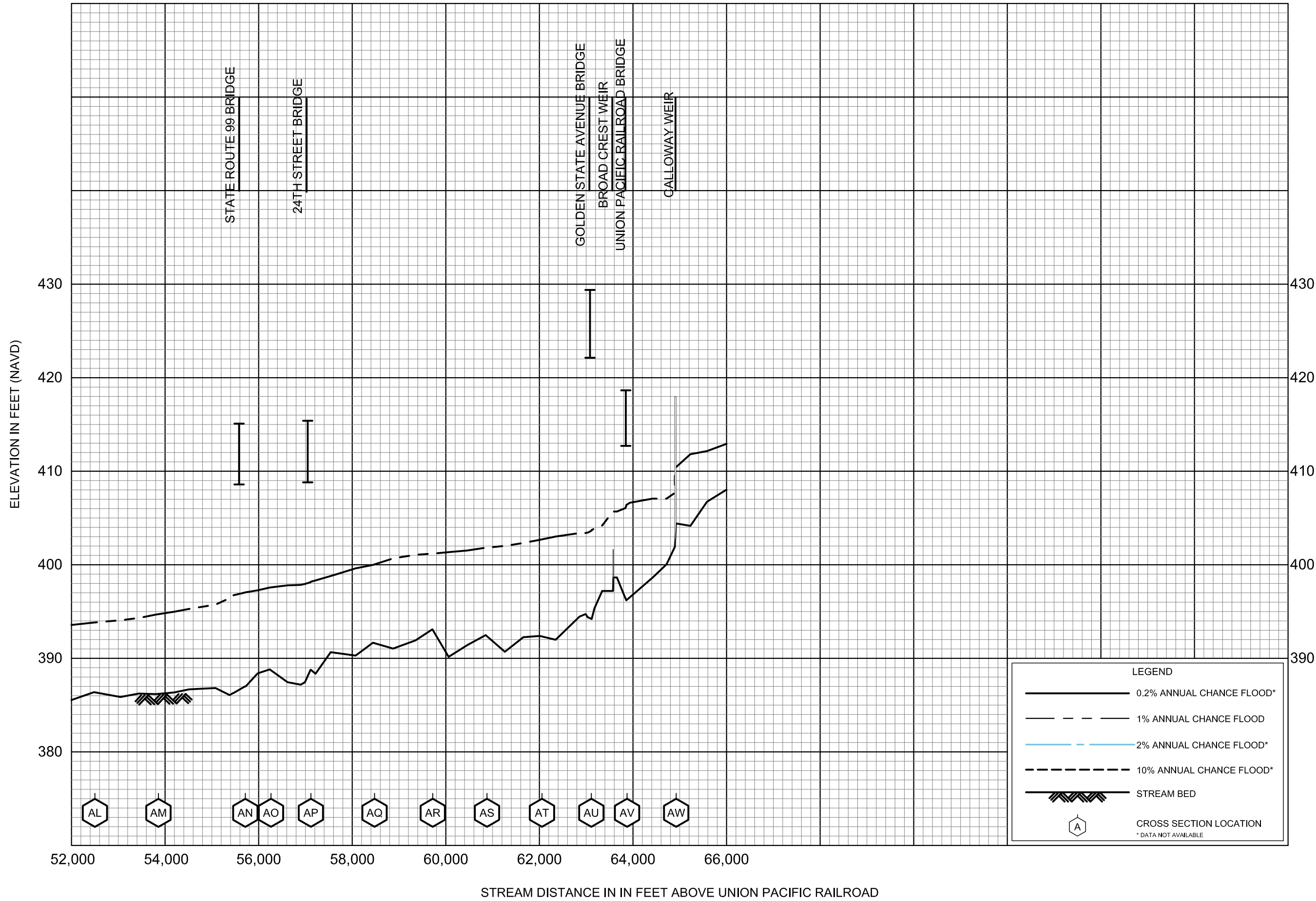


FLOOD PROFILES

KERN RIVER - WITHOUT CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY

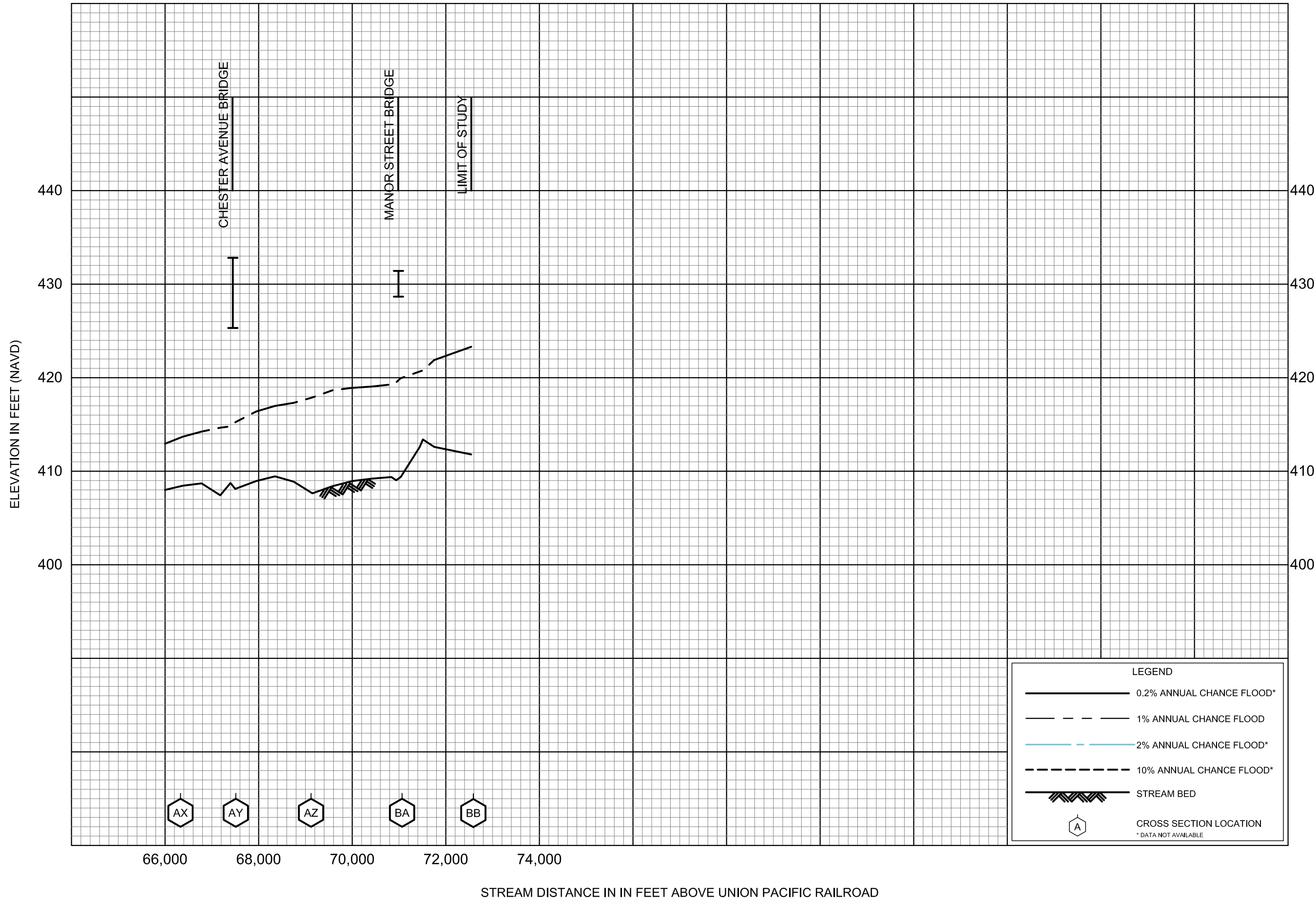
KERN COUNTY, CA  
AND INCORPORATED AREAS



FLOOD PROFILES

KERN RIVER - WITHOUT CONSIDERATION OF LEVEES

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 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  
\* DATA NOT AVAILABLE

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**KERN COUNTY, CA**  
 AND INCORPORATED AREAS

**FLOOD PROFILES**

**KERN RIVER - WITHOUT CONSIDERATION OF LEVEES**