

# FLOOD INSURANCE STUDY



## PEARL RIVER COUNTY, MISSISSIPPI, AND INCORPORATED AREAS

Community Name	Community Number
Picayune, City of	280130
Poplarville, City of	208365
Unincorporated Areas	280129
***Lumberton, City of	280337

\*\*\*Non-Participant



**PRELIMINARY**  
**March 30, 2007**



**Federal Emergency Management Agency**

FLOOD INSURANCE STUDY NUMBER  
28109CV000B

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Initial Countywide FIS Effective Date: May 17, 1990

Revised FIS Dates:   March 3, 1992  
                          [Current]

## TABLE OF CONTENTS – Volume 1

	<u>Page</u>
1.0 <u>INTRODUCTION</u>	1
1.1 Purpose of Study	1
1.2 Authority and Acknowledgments	1
1.3 Coordination	2
2.0 <u>AREA STUDIED</u>	3
2.1 Scope of Study	3
2.2 Community Description	6
2.3 Principal Flood Problems	7
3.0 <u>ENGINEERING METHODS</u>	7
3.1 Hydrologic Analyses	7
3.2 Hydraulic Analyses	13
3.3 Vertical Datum	15
4.0 <u>FLOODPLAIN MANAGEMENT APPLICATIONS</u>	16
4.1 Floodplain Boundaries	16
4.2 Floodways	17
5.0 <u>INSURANCE APPLICATIONS</u>	22
6.0 <u>FLOOD INSURANCE RATE MAP</u>	23
7.0 <u>OTHER STUDIES</u>	23
8.0 <u>LOCATION OF DATA</u>	24
9.0 <u>REFERENCES AND BIBLIOGRAPHY</u>	26

## FIGURES

	<u>Page</u>
Figure 1 – Flood Schematic	22

## TABLES

Table 1 - FLOODING SOURCES STUDIED BY DETAILED METHODS	4
Table 2 - FLOODING SOURCES STUDIED BY LIMITED DETAILED METHODS	5
Table 3 - SUMMARY OF DISCHARGES	9
Table 4 – MANNING’S “n” VALUES	15
Table 5 – FLOODWAY DATA	19
Table 6 – COMMUNITY MAP HISTORY	25

## EXHIBITS

Exhibit 1 - Flood Profiles	
Alligator Branch	Panels 01P – 02P
Bay Branch	Panel 03P
East Hobolochitto Creek	Panels 04P – 10P
Hobolochitto Creek	Panel 11P
Holley Creek	Panels 12P – 13P
Jumpoff Creek	Panels 14P – 17P
Juniper Creek	Panels 18P – 22P
Long Branch	Panels 23P – 27P
Mill Creek	Panels 28P – 29P
Mill Creek No. 1	Panels 30P – 33P
Mill Creek No. 3	Panels 34P – 38P
Mill Creek No. 4	Panels 39P – 41P
Pearl River	Panel 42P
Second Alligator Branch	Panels 43P – 44P
Second Alligator Branch Tributary	Panel 45P
Thigpen Creek	Panel 46P
West Hobolochitto Creek	Panels 47P – 52P
White Sand Creek	Panels 53P – 57P
Wolf River	Panels 58P – 70P

Exhibit 2 - Flood Insurance Rate Map Index and Street Index	
Flood Insurance Rate Map	

FLOOD INSURANCE STUDY  
PEARL RIVER COUNTY, MISSISSIPPI AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study revises and updates information on and severity of flood hazards in the geographic area of Pearl River County, Mississippi, including the Cities of Lumberton, Picayune, Poplarville and the unincorporated areas of Pearl River County, (hereinafter referred to collectively as Pearl River County), and aids in the administration of the national Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood risk data for various areas of the community that will be used to establish actuarial flood insurance rates and assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

This Flood Insurance Study (FIS) revises and updates a previous FIS/Flood Insurance Rate Map (FIRM) for Pearl River County that includes the City of Picayune (Reference 1), the City of Poplarville. The City of Lumberton is geographically located in both Lamar and Pearl River County. The flood hazard information for the City of Lumberton is for informational purposes only. This information will be used by the community to update existing floodplain regulations as part of the Regular Phase of the National Flood Insurance Program (NFIP). The information will also be used by local and regional planners to further promote sound land use and floodplain development.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the State (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgments

The sources of authority for this Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

For the May 17, 1990 initial countywide revision, the hydrologic and hydraulic analyses for Thigpen Creek, Bay Branch, Holley Creek, and Mill Creek were performed by the U. S. Army Corps of Engineers, Mobile District, for the Federal Insurance Administration, under Inter-Agency Agreement Nos. IAA-H-7-76, Project Order No. 19, and IAA-H-10-77, Project Order No. 19. This portion of the study was completed in October 1978.

The hydrologic and hydraulic analyses for Hobolochitto Creek, East Hobolochitto Creek, West Hobolochitto Creek, Alligator Branch, Second Alligator Branch and

Second Alligator Branch Tributary, were performed by Neel-Schaffer, Inc. (the Study Contractor) for the Federal Emergency Management Agency (FEMA), under Contract No. EMW-86-C-2246. This portion of the study was completed in October 1987.

For the March 3, 1992 revision, the hydrologic and hydraulic analyses for Mill Creek were performed by the Vicksburg District of the U. S. Army Corps of Engineers (COE) for the Federal Emergency Management Agency (FEMA), under Inter- Agency Agreement Nos. EMW-88-E-2768 and EMW-89-3-2994, Project Order Nos. 3D and 3B, respectively. This portion of the study was completed in April 1990.

For the this revision, the hydrologic and hydraulic analysis for Hobolochito Creek, East Hobolochito Creek, West Hobolochito Creek, Jump Off Creek, Juniper Creek, Long Branch Creek, Mill Creek, White Sand Creek and Wolf River, were performed by Camp, Dresser & McKee for the Pearl River County Cooperating Technical Partner (CTP), under CTP Agreement EMA-2004-CA-5027. The work for this revision was completed July 11, 2006.

Base map information that was used for this study was provided in digital format by Pearl River County. This data was created in State Plane NAD 83 Coordinates, U.S. Survey Feet and was produced at scales of 1:1,200 (1"=100'); 1:2,400 (1"=200'); and 1:4,600 (1"=400'). Aerial photography of the area was captured during February 2003.

### 1.3 Coordination

For the May 17, 1990 initial countywide revision, a meeting was held at the County Courthouse in Poplarville, Mississippi, on February 11, 1986, attended by representatives of the Study Contractor, FEMA, and Pearl River County, and interested local people. Other coordination activities undertaken in connection with the study included meetings or conferences with the U.S. Army Corps of Engineers (COE), the U.S. Geological Survey (USGS), and the Education and Research Center of Mississippi.

On June 11, 1989, the results of the original Flood Insurance Study were reviewed and accepted at a final coordination meeting attended by representatives of the Study Contractor, FEMA and the community.

For the March 3, 1992 revision, the result of the Mill Creek study were reviewed and accepted at a final coordination meeting attended by representatives of the Study Contractor, FEMA and the community.

The initial Consultation Coordination Officer (CCO) meeting for this revision was held on October 26, 2004 and attended by representatives of FEMA, Pearl River County CTP, CDM, Dungan Engineering and the Communities.

The results of this study were reviewed at the final CCO meeting held on \_\_\_\_\_, and attended by representatives of

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problems raised at that meeting have been addressed in this study. All

## 2.0 AREA STUDIED

### 2.1 Scope of Study

This FIS report covers the geographic area of Pearl River County, including the incorporated communities listed in Section 1.1. All or portions of the flooding sources listed in Table 1, "Flooding Sources Studied by Detailed Methods," were previously studied by detailed methods.

Flooding caused by overflow of Hobolochitto Creek, West Hobolochitto Creek, East Hobolochitto Creek, Alligator Branch, Second Alligator Branch, Second Alligator Branch Tributary, Bay Branch, Mill Creek, Holley Creek, Thigpen Creek, and the Pearl River was studied in detail.

Areas having low development potential or minimal flood hazards were previously studied using approximate analyses. The results were shown on the Flood Hazard Boundary Map for the unincorporated areas of the Pearl River County and the Flood Insurance Study for the City of Picayune (References 1 and 2) and are incorporated into this Flood Insurance Study.

The areas studied were selected with priority given to all known flood hazard areas and areas of projected development or proposed construction through February 2003. The scope and methods of study were proposed to and agreed upon by FEMA and Pearl River County.

For the March 3, 1992 revision, Mill Creek was restudied by detailed methods from a point approximately 0.66 mile upstream of its confluence with the Pearl River to Rosa Street in the City of Picayune.

As part of this countywide FIS, updated analyses were included for the flooding sources shown in Table 2 for "Flooding Sources Studied by Limited Detailed Methods."

TABLE 1 - FLOODING SOURCES STUDIED BY DETAILED METHODS

<u>Stream</u>	<u>Limits of Revision</u>
Alligator Branch	From the Pearl River County boundary to a point 2,500 feet upstream of Solid Rock Road
Bay Branch	From its confluence with East Hobolochitto Creek to a point approximately 2,900 feet upstream of Interstate 59
East Hobolochitto Creek	From its confluence with Hobolochitto Creek to approximately 12.1 miles upstream to West Union Road
Hobolochitto Creek	From the corporate limits of the City of Picayune to a point 4,800 feet upstream of SH 43
Holley Creek	From its confluence with East Hobolochitto Creek to East Sycamore Road
Mill Creek	From a point approximately 3,500 feet up stream of its confluence with Pearl River to a point just upstream of Rosa Street
Pearl River	From the Pearl River County boundary to a point 0.4 miles upstream of Interstate 59
Second Alligator Branch	From the Pearl River County boundary to Interstate 59
Second Alligator Branch Tributary	From its confluence with Second Alligator Branch to a point approximately 2,400 feet upstream of Shorty Burgess Road
Thigpen Creek	From its confluence with East Hobolochitto Creek to a point approximately 500 feet upstream of Stemwood Drive
West Hobolochitto Creek	From its confluence with Hobolochitto Creek to approximately 12.2 miles upstream to Henryfield McNeill Road



TABLE 2 - FLOODING SOURCES STUDIED BY LIMITED DETAIL METHODS

East Hobolochitto Creek	From West Union Road to Savannah Millard Road
West Hobolochitto Creek	From Henleyfield-McNeill Road to Highway 26 W
Jumpoff Creek	From the confluence with East Hobolochitto Creek to approximately 0.7 miles upstream of Garrett & McGill Drive
Juniper Creek	From the confluence with Juniper Creek to just upstream of Dupont-Harts chapel Road
Long Branch	From the confluence with West Hobolochitto Creek to approximately 1 mile upstream of Nellie Burks Road
Mill Creek No. 1	From Highway 43S at County line to approximately 1.9 mile upstream of West Union Road
Mill Creek No. 3	From the confluence with West Hobolochitto Creek to approximately 2.0 miles upstream of Highway 11
Mill Creek No. 4	From the confluence with West Hobolochitto Creek to approximately 1.7 miles upstream of Rock Ranch Road
White Sand Creek	From its confluence with West Hobolochitto Creek to approximately 1.4 miles upstream of Hoadley Road
Wolf River	From Stone County and Pearl River County Boundary to approximately 31.7 miles upstream to Highway 11

## 2.2 Community Description

Pearl River County is located in the southwestern part of the State of Mississippi, immediately north of Hancock County. Stone and Forrest Counties border on the east with Marion and Lamar Counties on the north. The Pearl River forms the western boundary between Pearl River County and Washington and St. Tammany Parishes, Louisiana.

According to the U. S. Census Bureau, in the years between 1990 and 2000, the population of Pearl River County increased from 38,714 persons to 48,621. Two municipalities, Picayune and Poplarville are located in Pearl River County. The 2000 Census placed the population of those communities at 10,535 and 2,601 respectively, or 33.9 percent of the County's population. The remaining population resides in the unincorporated communities and rural areas of the County.

Pearl River County's weather is very diverse and is sometimes is susceptible to high winds and heavy rains from hurricanes making landfall along the Gulf Coast. The northern portion of the county is located in an area recognized by the Federal Emergency Management Agency (FEMA) as a high wind zone. Steams and rivers, particularly the Pearl River and Hobolochitto (Boley) Creek and their tributaries are subject to flooding due to heavy rains and storm water runoff. Additionally, storm water flooding along Alligator Branch and its tributaries is a problem in the southern portion of the county in and around the Nicholson Community.

Pearl River County is a growing community. While increased commercial development and population are welcome, they present their own set of problems. New retail establishments are springing up to serve the population, particularly around Picayune. These businesses often pave large areas, displacing storm water and increasing the potential for flooding in areas not affected prior to the development occurring. Previously undisturbed land is being graded to make way for new housing developments. Fill is often introduced to level building sites and natural drainage patterns are disturbed or re-routed, increasing the potential for silting of existing drainage ways and for flooding.

The climate of the area is mild and humid, with temperatures ranging from a mean of approximately 54 degrees Fahrenheit (°F) in winter to 80°F in summer. Mean annual rainfall is approximately 58 inches, with the least during October and the most during July

Pearl River County is located in the Gulf Coastal Plain physiographic province, which is characterized by faint relief with large tracts of marsh and swamp. Predominant soil types are sands and clays. Principal tree growth consists of longleaf and slash pine.

The economy of the area is generally based on agriculture, forestry, and livestock. Poultry and cattle are important sources of income, and principal crops include

cotton, corn, soybeans, and hay. Several sawmills, veneer mills, and wood preserving plants are in the county.

### 2.3 Principal Flood Problems

Low-lying areas of Pearl River County located in the floodplains of Hobolochitto, East Hobolochitto, and West Hobolochitto Creeks are inundated several times annually, with serious flooding occurring every 4 or 5 years. The greatest known flood on Hobolochitto Creek occurred during July 1916 when the floodwaters were estimated to have reached an elevation of 56.7 feet National Geodetic Vertical Datum of 1929 (NGVD) at the U.S. Highway 11 bridge over East Hobolochitto Creek. The 1916 flood has been estimated to have a recurrence interval greater than the 500-year event. Other severe floods since 1916 were the floods of June 1928, December 1961, April 1964, April 1979, and February 1981 (References 1 and 5).

Alligator Branch, Second Alligator Branch, and Second Alligator Branch Tributary flow through tracts that are considered promising growth areas, although now there is only scattered development. Low-lying areas located in these drainage basins are subject to flash flooding from intense, short-duration rainfall.

## 3.0 ENGINEERING METHODS

For the flooding sources studied by detailed methods in the community, standard hydrologic and hydraulic study methods were used to determine the flood-hazard data required for this study. Flood events of a magnitude that is expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10-, 2-, 1-, and 0.2-percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long-term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood that equals or exceeds the 1-percent-annual-chance flood in any 50-year period is approximately 40 percent (4 in 10); for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

### 3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for each riverine flooding source studied in detail affecting the community.

## **Initial Countywide and Previous Studies**

Flood frequency estimates of peak discharges for Alligator Branch, Second Alligator Branch, and Second Alligator Branch Tributary were computed using regression equations for ungaged streams (Reference 4). The peak discharge for the 0.2-percent annual chance flood was determined by developing a flood frequency curve from regression equations and extending the log plot to a flood of 0.2 percent probability (500-year flood).

For Hobolochitto Creek, East Hobolochitto Creek, and West Hobolochitto Creek, a HEC-1 model (Reference 5) was used to develop peak discharge values that were compared with peak discharge values obtained from regression equations and the discharge values developed for the Flood Insurance Study for the City of Picayune, Mississippi (Reference 1).

The peak discharge values obtained from the regression equations produced water-surface elevations that were in closer agreement with high-water marks of previous floods than water-surface profiles developed using the HEC-1 model or the Flood Insurance Study for Picayune (Reference 1).

The statistics for Thigpen Creek, Bay Branch, Holley Creek, and Mill Creek were computed using equations from the Flood Insurance Study for Saraland, Alabama (Reference 6). Discharge-frequency curves were computed using Bulletin No. 17 (Reference 7) and adjusted for urbanization using established methods (Reference 8). Urbanized discharges are estimated using a factor that is a function of the percentage of the drainage area that is impervious and the percentage of the drainage area that is served by storm sewers. The method was adapted to the Picayune area by a rainfall intensity ratio (Reference 9).

For the March 3, 1992 revision, the flows for Mill Creek were developed using synthetic rainfall data from the U. S. Weather Bureau Technical Paper No. 40 (Reference 10). The 24-hour rainfall amounts were distributed into 0.5-hour increments and arranged in a sequence considered critical for runoff. Hydrographs were developed by applying the distributed synthetic rainfall data to the unit hydrographs computed using the COE HEC-1 computer program (Reference 11). The infiltration rate value for initial loss was 0.5 inch per hour. Runoff was routed through the basin using the Modified Puls method. Snyder's unit graph coefficients were developed for the drainage basin.

## **Revised Analysis**

For this revision, the peak discharge values obtained for East Hobolochitto Creek, Jumpoff Creek, Juniper Creek, Long Branch, Mill Creek No. 1, Mill Creek No. 3, Mill Creek No. 4, West Hobolochitto Creek, White Sand Creek, and Wolf River were evaluated utilizing Regional Regression Equation obtained from "Flood Characteristics of Mississippi Streams: US Geological Survey Water-Resources Investigations Report 91-4037" (Reference 12).

Peak discharge-drainage area relationships for the 10-, 2-, 1-, and 0.2-percent annual chance floods of each flooding source studied in detail in the community are shown in Table 3.

TABLE 3 - SUMMARY OF DISCHARGES

<u>FLOODING SOURCE AND LOCATION</u>	<u>DRAINAGE AREA (sq. miles)</u>	<u>PEAK DISCHARGES (cfs)</u>			
		<u>10-PERCENT</u>	<u>2-PERCENT</u>	<u>1-PERCENT</u>	<u>0.2-PERCENT</u>
<b>ALLIGATOR BRANCH</b> at confluence with Pearl River	2.9	763	1,213	1,522	2,500
<b>BAY BRANCH</b> at confluence with East Hobolochitto Creek	1.9	1,770	2,540	2,930	4,020
at State Highway 43	0.7	740	1,110	1,290	1,790
<b>EAST HOBOLOCHITTO CREEK</b> at confluence with Hobolochitto Creek	115.7	7,200	11,900	15,500	19,000
at West Union Road	93.5	*	*	14,106	*
at Anchor Lake road	76.9	*	*	12,802	*
at Interstate-59	43.9	*	*	9,446	*
at Savannah-Millard Road	35.8	*	*	8,723	*
<b>HOBOLOCHITTO CREEK</b> at about 1.1 miles downstream of Beech Road	350.0	24,200	40,700	48,800	69,000
<b>HOLLEY CREEK</b> at confluence with East Hobolochitto Creek	1.3	1,220	1,790	2,080	2,870
at about 4,000 feet upstream of mouth	0.9	920	1,350	1,570	2,160
<b>JUMPOFF CREEK</b> at confluence with East Hobolochitto Creek	18.9	*	*	5,199	*
at Duponts-Harts Chapel Road	11.0	*	*	3,595	*
at Cowart-Holliday Road	6.1	*	*	2,767	*
At Garrett and McGill Ave	2.5	*	*	1,599	*

\*Data Not Available

TABLE 3 - SUMMARY OF DISCHARGES (continued)

<u>FLOODING SOURCE AND LOCATION</u>	<u>DRAINAGE AREA (sq. miles)</u>	<u>PEAK DISCHARGES (cfs)</u>			<u>0.2-PERCENT</u>
		<u>10-PERCENT</u>	<u>2-PERCENT</u>	<u>1-PERCENT</u>	
<b>JUMPOFF CREEK (cont'd)</b>					
at about 0.7 miles upstream of Garrett & McGill Drive	1.0	*	*	817	*
<b>JUNIPER CREEK</b>					
at confluence with East Hobolochitto Creek	15.9	*	*	4,681	*
at Duponts-Harts Chapel Road (downstream)	13.1	*	*	4,313	*
at approximately 4.3 miles upstream from Duponts-Harts Chapel Road	6.4	*	*	3,152	*
at Duponts-Harts Chapel Road (U/S)	0.7	*	*	693	*
<b>LONG BRANCH</b>					
at confluence with West Hobolochitto Creek	16.2	*	*	4,202	*
at Henleyfield-McNeil Road	6.6	*	*	2,483	*
approximately 1 mile upstream of Nellie Burks Road	2.2	*	*	1,371	*
<b>MILL CREEK</b>					
at its confluence with the Pearl River	0.57	721	1,162	1,365	1,871
Approximately 1,500 feet downstream of lower Jackson Landing Road	2.83	2,370	2,970	3,290	4,090
Approximately 0.53 mile upstream of Lower Jackson Landing Road	1.59	600	720	790	950
at Beech Road	0.77	290	360	390	480
<b>MILL CREEK NO. 1</b>					
at State Highway 43S	8.8	*	*	3,009	*
at Old Kiln Road	6.4	*	*	2,412	*

\*Data Not Available

TABLE 3 - SUMMARY OF DISCHARGES (continued)

<u>FLOODING SOURCE AND LOCATION</u>	<u>DRAINAGE AREA (sq. miles)</u>	<u>PEAK DISCHARGES (cfs)</u>			
		<u>10-PERCENT</u>	<u>2-PERCENT</u>	<u>1-PERCENT</u>	<u>0.2-PERCENT</u>
MILL CREEK NO. 1 (cont'd) at about 1.9 miles upstream of West Union Road	0.3	*	*	311	*
MILL CREEK NO. 3 at confluence with West Hobolochitto Creek	16.1	*	*	4,230	*
at State Highway 11 (downstream)	14.3	*	*	3,961	*
at Lakeshore Drive	10.3	*	*	3,287	*
at West Union Road	6.1	*	*	2,316	*
at Anchor Lake road	5.0	*	*	2,036	*
at State Highway 11 (U/S)	3.1	*	*	1,488	*
at about 2.0 miles upstream of State Highway 11 (U/S)	0.6	*	*	540	*
MILL CREEK NO. 4 at confluence with West Hobolochitto Creek	1.6	*	*	1,002	*
at Rock Ranch Road	0.8	*	*	900	*
at about 1.7 miles upstream of Rock Ranch Road	0.1	*	*	173	*
SECOND ALLIGATOR BRANCH about 2,200 feet downstream of Asa McQueen Road	4.7	1,010	1,600	2,030	3,300
just upstream of confluence of Second Alligator Branch Tributary	2.3	644	1,004	1,322	2,350
just downstream of Shorty Burgess Road	1.3	412	618	834	1,250

\*Data Not Available

TABLE 3 - SUMMARY OF DISCHARGES (continued)

<u>FLOODING SOURCE AND LOCATION</u>	<u>DRAINAGE AREA (sq. miles)</u>	<u>PEAK DISCHARGES (cfs)</u>			<u>0.2-PERCENT</u>
		<u>10-PERCENT</u>	<u>2-PERCENT</u>	<u>1-PERCENT</u>	
SECOND ALLIGATOR BRANCH TRIBUTARY at confluence with Second Alligator Branch	1.0	350	523	683	1,200
THIGPEN CREEK at confluence with East Hobolochitto Creek	1.8	1,640	2,370	2,730	3,760
above Sycamore Road	1.5	1,410	2,050	2,360	3,250
WEST HOBOLOCHITTO CREEK at State Highway 43	213.3	13,500	23,700	28,500	42,000
at Henelyfield-McNeil Road	174.4	*	*	20,734	*
at John Amacker Road	133.4	*	*	17,530	*
at State Highway 26 W	94.8	*	*	14,872	*
WHITE SAND CREEK at confluence with West Hobolochitto Creek	21.6	*	*	5,449	*
at Glover Road	15.2	*	*	4,787	*
at Beach Road	5.7	*	*	2,643	*
at about 1.4 miles upstream of Hoadley Road	0.4	*	*	461	*
WOLF RIVER at McNeil-McHenry Road	180.9	*	*	21,493	*
at Progress Road	102.0	*	*	15,022	*
at State Highway 26	73.2	*	*	12,313	*
at Interstate-59	58.3	*	*	10,624	*
at State Highway 11	32.6	*	*	7,484	*

\*Data Not Available



## 3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Users should be aware that flood elevations shown on the Flood Insurance Rate Map (FIRM) represent rounded whole-foot elevations and may not exactly reflect the elevations shown on the Flood Profiles or in the Floodway Data Table in the FIS report. Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS report in conjunction with the data shown on the FIRM.

### **Initial Countywide and Previous Studies**

Cross-section data for streams in the study area were obtained by field survey. All roads and bridges were field surveyed to obtain elevation data and structural geometry.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross-section locations are also shown on the FIRM (Exhibit 1).

For Hobolochitto Creek, East Hobolochitto Creek, Alligator Branch, Second Alligator Branch, and Second Alligator Branch Tributary, the starting water-surface elevations were obtained by slope-conveyance methods. Water-surface elevations were developed using the HEC-2 step backwater computer program (Reference 12).

Flood profiles were drawn showing the computed water-surface elevations for floods of the selected recurrence intervals. In cases where the 2- and 1-percent annual chance flood elevations are close together, due to limitations of the profile scale, only the 1-percent annual chance flood profile has been shown.

The hydraulic analyses for this study are based on the effects of unobstructed flow. The flood elevations shown on the profiles (Exhibit 1) are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

For the previous revisions, analyses of the hydraulic characteristics of flooding from Mill Creek were carried out to provide estimates of the elevations of floods of the selected recurrence intervals.

Cross section data for the channels, bridges, and overbank area were taken from field surveys, USGS quadrangles, and drainage study maps with 1-foot contour intervals (Reference 13 and 14). Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross-

section locations are also shown on the Flood Insurance Rate Map (Exhibit 2). Along certain portions of Mill Creek, a profile base line is shown on the maps to represent channel distances as indicated on the Flood Profiles and Floodway Data Tables.

Water-surface elevations of floods of the selected recurrence intervals were computed using the COE HEC-2 step-backwater computer program (Reference 15). Stage-storage relationships were developed by running an arbitrary range of discharges through the defined project area. These were run through the HEC-1 model to route the hydrographs through the study area using the Modified Puls method (Reference 11). Approximate high-water marks were used to verify the HEC-2 model. Flood profiles were drawn showing computed water-surface elevations for floods for the selected recurrence intervals. Starting water-surface elevations used in the frequency profiles were taken from existing Pearl River profiles.

Channel roughness factors (Manning's "n") used in the hydraulic computations were estimated based on field observation and engineering judgment and are being shown on Table 4 Manning's "n" Values. A channel "n" value of 0.015 was used for the concrete box culvert that parallels Davis Street.

For this revision hydraulic model development was accomplished using HEC-geoRAS (Version 4.1, beta) for ArcGIS 9.0. The stream centerlines, cross section cutlines, flow paths, and bridge/culvert locations were developed in HEC-geoRAS. Elevation data was extracted from the Digital Elevation Models (DEMs) developed for this study. Using these data layers, HEC-RAS geometry was generated to use in the HEC-RAS software program.

### **Revised Analysis**

Water surface elevations for flood of the selected recurrence interval were determined by the U.S. Army Corps of Engineers HEC-RAS computer program (Version 3.1.3)(Reference 16). The starting water surface elevations were obtained from the effective FIS or were calculated using slope area method for the streams that were not studied before. For Long Branch slope of  $S=0.00$ , Mill Creek No 3 and No 4,  $S=0.005$ , White Sand creek,  $S=0.006$  and Wolf River,  $S=0.0002$  were used.

The information shown for Hobolochito Creek, East Hobolochito Creek, West Hobolochito Creek, Jumpoff Creek, Juniper Creek, Long Branch Creek, Mill Creek, White Sand Creek and Wolf River, supersedes those portions of the original and previously revised Flood Insurance Study for Pearl River County, Mississippi, and Incorporated Areas (Reference 17) and are shown on Table 4 Manning's "n" Values.

TABLE 4 - MANNING'S "n" VALUES

<u>Stream</u>	<u>Channel "n"</u>	<u>Overbank "n"</u>
ALLIGATOR BRANCH	0.04 ~ 0.07	0.1 ~ 0.3
HOBLOCHITTO CREEK	0.04 ~ 0.07	0.1 ~ 0.3
HOLLEY CREEK	0.04 ~ 0.07	0.1 ~ 0.3
EAST HOBLOCHITTO CREEK	0.045	0.055 ~ 0.150
JUMPOFF CREEK	0.045	0.055 ~ 0.150
JUNIPER CREEK	0.045	0.070 ~ 0.150
LONG BRANCH	0.040 ~ 0.045	0.100 ~ 0.150
MILL CREEK	0.04 ~ 0.07	0.1 ~ 0.3
MILL CREEK NO. 1	0.035 ~ 0.065	0.150 ~ 0.180
MILL CREEK NO. 3	0.018 ~ 0.045	0.055 ~ 0.155
MILL CREEK NO. 4	0.018 ~ 0.045	0.055 ~ 0.155
SECOND ALLIGATOR BRANCH	0.04 ~ 0.07	0.1 ~ 0.3
SECOND ALLIGATOR BRANCH TRIBUTARY	0.04 ~ 0.07	0.1 ~ 0.3
THIGPEN CREEK	0.04 ~ 0.07	0.1 ~ 0.3
WEST HOBLOCHITTO CREEK	0.035	0.035 ~ 0.150
WHITE SAND CREEK	0.045	0.055 ~ 0.150
WOLF RIVER	0.045	0.055 ~ 0.150

### 3.3 Vertical Datum

All FIS reports and FIRMs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. Until recently, the standard vertical datum used for newly created or revised FIS reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD). With the completion of the North American Vertical Datum of 1988 (NAVD), many FIS reports and FIRMs are now prepared using NAVD as the referenced vertical datum.

Flood elevations shown in this FIS report and on the FIRM are referenced to the NAVD. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the NGVD and NAVD, visit the National Geodetic Survey website at [www.ngs.noaa.gov](http://www.ngs.noaa.gov), or contact the National Geodetic Survey at the following address:

Vertical Network Branch, N/CG13  
 National Geodetic Survey, NOAA  
 Silver Spring Metro Center 3  
 1315 East-West Highway  
 Silver Spring, Maryland 20910  
 (301) 713-3191

Temporary vertical monuments are often established during the preparation of a flood hazard analysis for the purpose of establishing local vertical control. Although these monuments are not shown on the FIRM, they may be found in the Technical Support Data Notebook associated with the FIS report and FIRM for this community. Interested individuals may contact FEMA to access these data.

The Flood Profiles, Floodway Data and Base (1-percent-annual-chance) Flood Elevations (BFEs) in the pre-countywide FIS reports, are in NGVD. These were converted to NAVD by applying the conversion factor of -0.184 ft. to each detailed study stream in the effective FIS reports (**NGVD -0.184 ft. = NAVD**).

#### 4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. Therefore, each FIS provides 1-percent-annual-chance flood elevations and delineations of the 1- and 0.2-percent-annual-chance floodplain boundaries and 1-percent-annual-chance floodway to assist communities in developing floodplain management measures. This information is presented on the FIRM and in many components of the FIS report, including Flood Profiles, and Floodway Data Table. Users should reference the data presented in the FIS report as well as additional information that may be available at the local map repository before making flood elevation and/or floodplain boundary determinations.

##### 4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent-annual-chance flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent-annual-chance flood is employed to indicate additional areas of flood risk in the community. For the streams studied in detail, the 1- and 0.2-percent-annual-chance floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:24000 with a contour interval of 10 feet (Reference 18). In the area of Picayune, topographic maps at a scale of 1:2400 with a contour interval of 1 foot were used (Reference 13).

The 1-percent and 0.2-percent annual chance floodplain boundaries are shown on the Flood Insurance Rate Map. On this map, the 1-percent annual chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A, AE, AH, AO, A99, V, and VE) and the 0.2-percent annual chance floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 1-percent and 0.2-percent annual chance floodplain boundaries are close together, only the 1-percent annual chance floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

For the previous revision, Mill Creek's 1- and 0.2-percent-annual-chance floodplain boundaries were delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps provided by the City of Picayune, at a scale of 1"=200', with a contour interval of 1 foot (Reference 13). These delineations were then projected onto USGS quadrangles with a scale of 1:24,000 and a 10-foot contour interval (Reference 14).

For this revision floodplains were delineated utilizing the output from HEC-RAS and contours. ArcGIS 9.0 and HEC-geoRAS (Version 4.1, beta) were used to read the HEC-RAS export file to map over the existing information. A triangulated irregular network (TIN) covering the floodplain area for each stream was generated using contours to use as the elevation source.

The 1-percent annual chance floodplain boundaries were compared with existing contours to verify boundaries were consistent with contour elevations. Tie-ins with the effective upstream and downstream boundaries were also resolved as a part of this study. Base flood elevations were calculated by contouring the existing water surface TIN from the HEC-geoRAS output at 1-foot intervals. BFEs were then removed, as necessary, to conform to FEMA's guidelines and specifications.

The process of refinement of effective Zone A boundaries utilized paper versions of effective Pearl River County DFIRM panels - 19 in all as well as an index panel. These panels were scanned as .tif files so that they could be manipulated in GIS. Once scanned in the panels, in digital format, were georectified/georeferenced in GIS to provide spatial accuracy.

The panels were georeferenced in ArcMap, using the Georeferencing toolbar, at a scale no larger than 1:6,000. The panels are referenced against county-wide orthophotos and an ortho-based vector transportation file as a secondary source to ensure accuracy in maintaining the road/flood hazard relationship. Zone A boundaries were then digitized at a scale of no greater than 1:3000. All spatial files were attributed in accordance with Appendix L from the FEMA Guideline and Specifications.

For the streams studied by approximate methods, only the 1-percent annual chance floodplain boundary is shown on the FIRM (Exhibit 1).

#### 4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 1-percent-annual-chance floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 1-

percent-annual-chance flood can be carried without substantial increases in flood heights. Minimum federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as a minimum standard that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodway presented in this FIS report and on the FIRM was computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations have been tabulated for selected cross sections (Table 5). In cases where the floodway and 1-percent-annual-chance floodplain boundaries are either close together or collinear, only the floodway boundary has been shown.

Along streams where floodways have not been computed, the community must ensure that the cumulative effect of development in the floodplain will not cause more than 1.0-foot increase in the base flood elevations at any point within the community.

The area between the floodway and 1-percent annual chance floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 1-percent annual chance flood by more than 1.0 foot. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 1.

For the previous revisions, the revised floodway data for Mill Creek presented in Table 5, "Floodway Data" supersedes the floodway data for Mill Creek presented in Table 2 of the original flood insurance study.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET/SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
BAY BRANCH								
A	500 <sup>1</sup>	251	1,752	1.7	51.9	48.5 <sup>4</sup>	49.5	1.0
B	1,900 <sup>1</sup>	196	1,105	2.7	52.4	52.4	53.4	1.0
C	3,000 <sup>1</sup>	125	842	1.5	54.2	54.2	55.2	1.0
D	6,650 <sup>1</sup>	138	1,056	2.7	56.9	56.9	57.2	0.3
EAST HOBOLOCHITTO CREEK								
A	7,000 <sup>2</sup>	931	11,373	1.4	51.0	51.0	52.0	1.0
B	9,140 <sup>2</sup>	1471	18,538	0.8	51.4	51.4	52.4	1.0
C	12,159 <sup>2</sup>	1393	13,554	1.1	51.7	51.7	52.7	1.0
D	17,653 <sup>2</sup>	475	6,450	2.5	54.7	54.7	55.6	0.9
E	23,090 <sup>2</sup>	1992	19,673	0.8	58.4	58.4	59.3	0.9
F	33,590 <sup>2</sup>	1250	10,404	1.5	62.6	62.6	63.6	1.0
G	42,090 <sup>2</sup>	793	10,447	1.5	69.2	69.2	69.7	0.5
H	52,890 <sup>2</sup>	793	8,353	1.9	76.5	76.5	77.5	1.0
I	63,690 <sup>2</sup>	842	9,645	1.6	85.3	85.3	86.3	1.0
HOLLEY CREEK								
A	1,100 <sup>1</sup>	161	1,056	2.0	55.0	50.3 <sup>3</sup>	51.3	1.0
B	2,850 <sup>1</sup>	182	772	2.7	55.9	54.2 <sup>3</sup>	54.6	0.4
C	4,020 <sup>1</sup>	105	407	3.9	57.2	57.2 <sup>3</sup>	57.4	0.2

<sup>1</sup> FEET ABOVE CONFLUENCE WITH EAST HOBOLOCHITTO CREEK

<sup>2</sup> FEET ABOVE CONFLUENCE OF HOBOLOCHITTO CREEK

<sup>3</sup> ELEVATION WITHOUT CONSIDERING OVERFLOW EFFECT FROM EAST HOBOLOCHITTO CREEK

<sup>4</sup> ELEVATIONS WITHOUT CONSIDERING BACKWATER EFFECT FROM EAST HOBOLOCHITTO CREEK

**TABLE 5**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PEARL RIVER, MS  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**BAY BRANCH-HOLLEY CREEK-EAST HOBOLOCHITTO CREEK**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET/SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Mill Creek								
A	4,440	181	1,217	4.4	30.6	30.6	31.5	0.9
B	5,670	287	2,262	2.0	34.3	34.3	34.9	0.6
C	6,900	250	1,349	3.4	35.8	35.8	36.6	0.8
D	8,900	226	1,352	3.3	42.1	42.1	42.9	0.8
E	11,900	199	1,084	3.0	48.5	48.5	49.3	0.8
F	13,950	48	308	2.6	51.1	51.1	52.0	0.9
G	15,420	27	142	5.5	52.5	52.5	53.4	0.9
H	16,750	42	243	1.6	55.5	55.5	56.3	0.8
I	19,000	22	117	1.7	57.3	57.3	58.0	0.7
THIGPEN CREEK								
A	2,320	177	1,167	2.3	51.8	50.4 <sup>2</sup>	51.3	0.9
B	3,420	170	957	2.9	51.9	51.9	52.8	0.9
C	4,400	151	771	3.5	54.8	54.8	55.7	0.9
D	4,580	173	992	2.8	55.4	55.4	56.4	1.0
E	6,100	206	1399	1.7	62.4	62.4	63.3	0.9

<sup>1</sup> FEET ABOVE CONFLUENCE WITH PEARL RIVER

<sup>2</sup> ELEVATIONS WITHOUT CONSIDERING BACKWATER EFFECT FROM EAST HOBOLOCHITTO CREEK

**TABLE 5**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PEARL RIVER, MS  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**MILL CREEK-THIGPEN CREEK**



FLOODING SOURCE		FLOODWAY			BASE FLOODWATER-SURFACE ELEVATION			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE
WEST HOBOLOCHITTO CREEK								
A	39,725 <sup>1</sup>	800	10,950	2.6	50.8	50.8	51.8	1.0
B	47,535 <sup>1</sup>	1980	25,981	1.1	55.2	55.2	56.1	0.9
C	52,895 <sup>1</sup>	2324	30,604	0.9	56.9	56.9	57.9	1.0
D	60,895 <sup>1</sup>	1884	22,473	1.3	60.1	60.1	61.1	1.0
E	65,515 <sup>1</sup>	2448	27,489	1.0	61.9	61.9	62.9	1.0
F	74,345 <sup>1</sup>	2532	25,876	1.1	66.0	66.0	67.0	1.0
G	81,155 <sup>1</sup>	2747	24,214	1.2	70.3	70.3	71.3	1.0
H	89,805 <sup>1</sup>	2765	21,651	1.3	75.4	75.4	76.4	1.0
I	93,245 <sup>1</sup>	1817	18,236	1.6	77.8	77.8	78.8	1.0
J	98,355 <sup>1</sup>	2091	16,871	1.7	81.0	81.0	82.0	1.0

<sup>1</sup> FEET ABOVE CONFLUENCE OF HOBOLOCHITTO CREEK

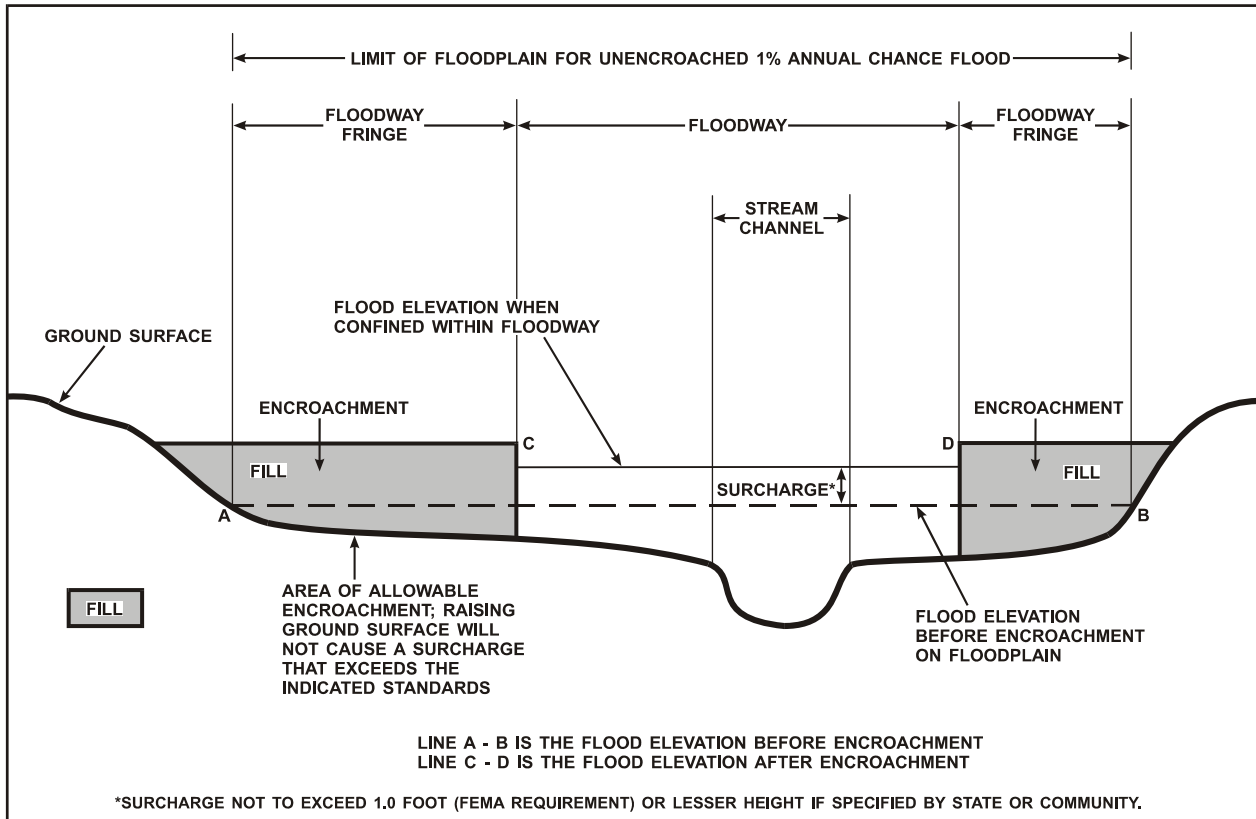
**TABLES**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**PEARL RIVER COUNTY, MS  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**WEST HOBOLOCHITTO**



**Figure 1 - Floodway Schematic**

## 5.0 INSURANCE APPLICATIONS

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. The zones are as follows:

### Zone A

Zone A is the flood insurance rate zone that corresponds to the 1-percent annual chance floodplains that are determined in the Flood Insurance Study by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations or depths are shown within this zone.

### Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 1-percent annual chance floodplains that are determined in the Flood Insurance Study by detailed methods. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

## Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 1-percent annual chance floodplain, areas of 1-percent annual chance flooding where average depths are less than 1 foot, areas of 1-percent annual chance flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 1-percent annual chance flood by levees. No base flood elevations or depths are shown within this zone.

## 6.0 FLOOD INSURANCE RATE MAP

The FIRM is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance risk zones as described in Section 5.0 and, in the 1-percent-annual-chance floodplains that were studied by detailed methods, shows selected whole-foot BFEs or average depths. Insurance agents use the zones and BFEs in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols, the 1- and 0.2-percent-annual-chance floodplains, floodways, and the locations of selected cross sections used in the hydraulic analyses and floodway computations.

The current Flood Insurance Rate Map represents flooding information for the entire geographic area of Pearl River County. Previously, separate Flood Hazard Boundary Maps and/or Flood Insurance Rate Maps were prepared for each flood-prone incorporated community and the unincorporated areas of the county. Historical data relating to the maps prepared for each community are presented in Table 7, Community Map History.

## 7.0 OTHER STUDIES

Flood Insurance Studies published for Marion and Hancock Counties, Mississippi, and St. Tammy and Washington Parishes, Louisiana (References 19, 20, 21, 22) are in agreement with this study.

Flood Insurance Studies published for Lamar and Forrest Counties, Mississippi (References 23 and 24) are in agreement with this study.

This FIS report either supersedes or is compatible with all previous studies on streams studied in this report and should be considered authoritative for purposes of the NFIP.

## 8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting the Natural and Technological Hazards Division, FEMA, 1371 Peachtree Street, NE., Suite 736, Atlanta, Georgia 30309.

Future revisions may be made that do not result in the republishing of the Flood Insurance Study report. To assure that any user is aware of all revisions, it is advisable to contact the map repository of flood hazard data located in the community.

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FIRM EFFECTIVE DATE	FIRM REVISIONS (DATES)
***Lumberton, City of (Dual County Community) (Lamar County)	March 24, 1989	None	March 24, 1989	April 2, 1990 July 2, 1991
Picayune, City of	June 28, 1974	October 31, 1975	March 4, 1980	March 4, 1980 August 27, 1982 May 17, 1990 March 3, 1992
Pearl River (Unincorporated Areas)	November 25, 1977	None	May 17, 1990	March 3, 1992
Poplarville, City of	None	None	N/A	N/A

\*\*\* Non Participating

**TABLE 6**

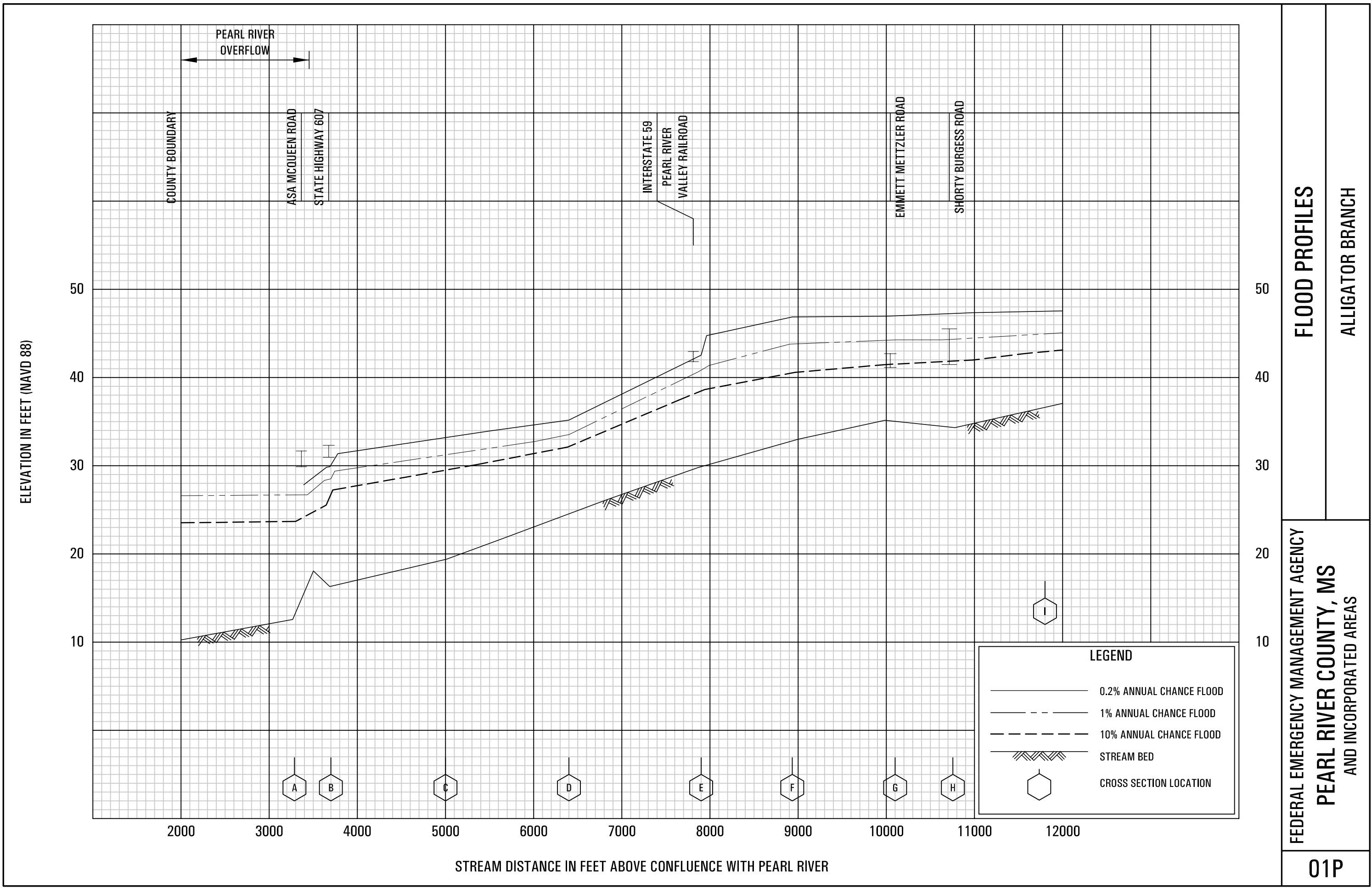
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS  
AND INCORPORATED AREAS**

**COMMUNITY MAP HISTORY**

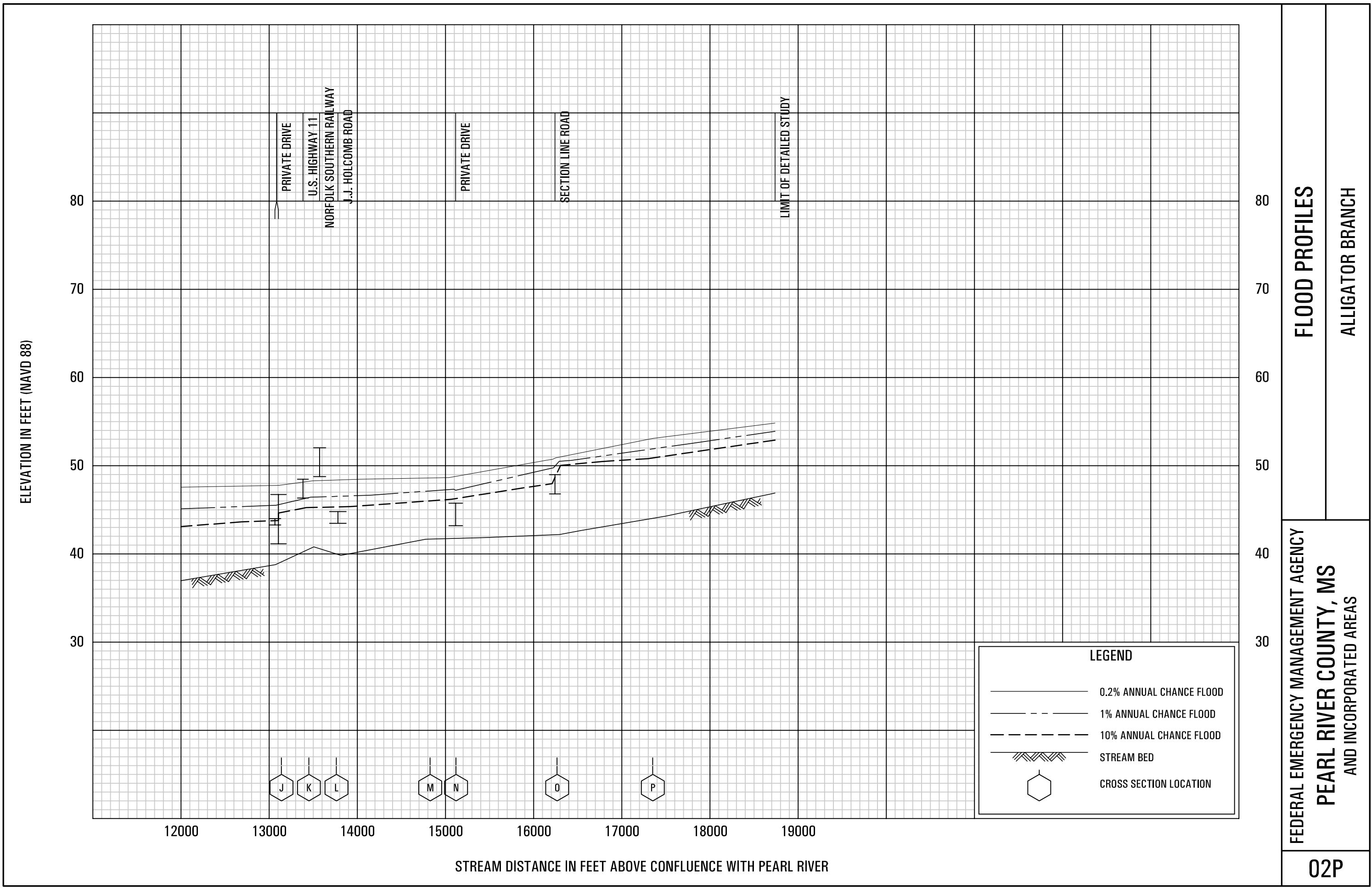
## 9.0 BIBLIOGRAPHY AND REFERENCES

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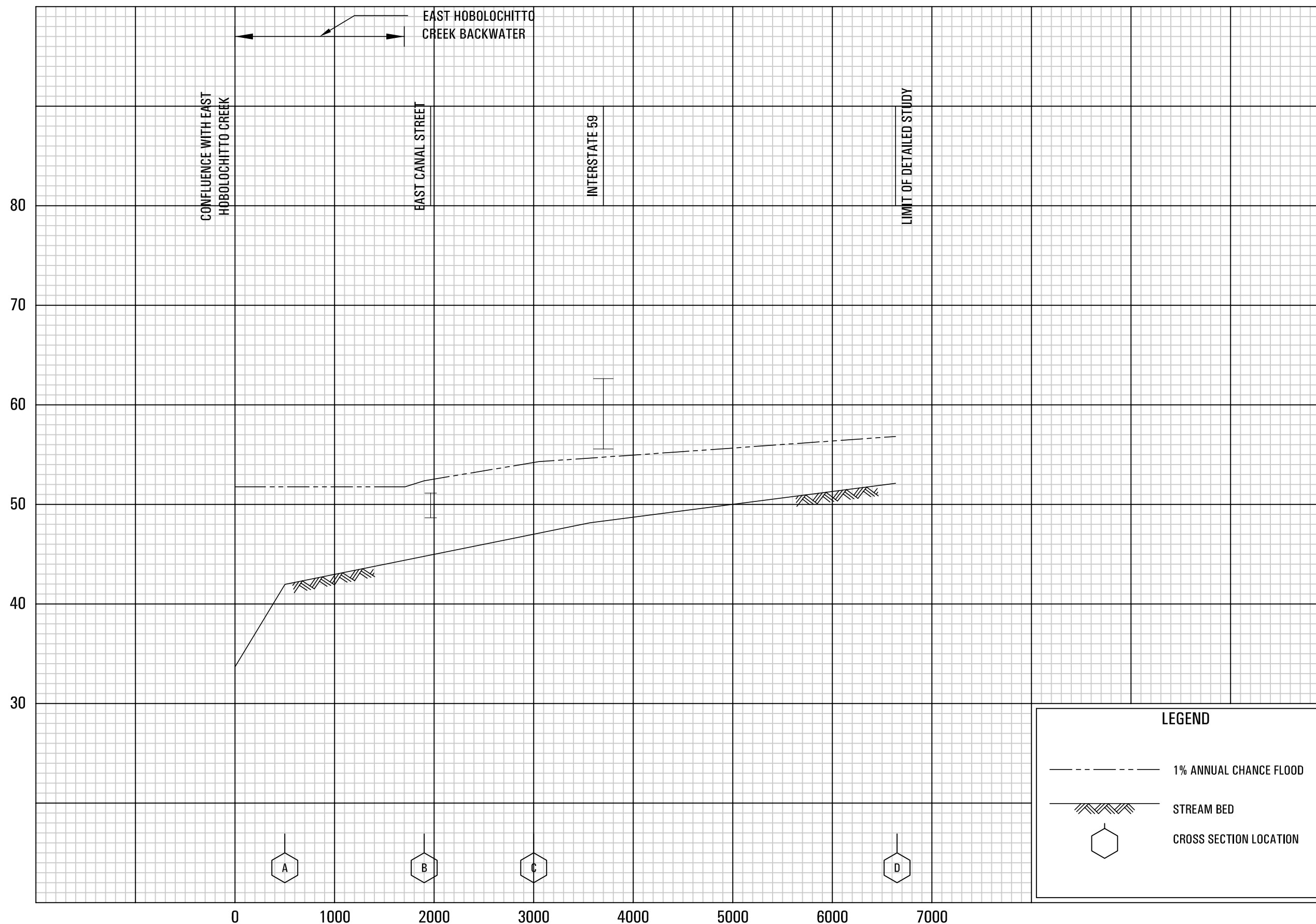
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24. Federal Emergency Management Agency, Flood Insurance Study, Forrest County, Unincorporated Areas, Mississippi, April 1990.







ELEVATION IN FEET (NAVD 88)



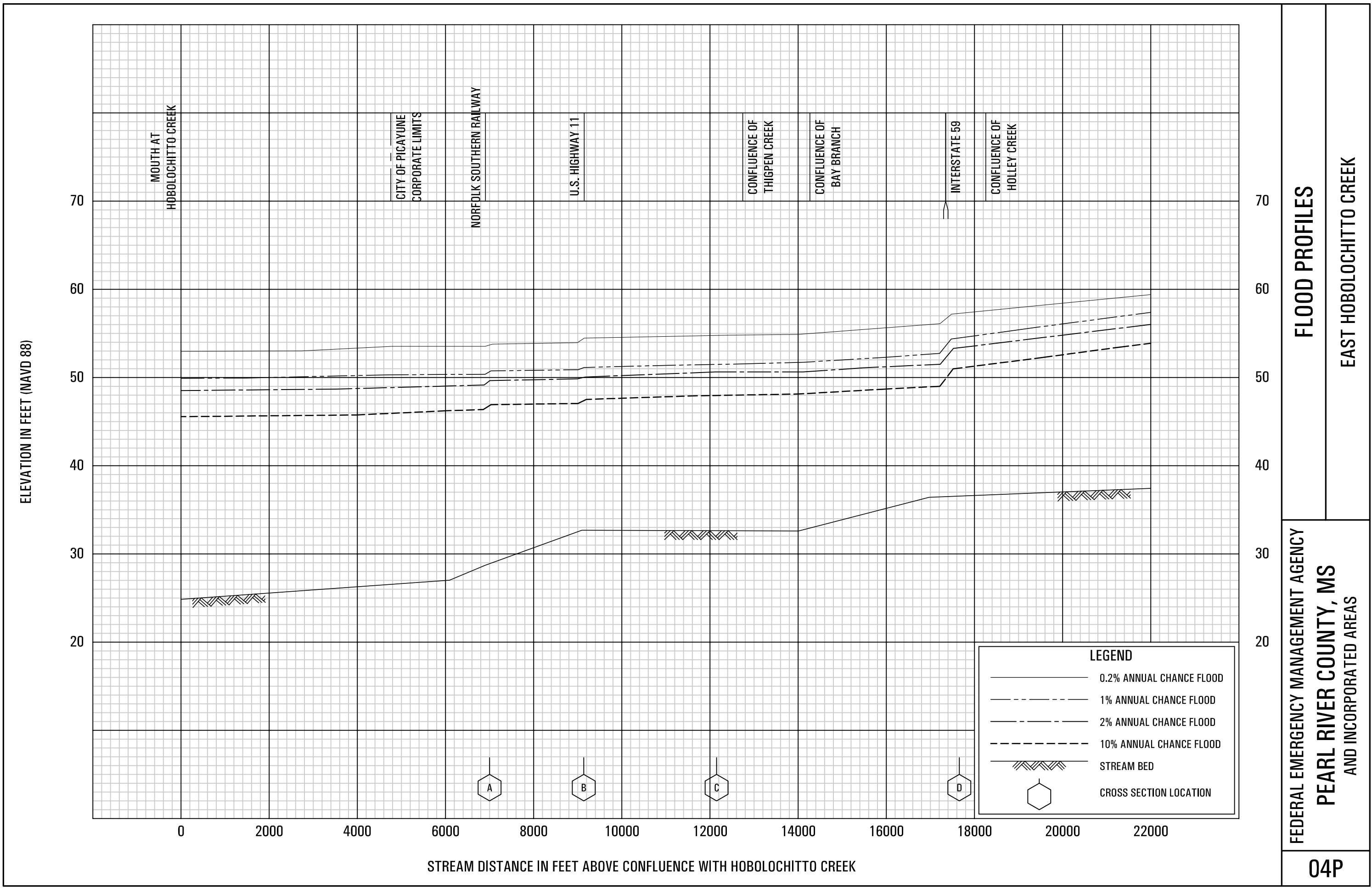
STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH EAST HOBOLOCHITTO CREEK

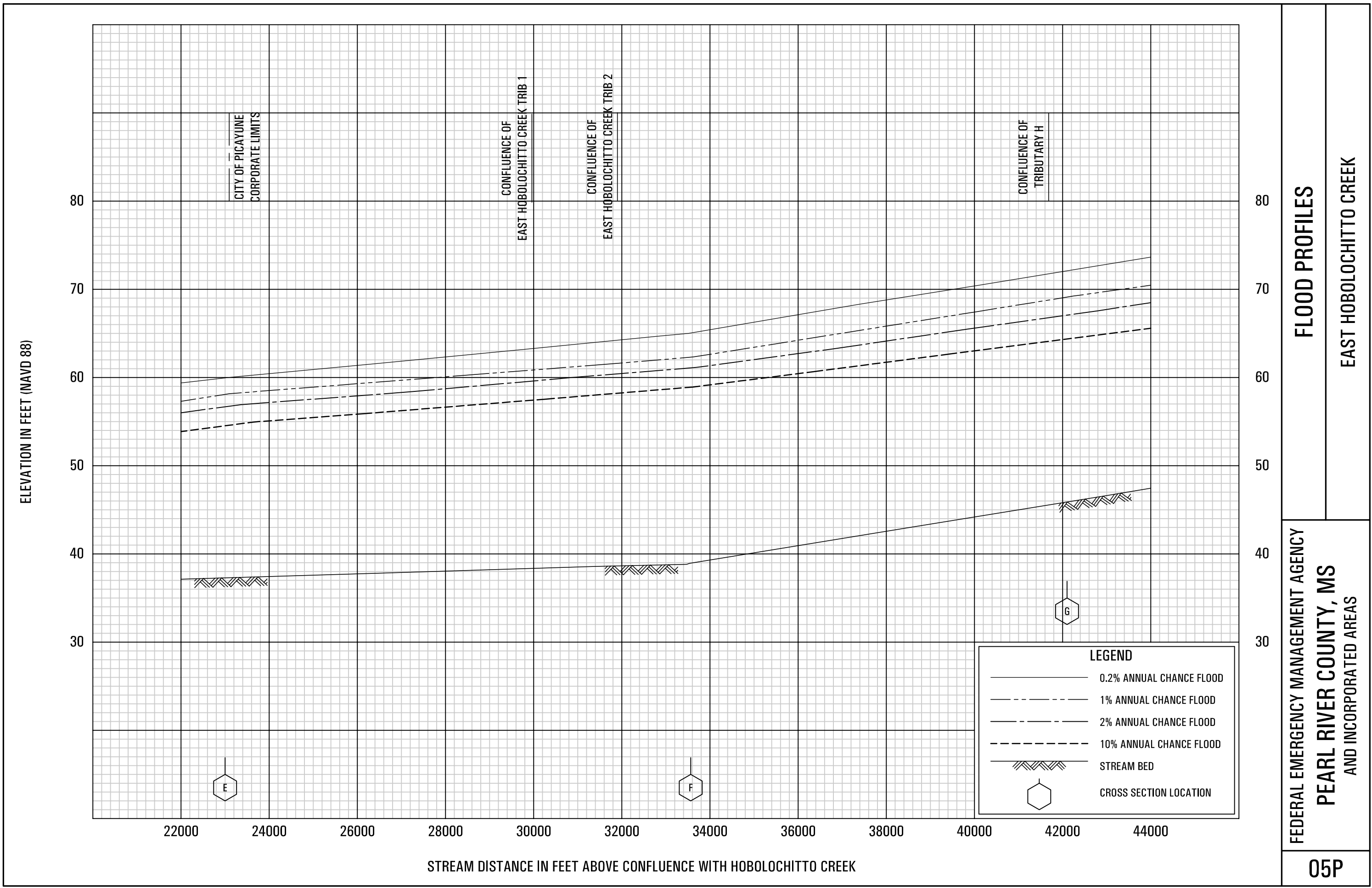
**FLOOD PROFILES**

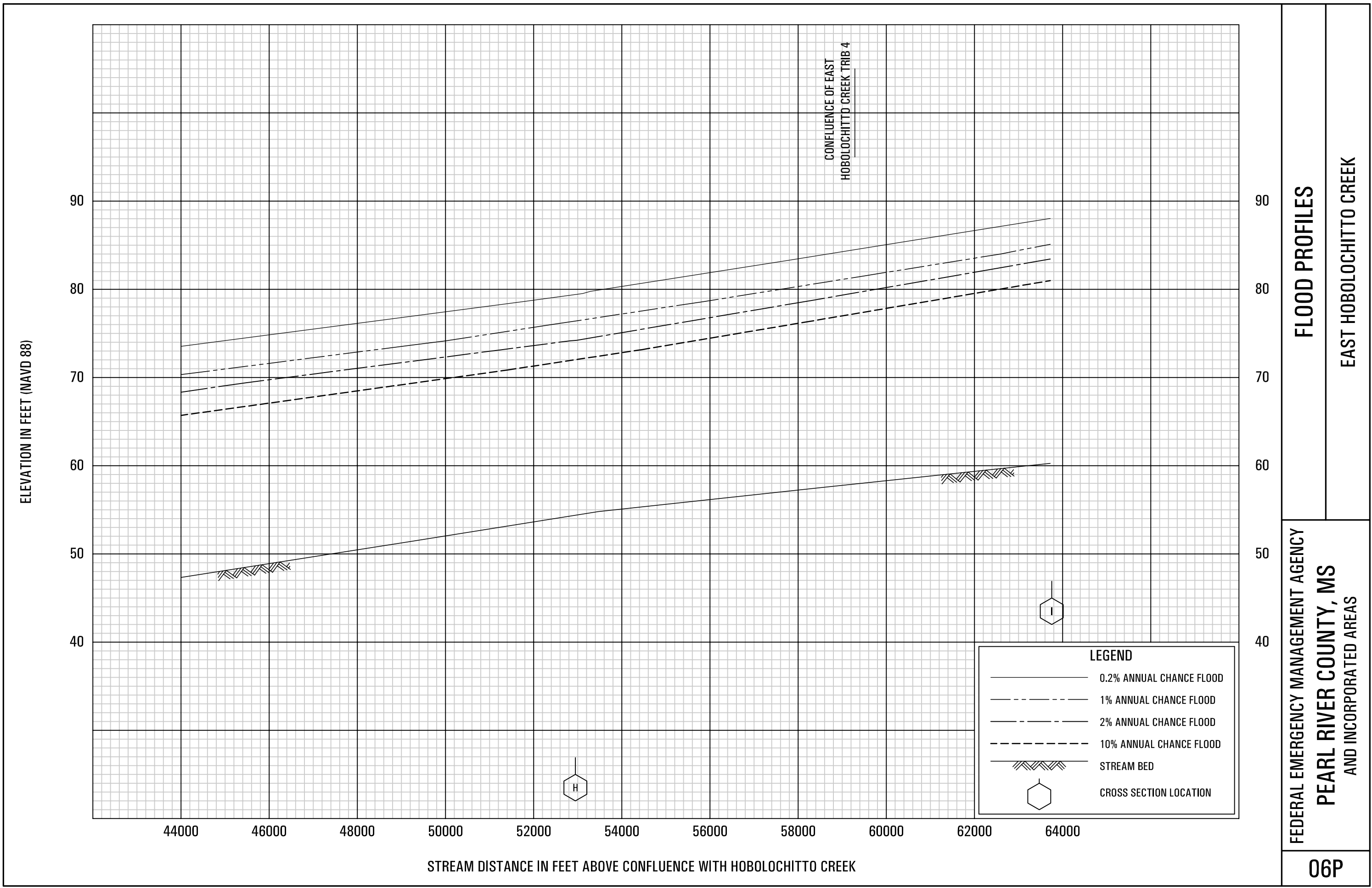
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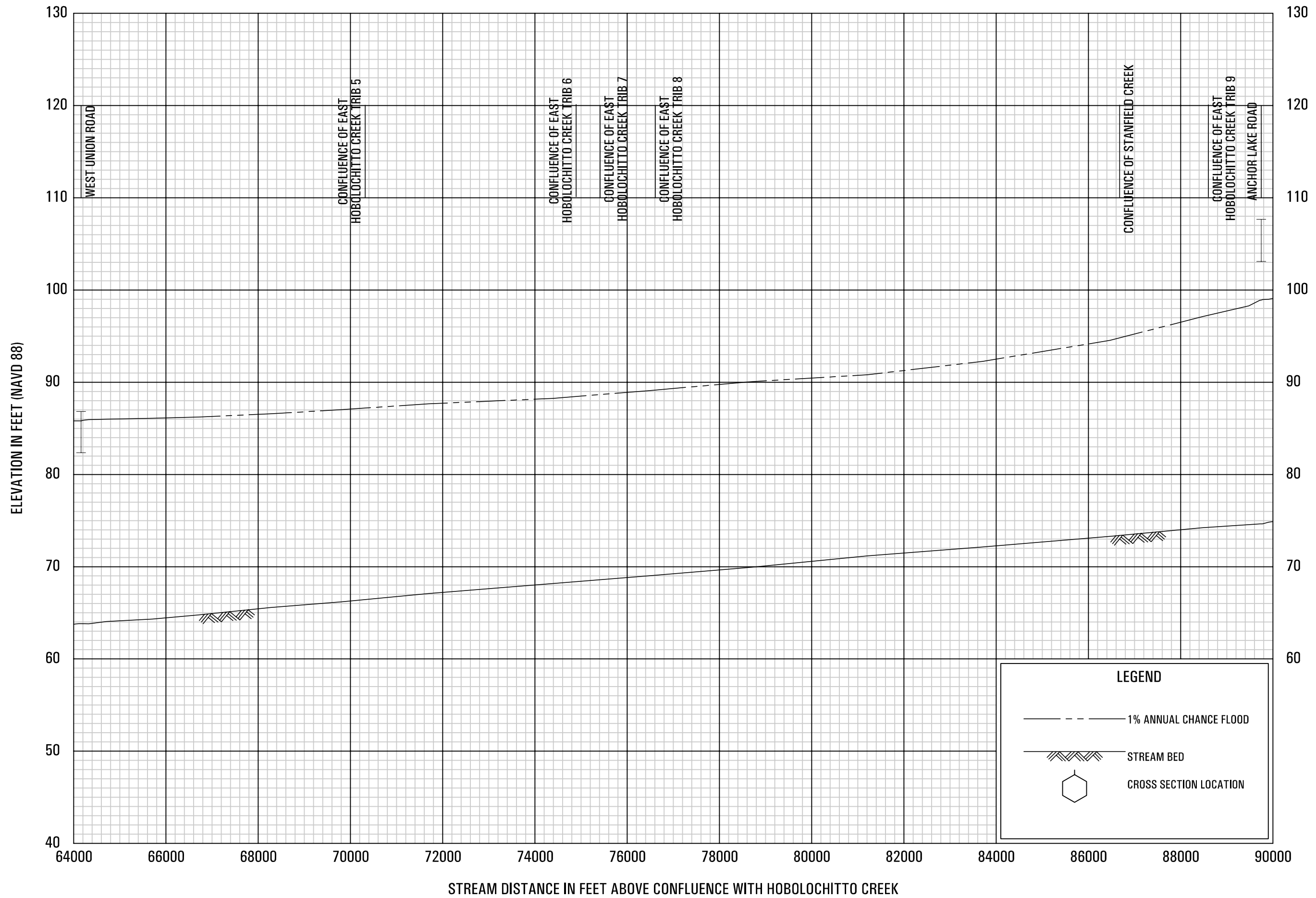
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
AND INCORPORATED AREAS

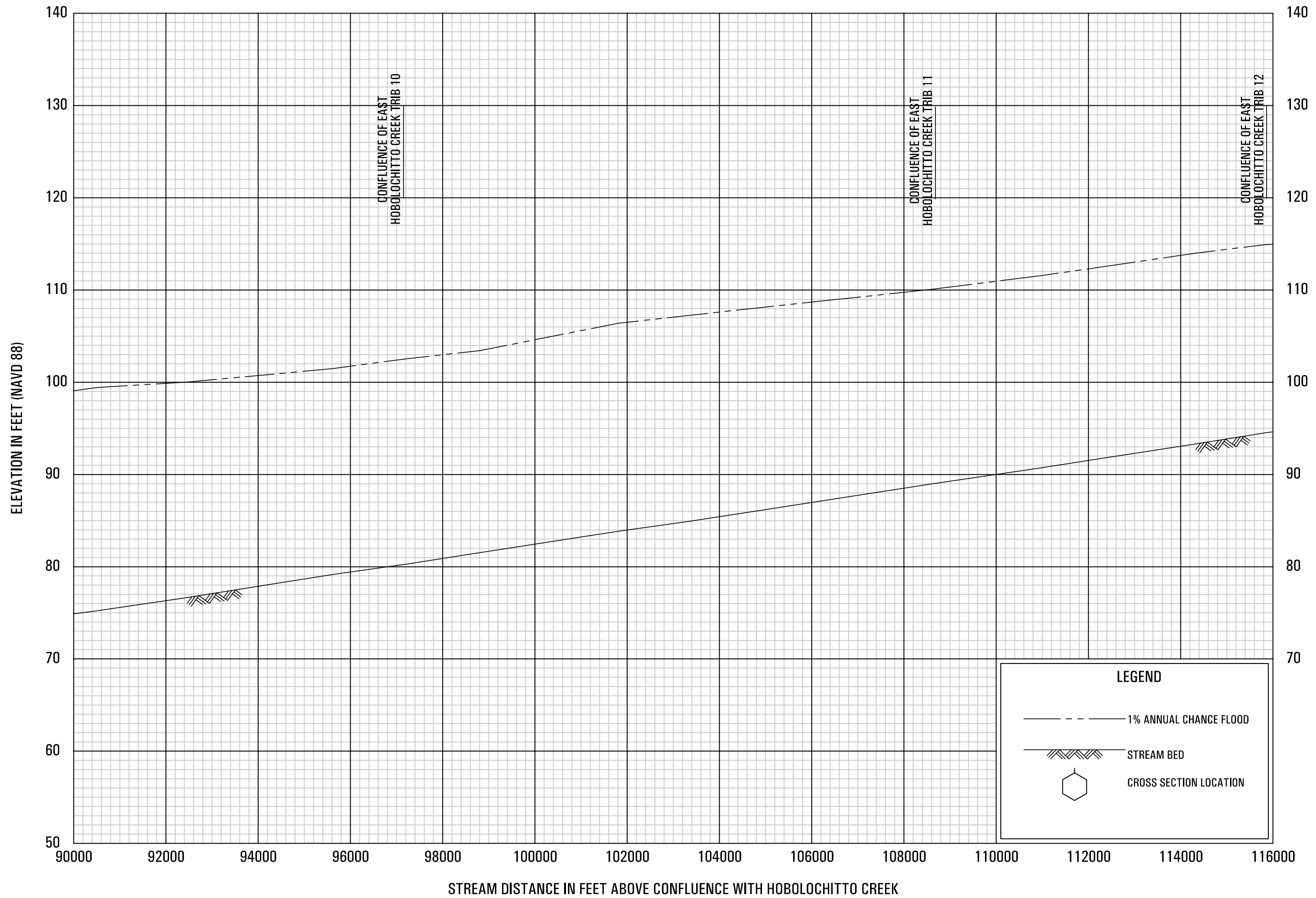
**03P**







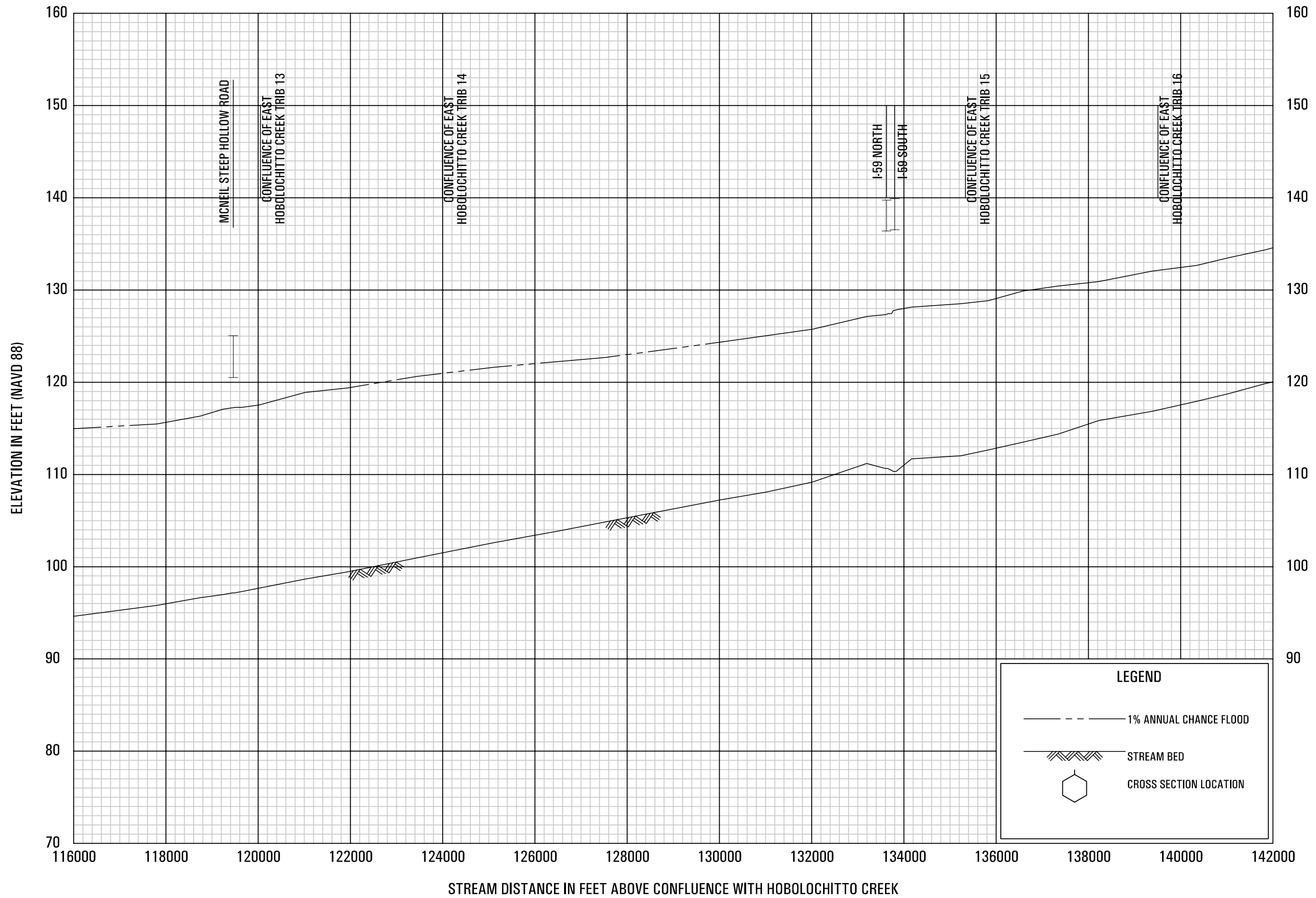




**FLOOD PROFILES**

**EAST HOBOLOCHITTO CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS,**  
 AND INCORPORATED AREAS

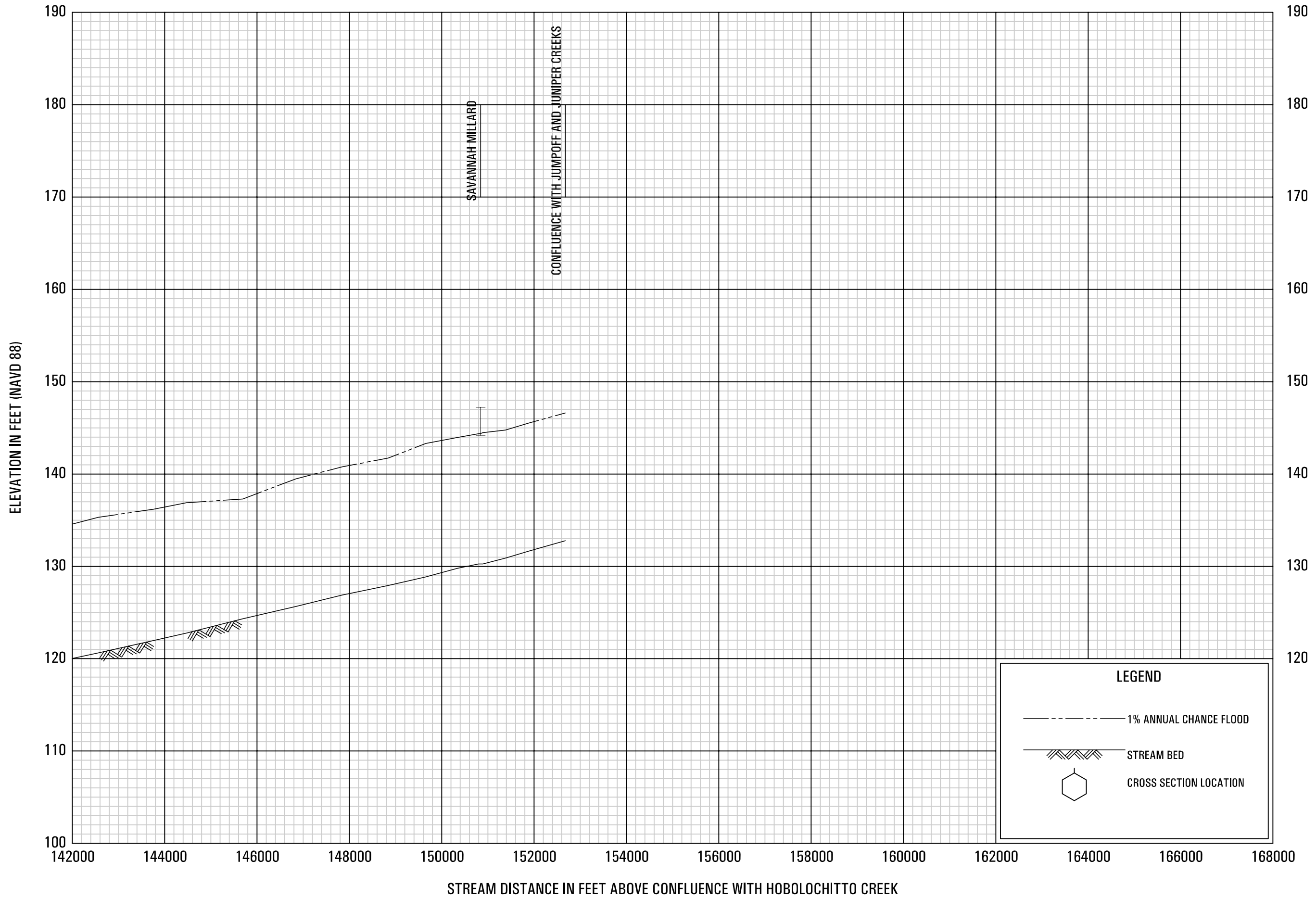


**FLOOD PROFILES**  
EAST HOBOLOCHITTO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS,**  
AND INCORPORATED AREAS

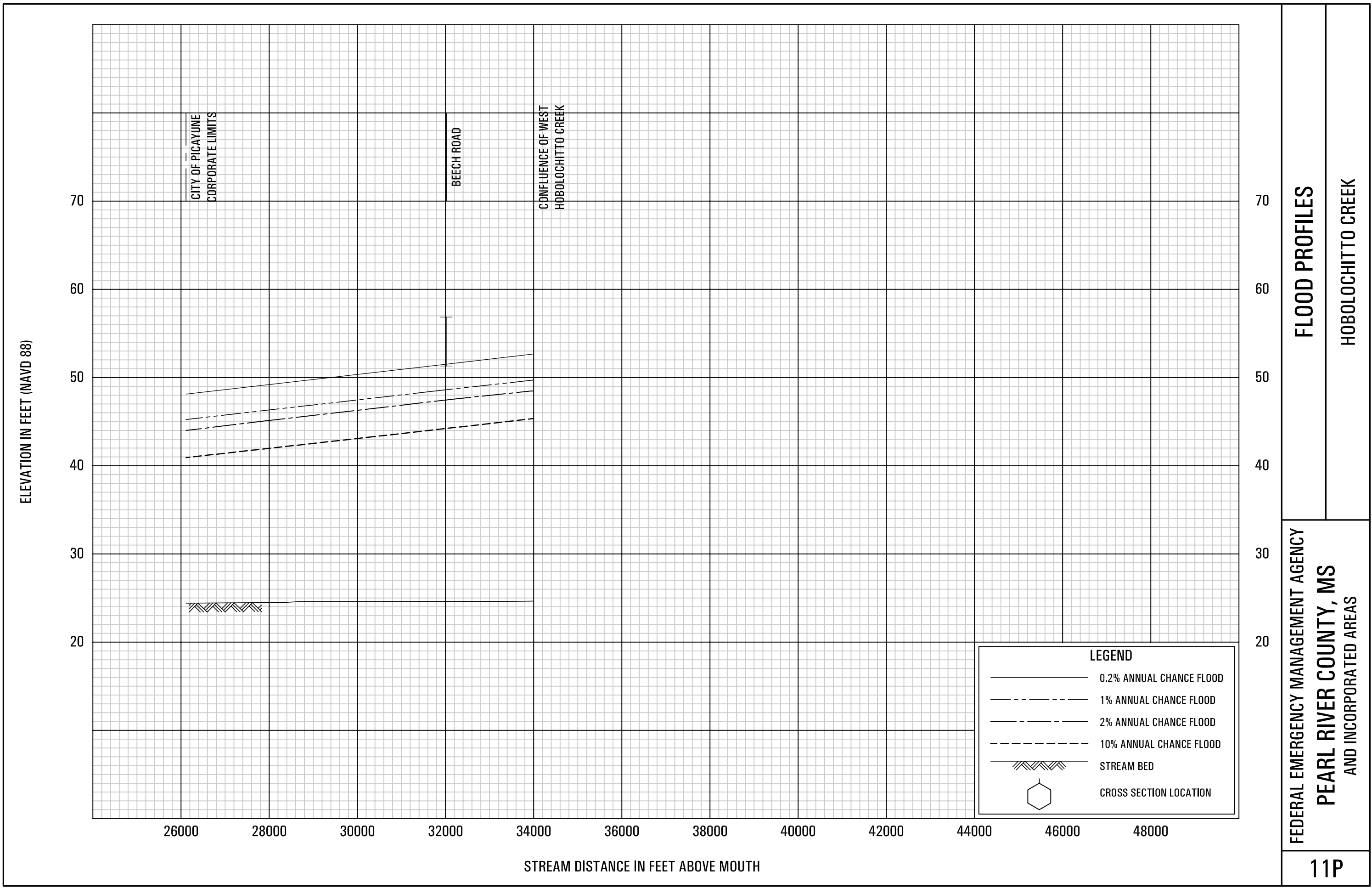
**09P**



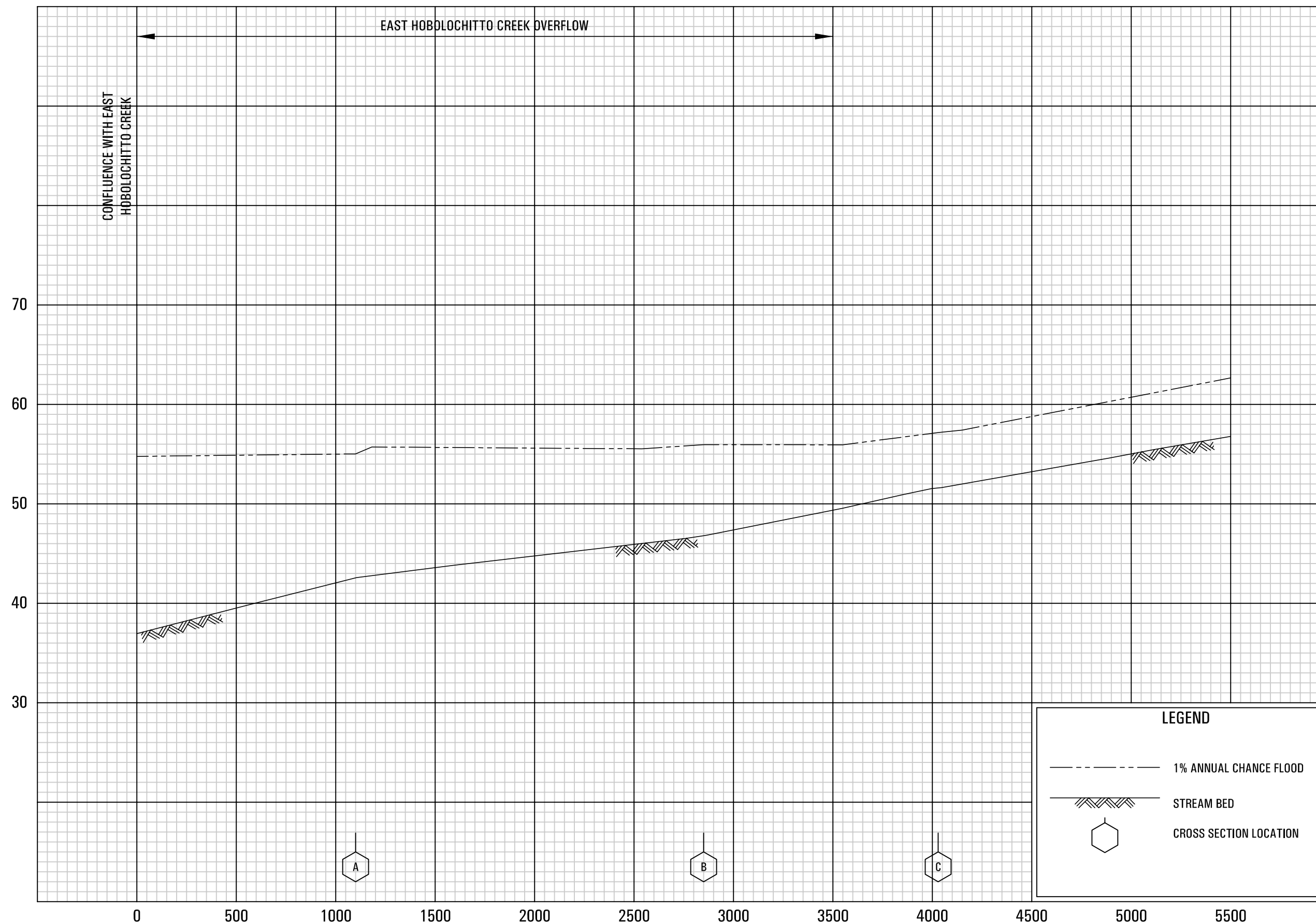


**FLOOD PROFILES**  
**EAST HOBOLOCHITTO CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS,**  
 AND INCORPORATED AREAS



ELEVATION IN FEET (NAVD 88)



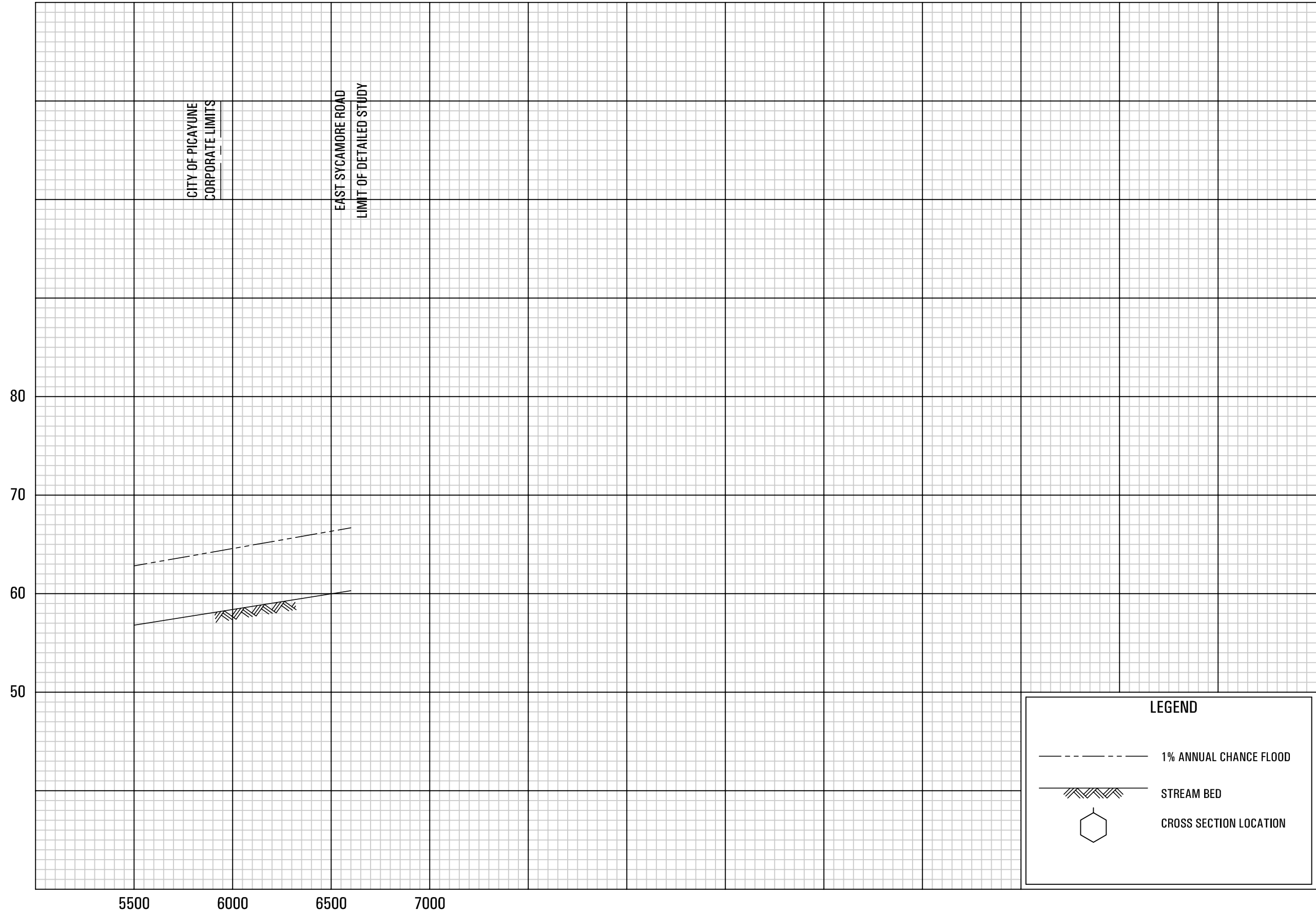
STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH EAST HOBOLOCHITTO CREEK

**FLOOD PROFILES**

**HOLLEY CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
AND INCORPORATED AREAS

ELEVATION IN FEET (NAVD 88)



5500 6000 6500 7000

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH EAST HOBOLOCHITTO CREEK

**LEGEND**

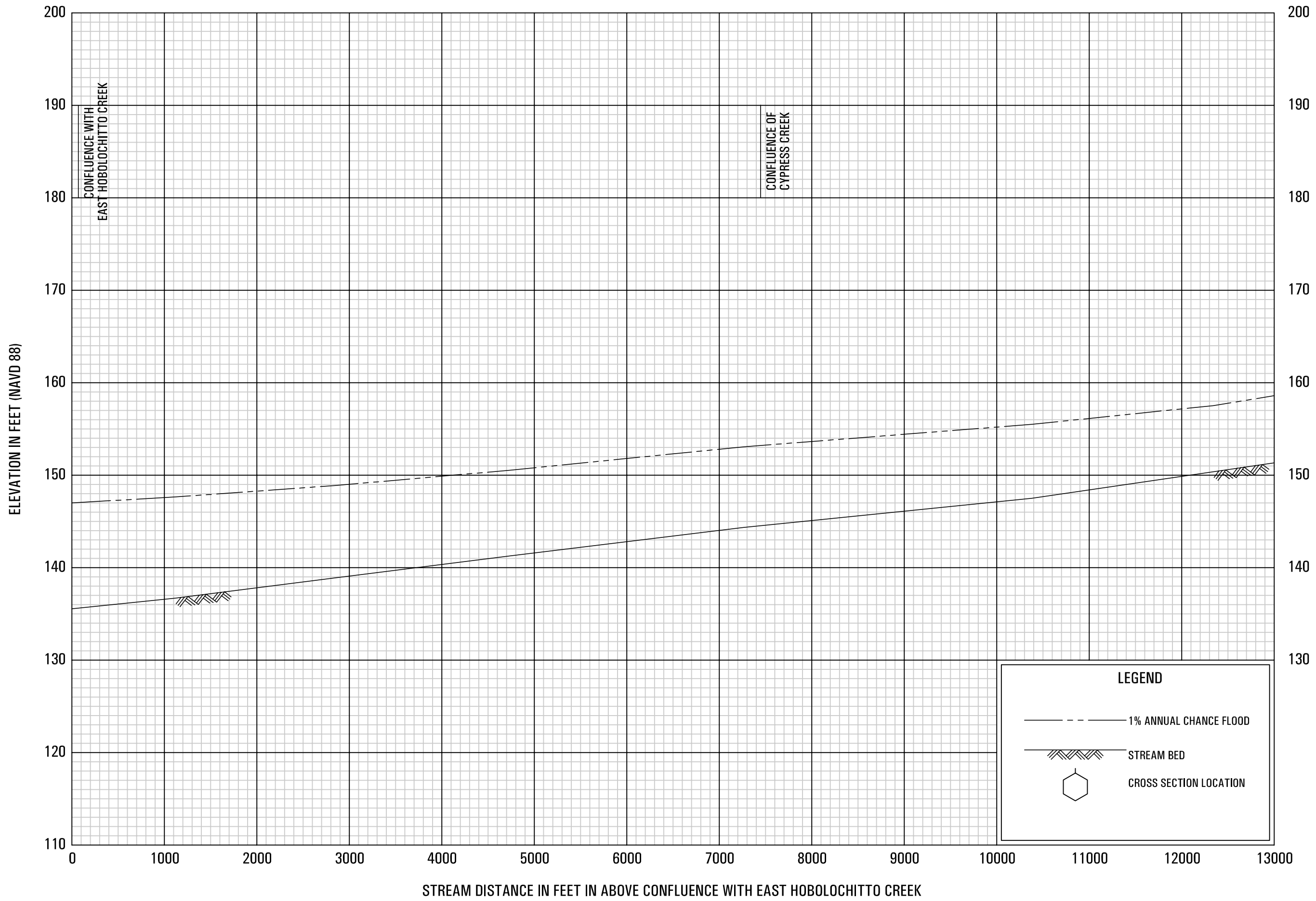
- 1% ANNUAL CHANCE FLOOD
- /————— STREAM BED
- ⬡ CROSS SECTION LOCATION

80  
70  
60  
50

**FLOOD PROFILES**

**HOLLEY CREEK**

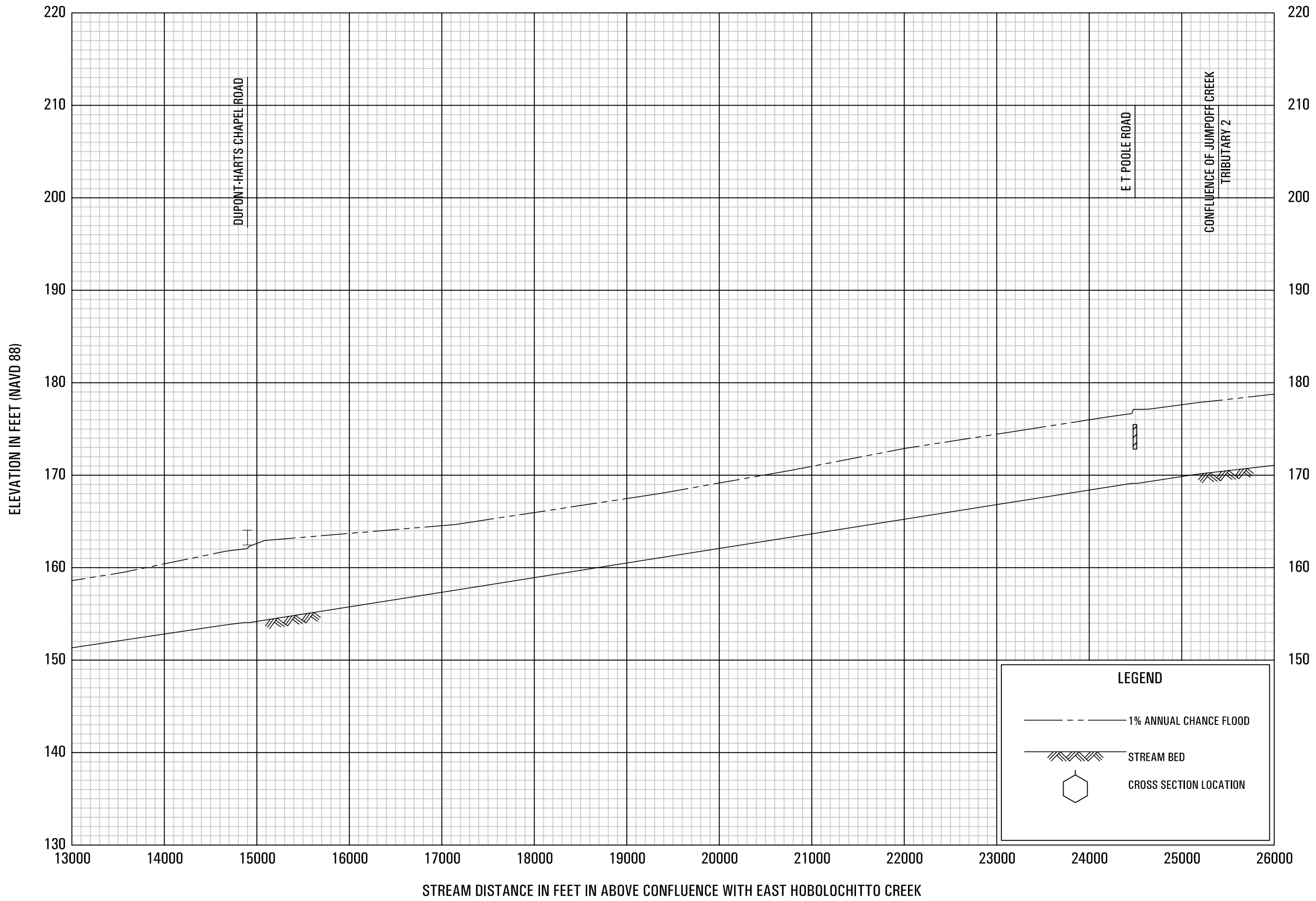
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
AND INCORPORATED AREAS



**FLOOD PROFILES**

JUMPOFF CREEK

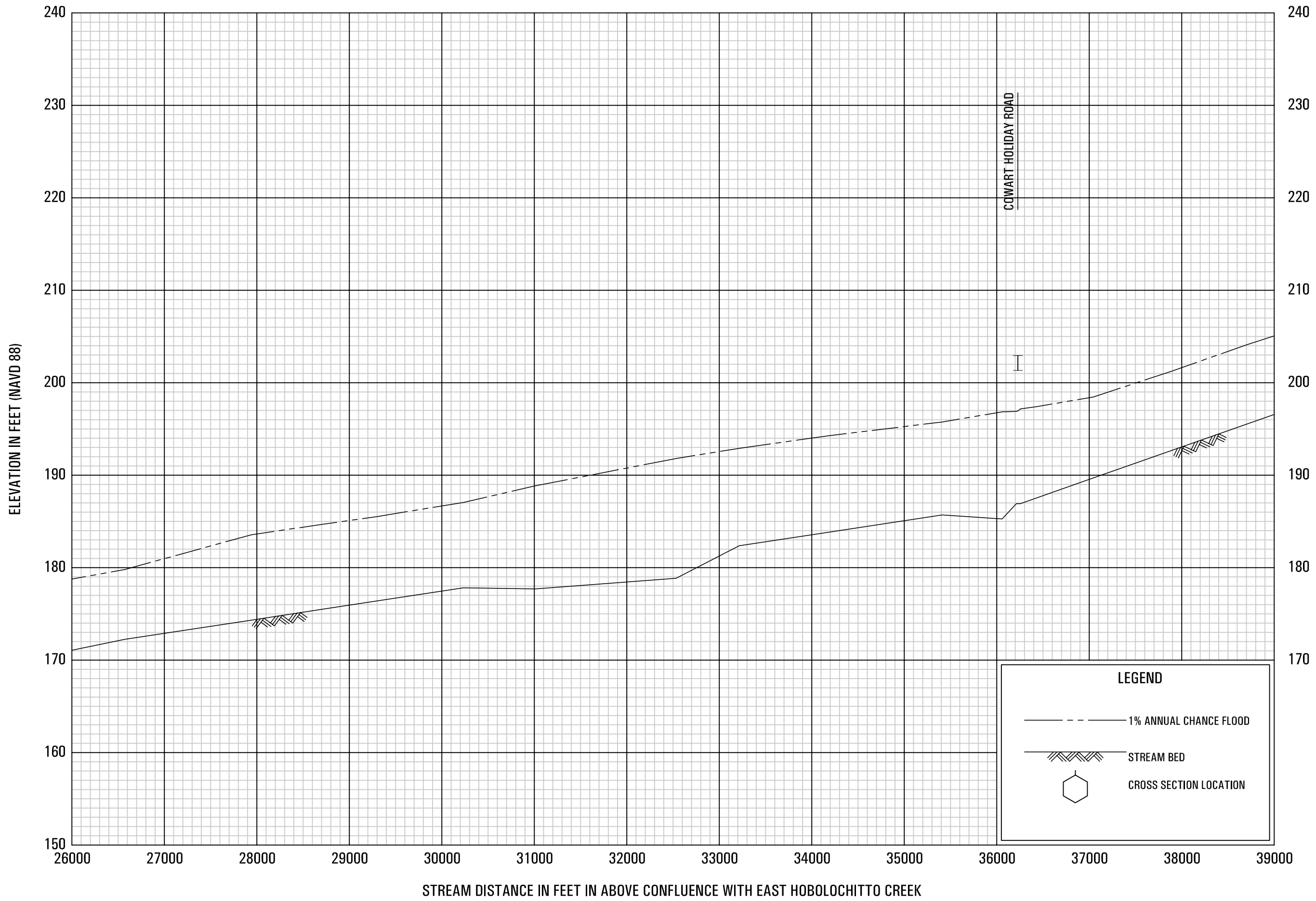
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS



**FLOOD PROFILES**

JUMPOFF CREEK

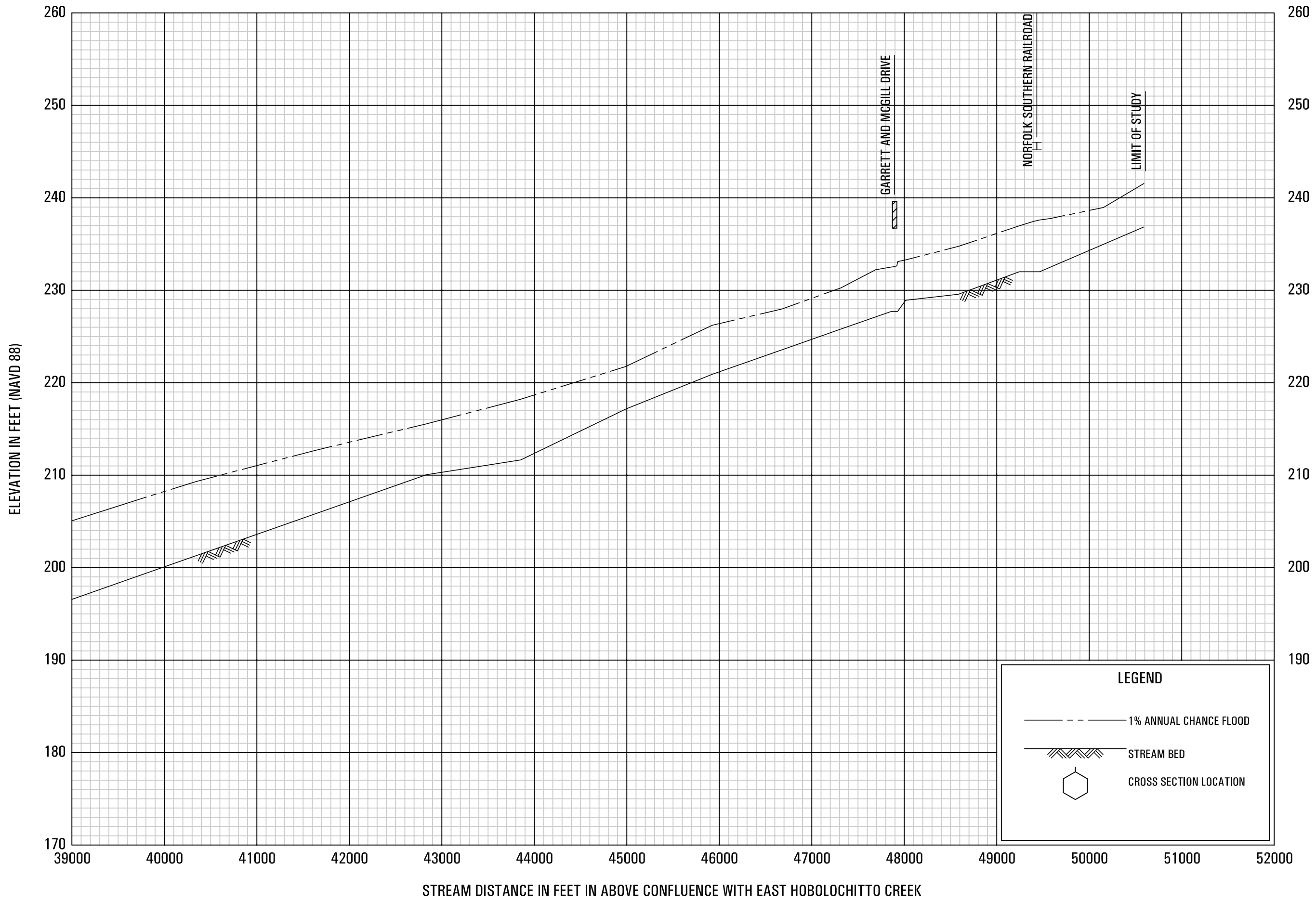
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**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS



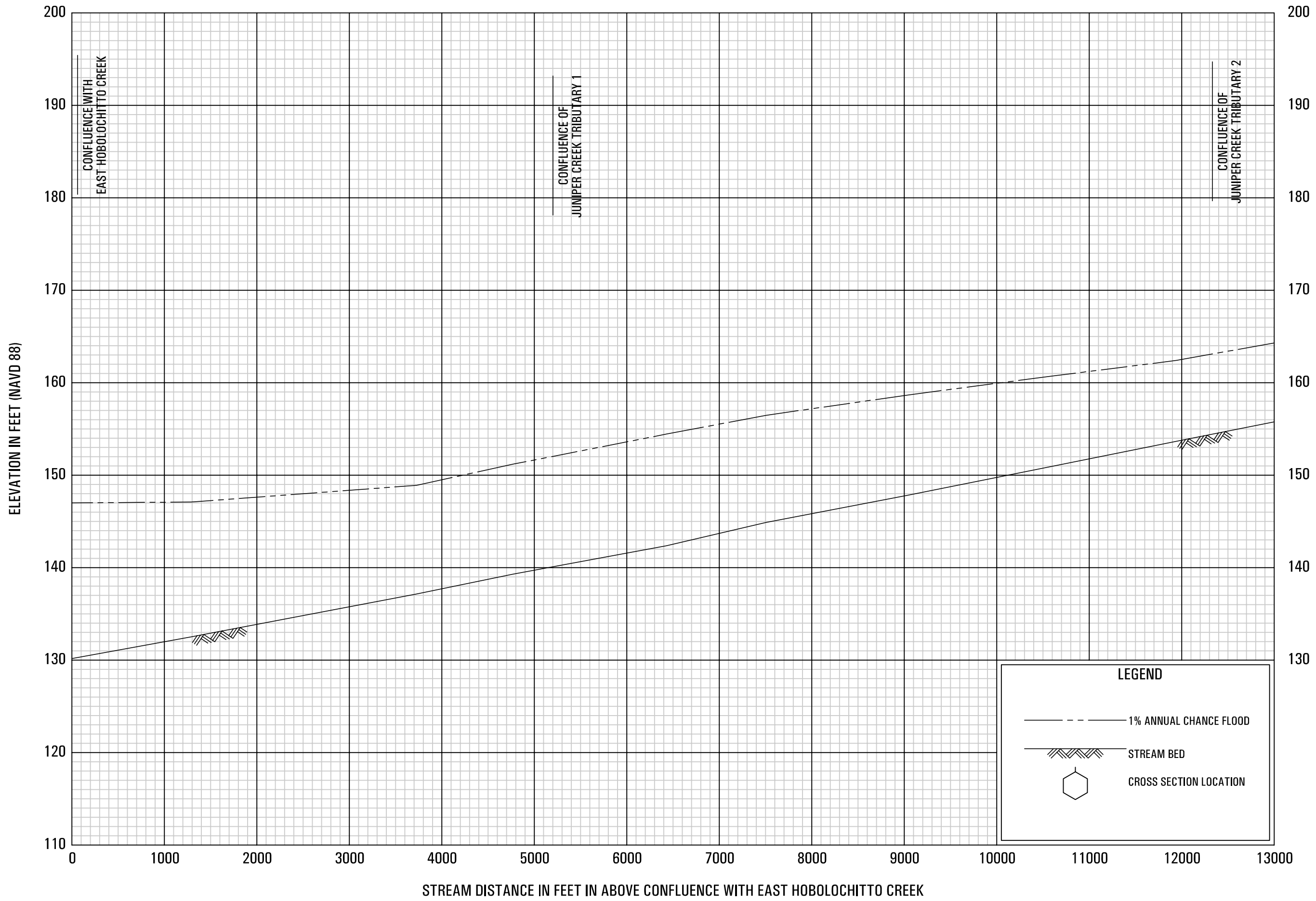
**LEGEND**

- 1% ANNUAL CHANCE FLOOD
- STREAM BED
- ⚡ CROSS SECTION LOCATION

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
AND INCORPORATED AREAS



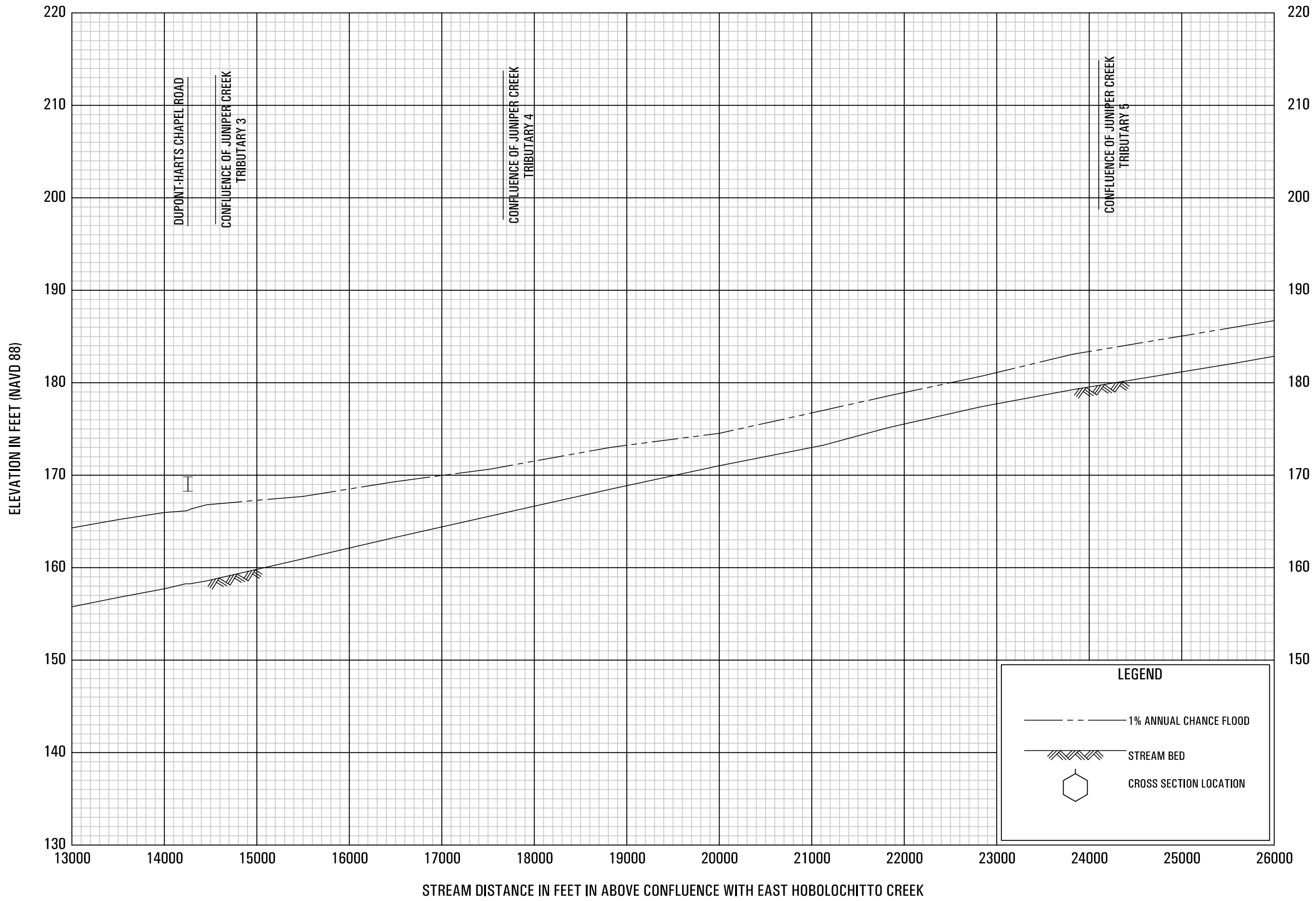




**FLOOD PROFILES**

**JUNIPER CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS



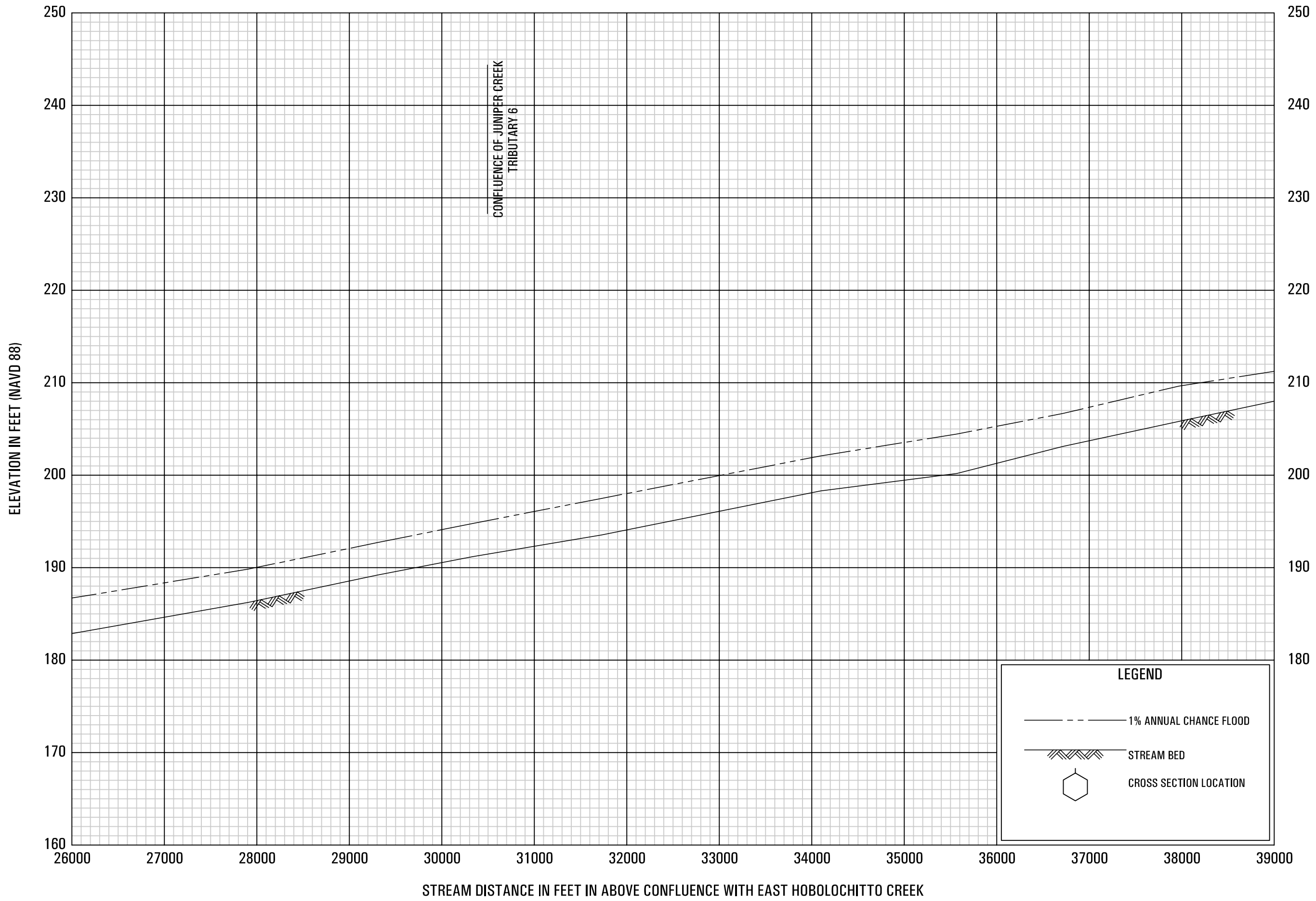
**LEGEND**

- 1% ANNUAL CHANCE FLOOD
- /\/\/\————— STREAM BED
- ⬡ CROSS SECTION LOCATION

**FLOOD PROFILES**

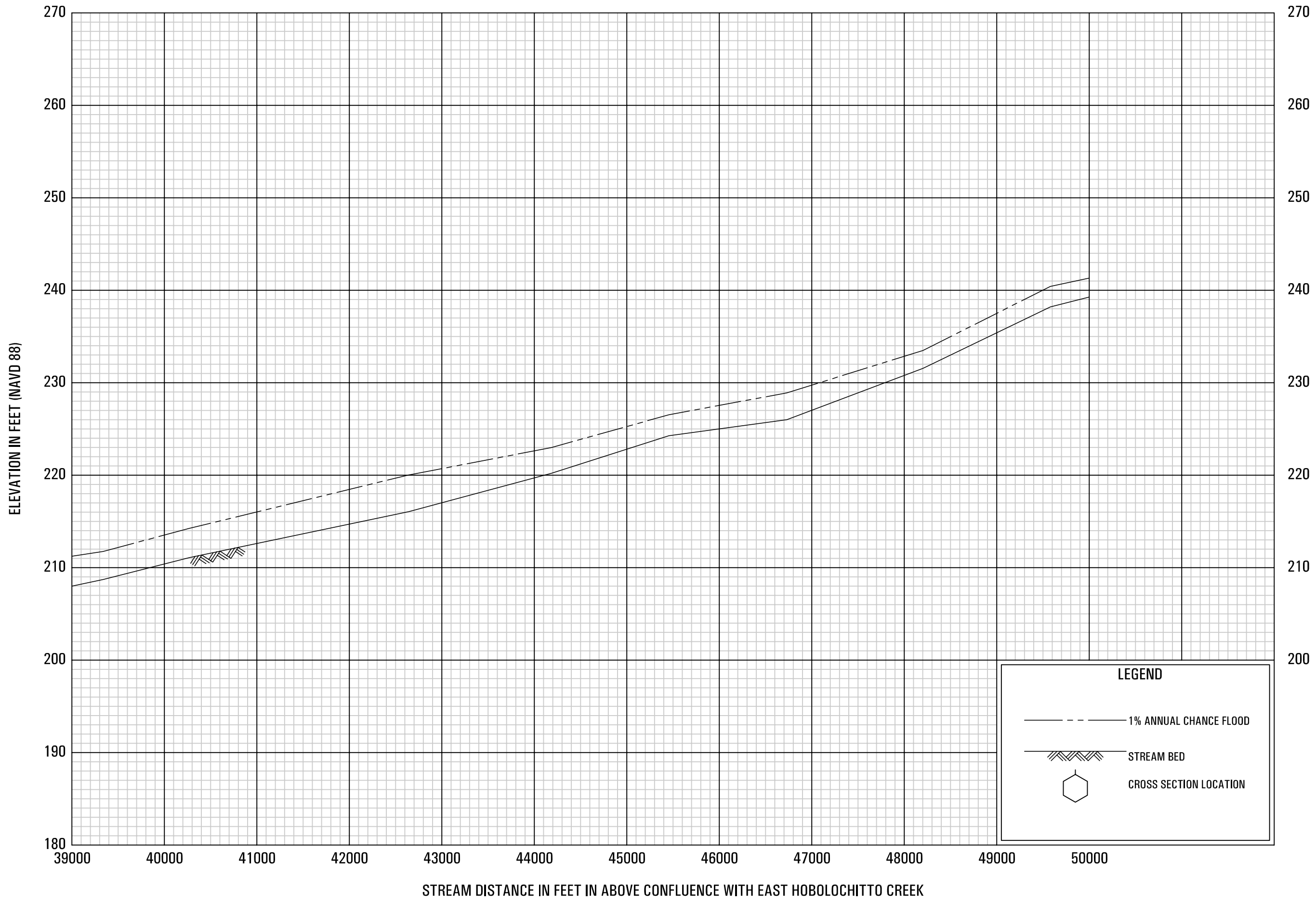
JUNIPER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS



**FLOOD PROFILES**  
**JUNIPER CREEK**

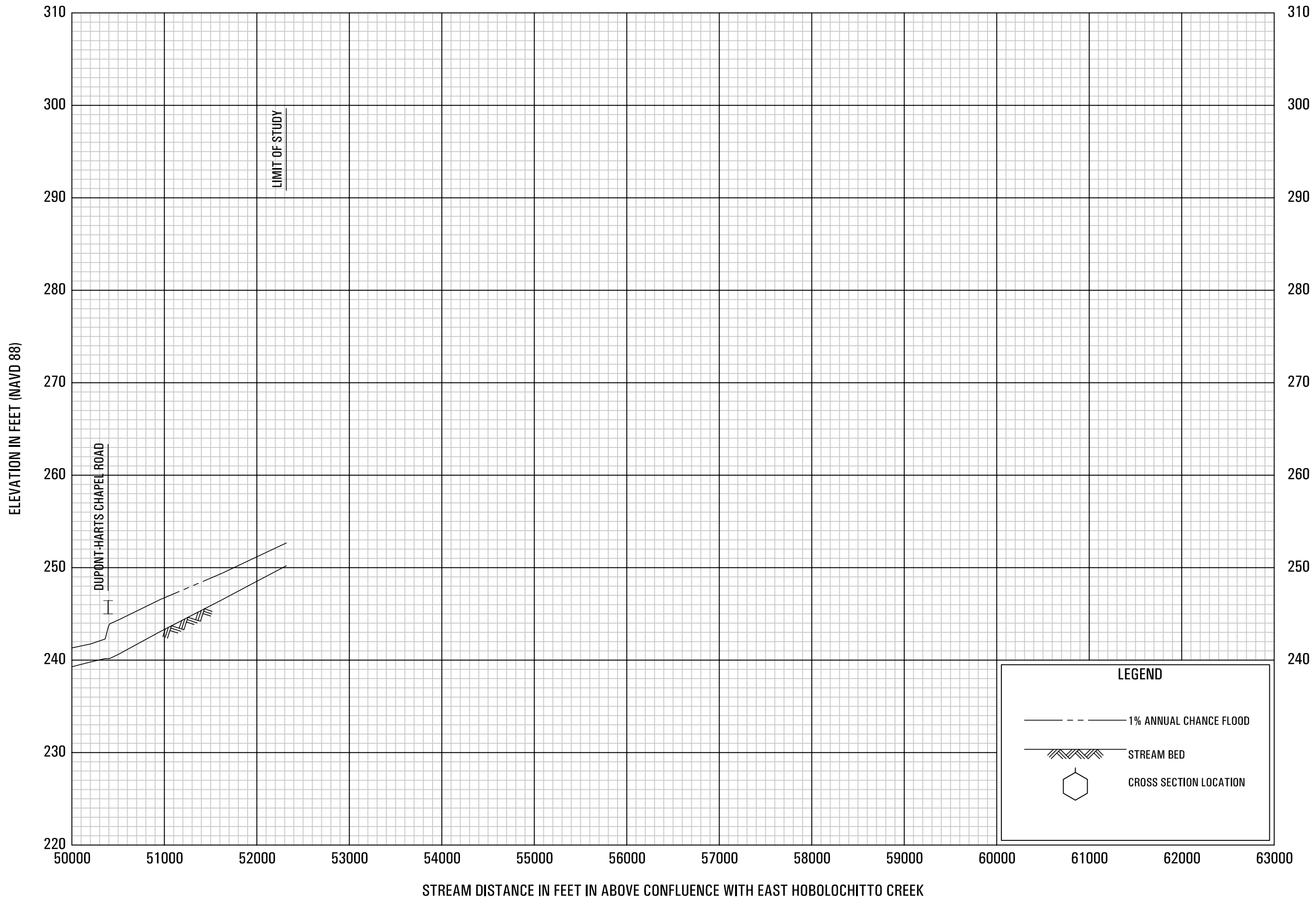
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
AND INCORPORATED AREAS

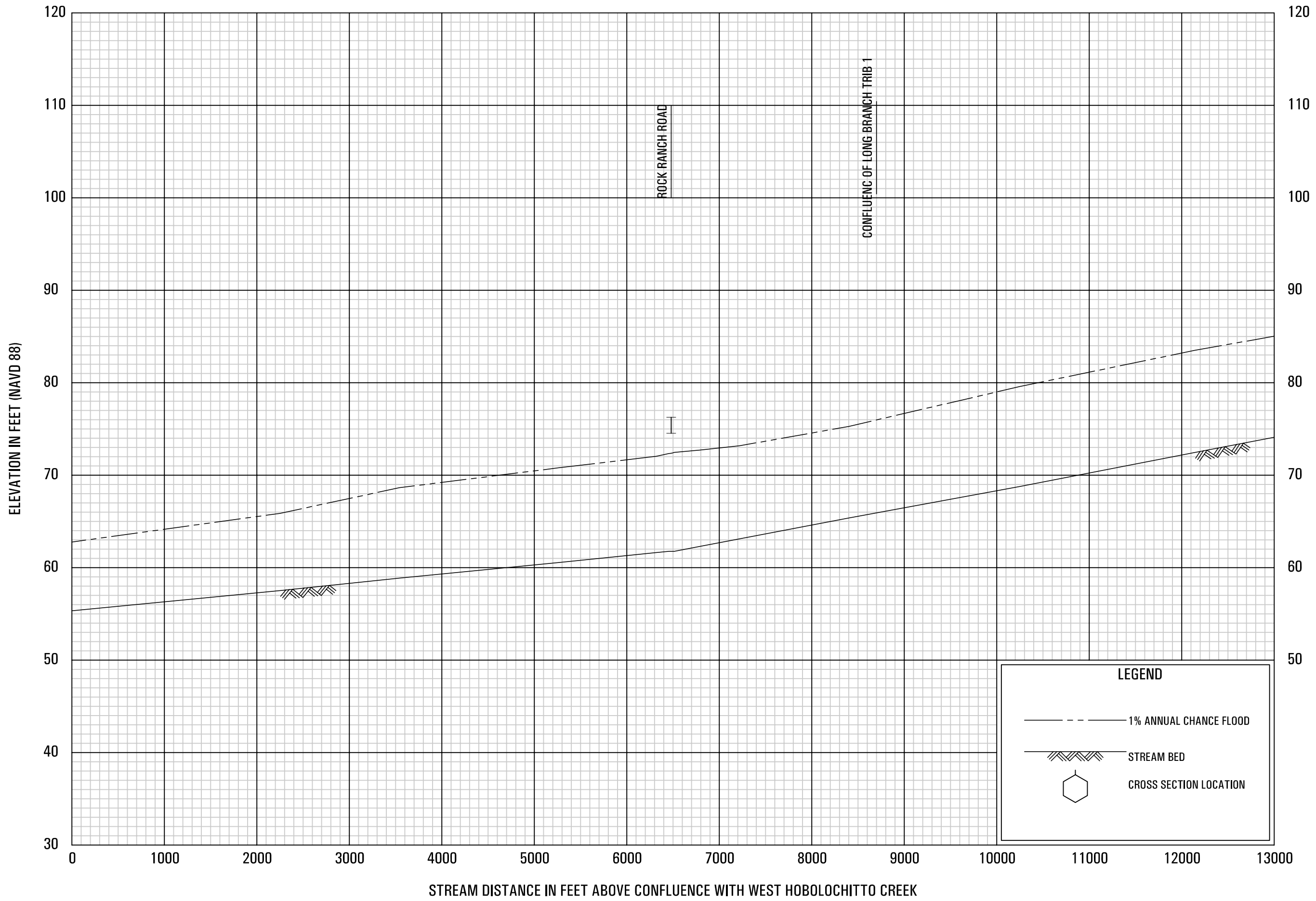


**FLOOD PROFILES**

**JUNIPER CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS

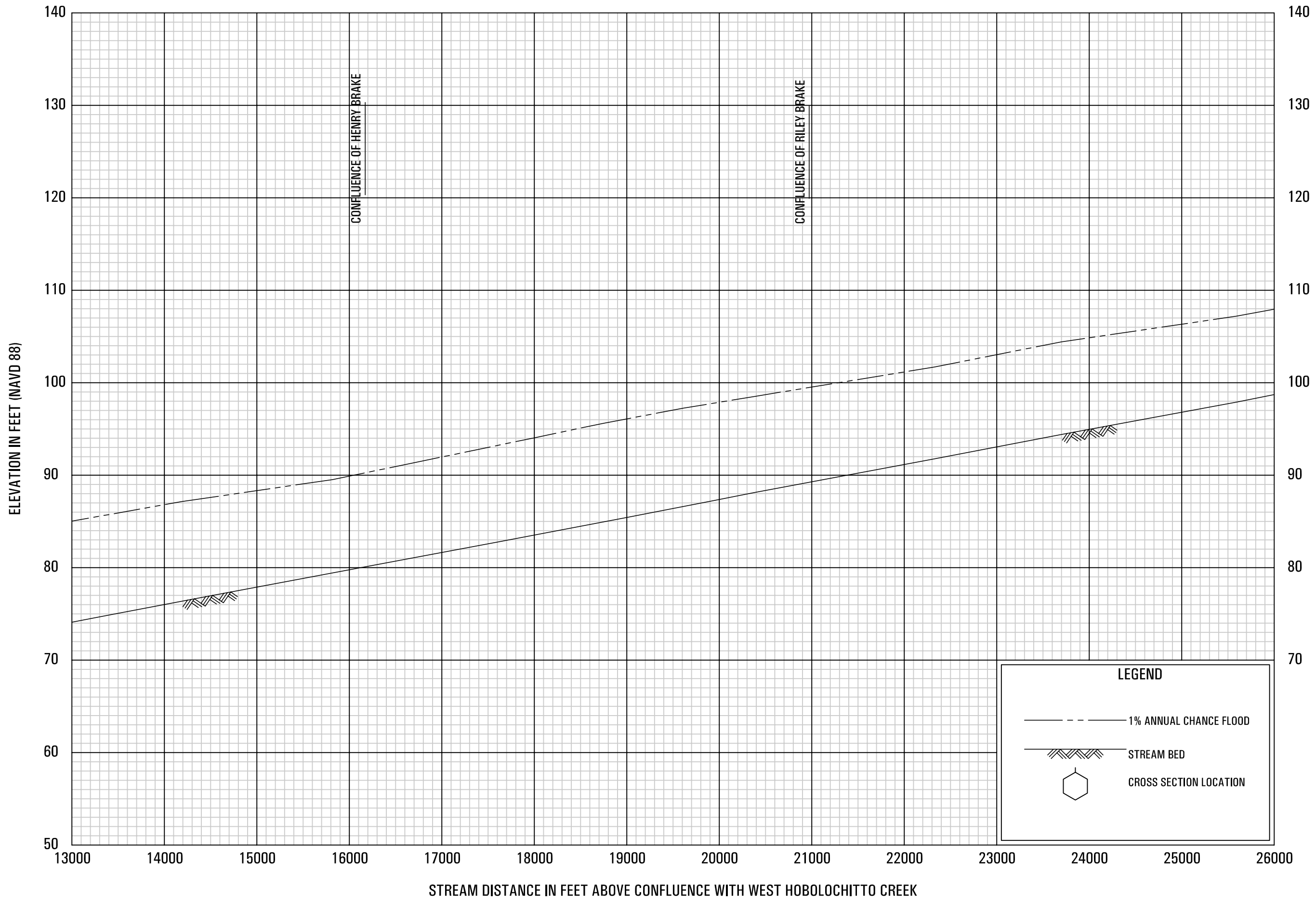




**FLOOD PROFILES**

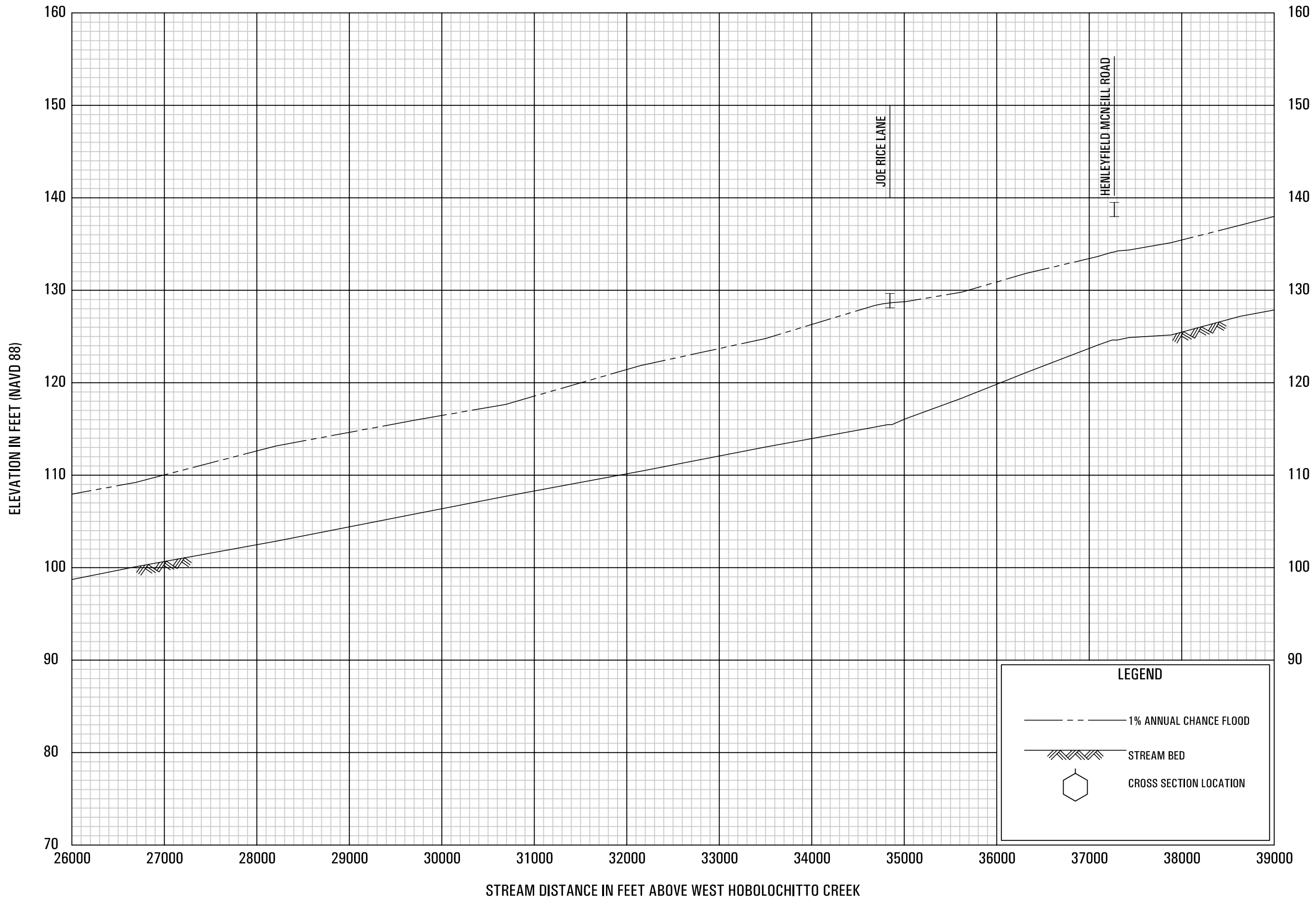
**LONG BRANCH**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS



**FLOOD PROFILES**  
**LONG BRANCH**

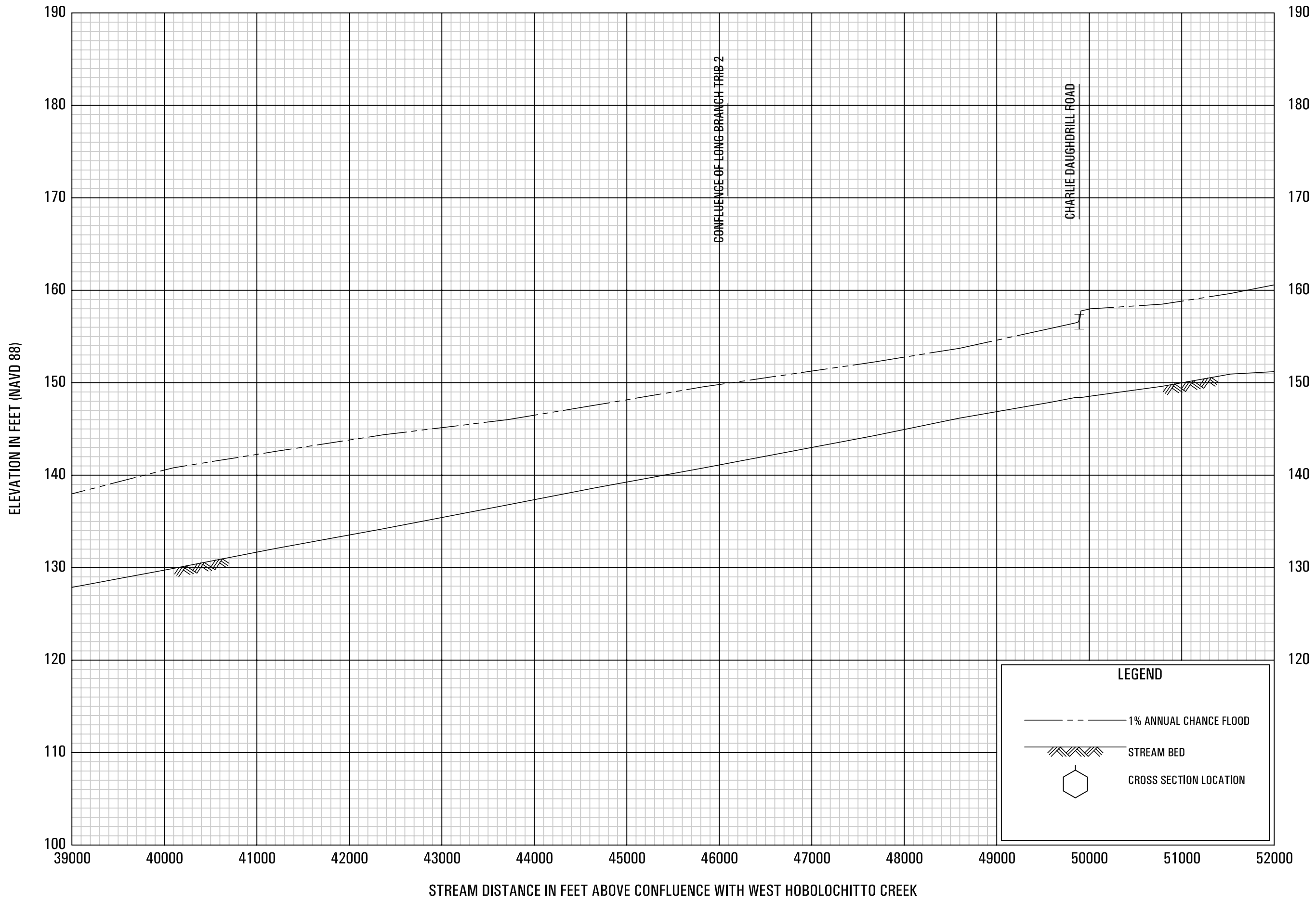
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
AND INCORPORATED AREAS



**FLOOD PROFILES**  
**LONG BRANCH**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
AND INCORPORATED AREAS



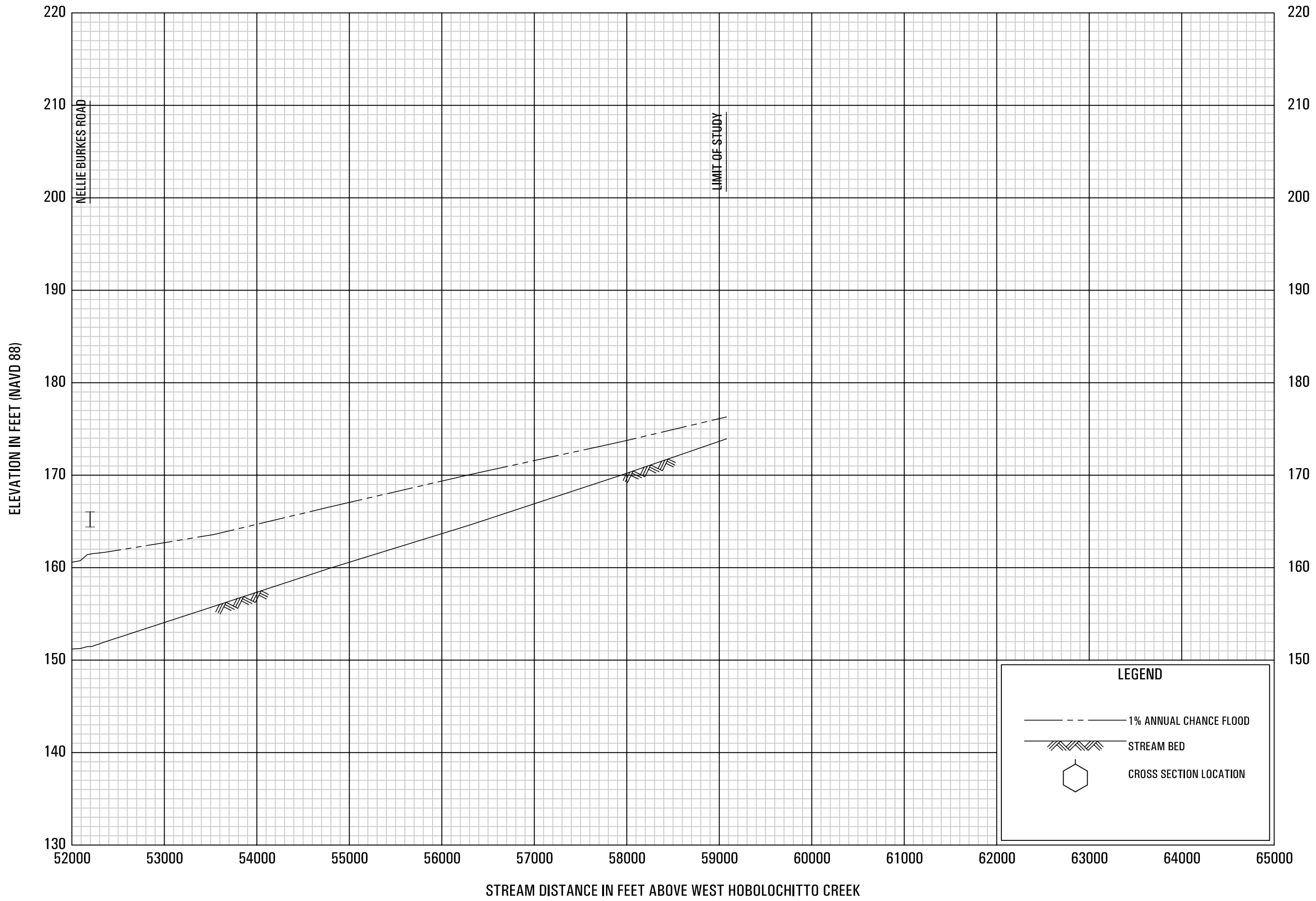


**LEGEND**

- 1% ANNUAL CHANCE FLOOD
- STREAM BED
- CROSS SECTION LOCATION

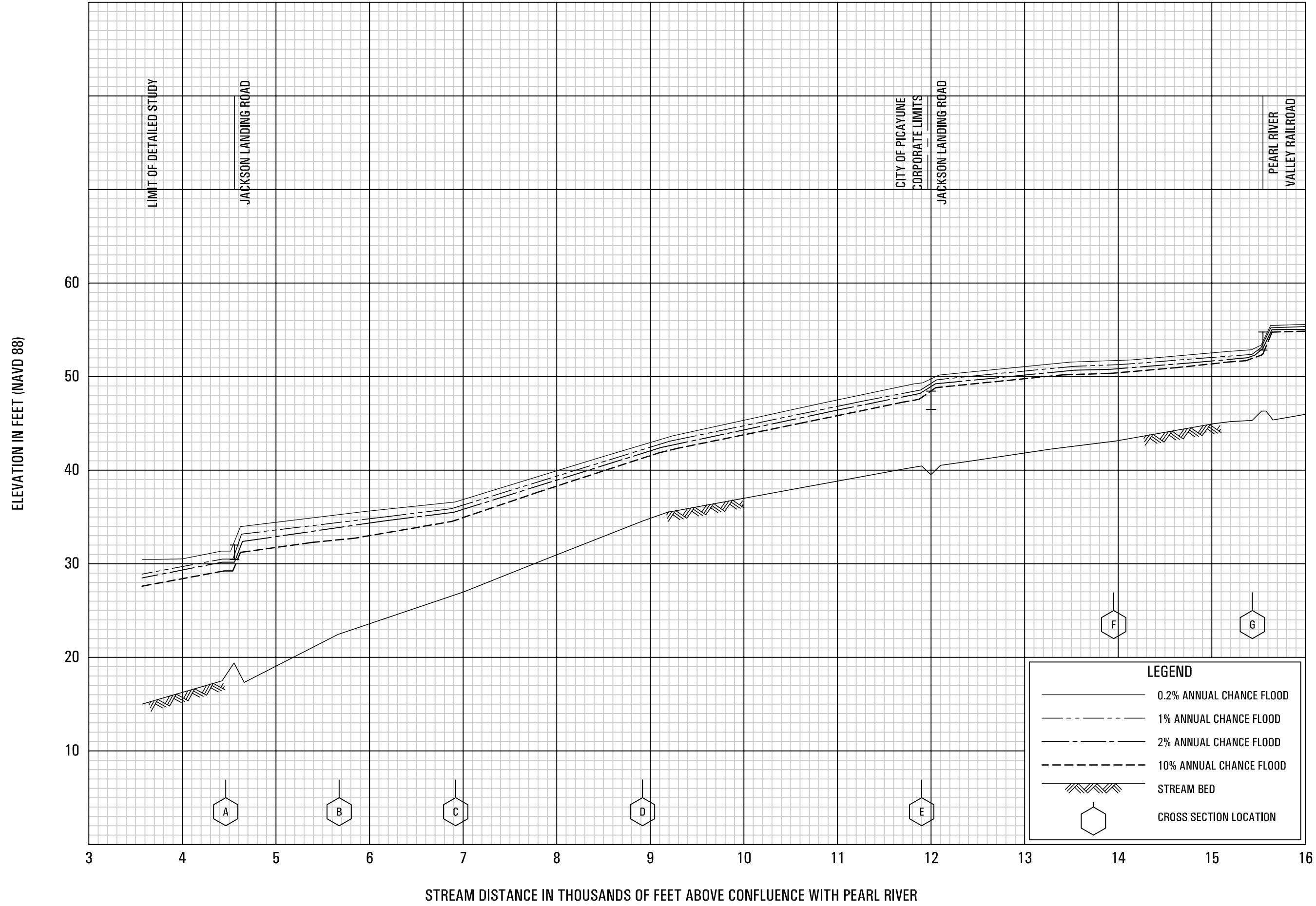
**FLOOD PROFILES**  
**LONG BRANCH**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
AND INCORPORATED AREAS



**FLOOD PROFILES**  
**LONG BRANCH**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
AND INCORPORATED AREAS

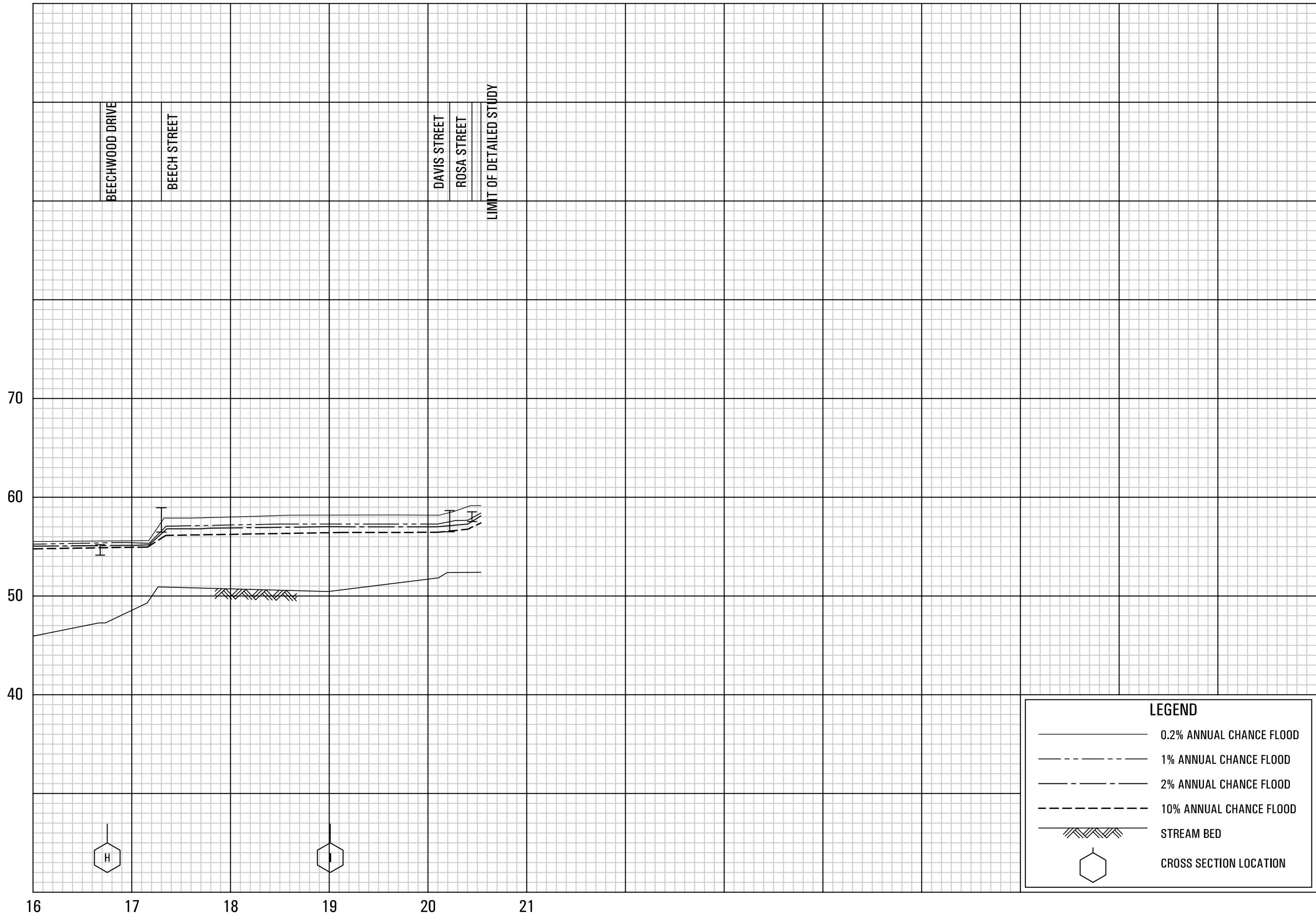


**FLOOD PROFILES**

MILL CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS

ELEVATION IN FEET (NAVD 88)

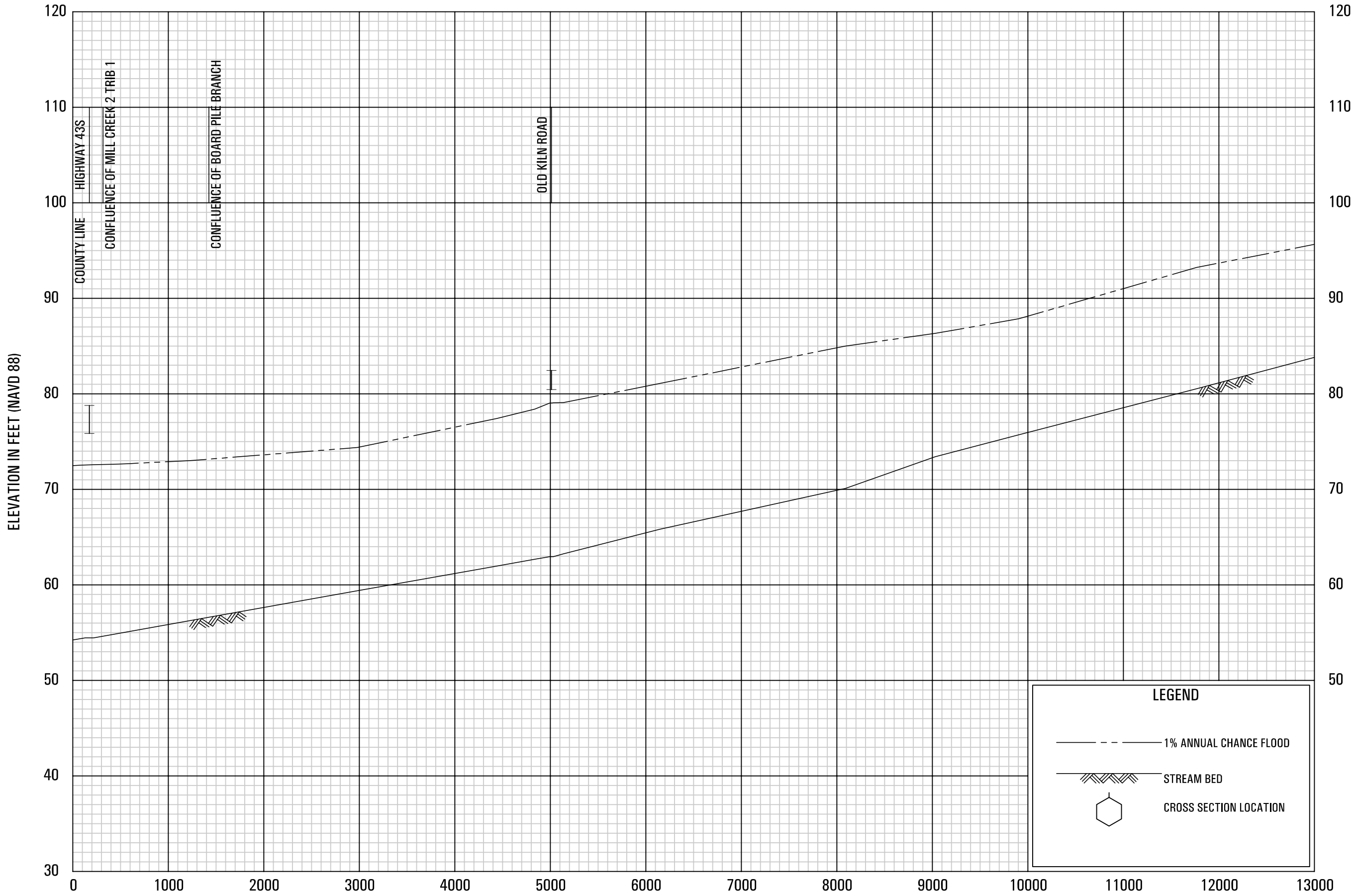


**FLOOD PROFILES**

MILL CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
AND INCORPORATED AREAS

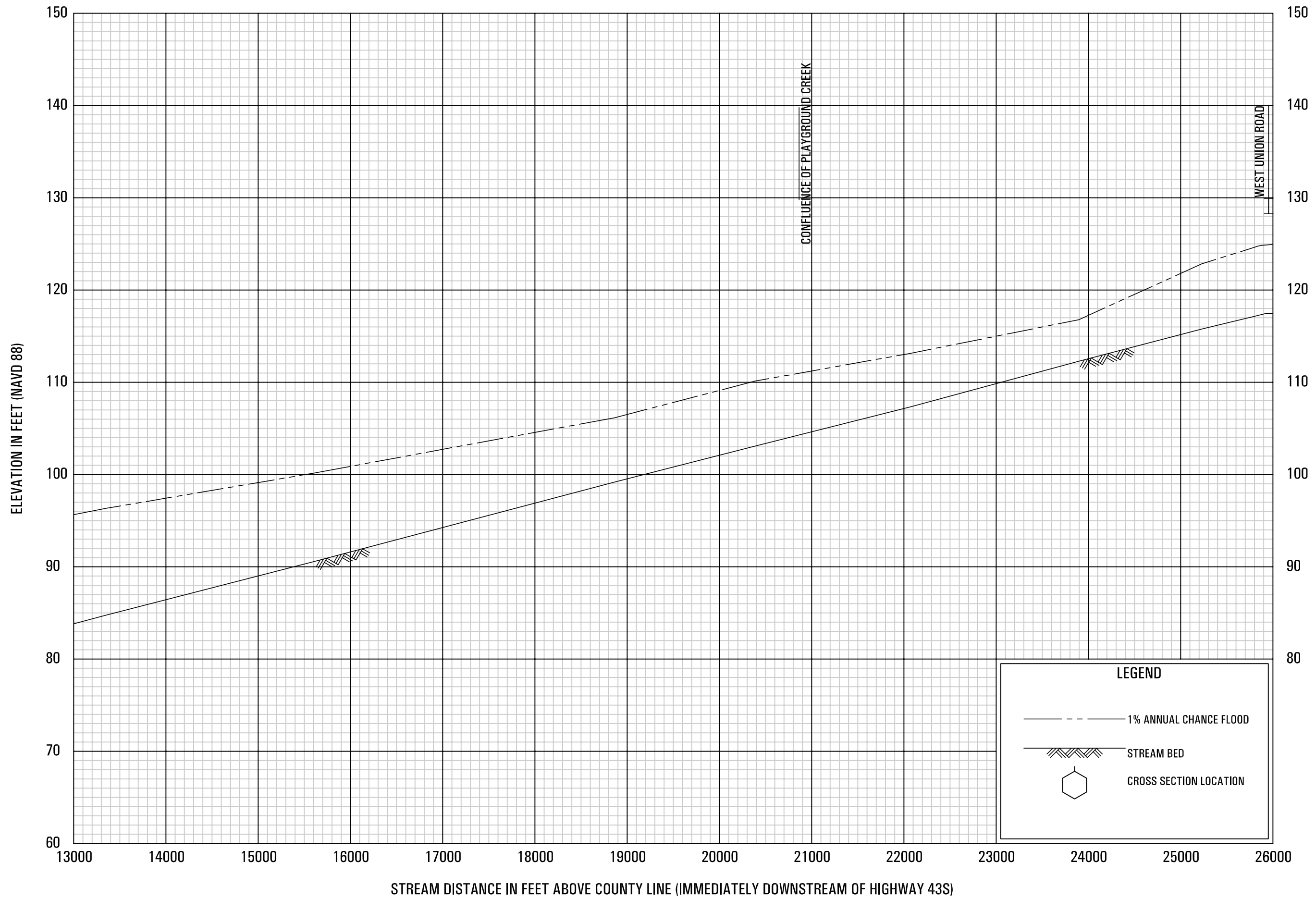
STREAM DISTANCE IN THOUSANDS OF FEET ABOVE CONFLUENCE WITH PEARL RIVER



**FLOOD PROFILES**

**MILL CREEK NO.1**

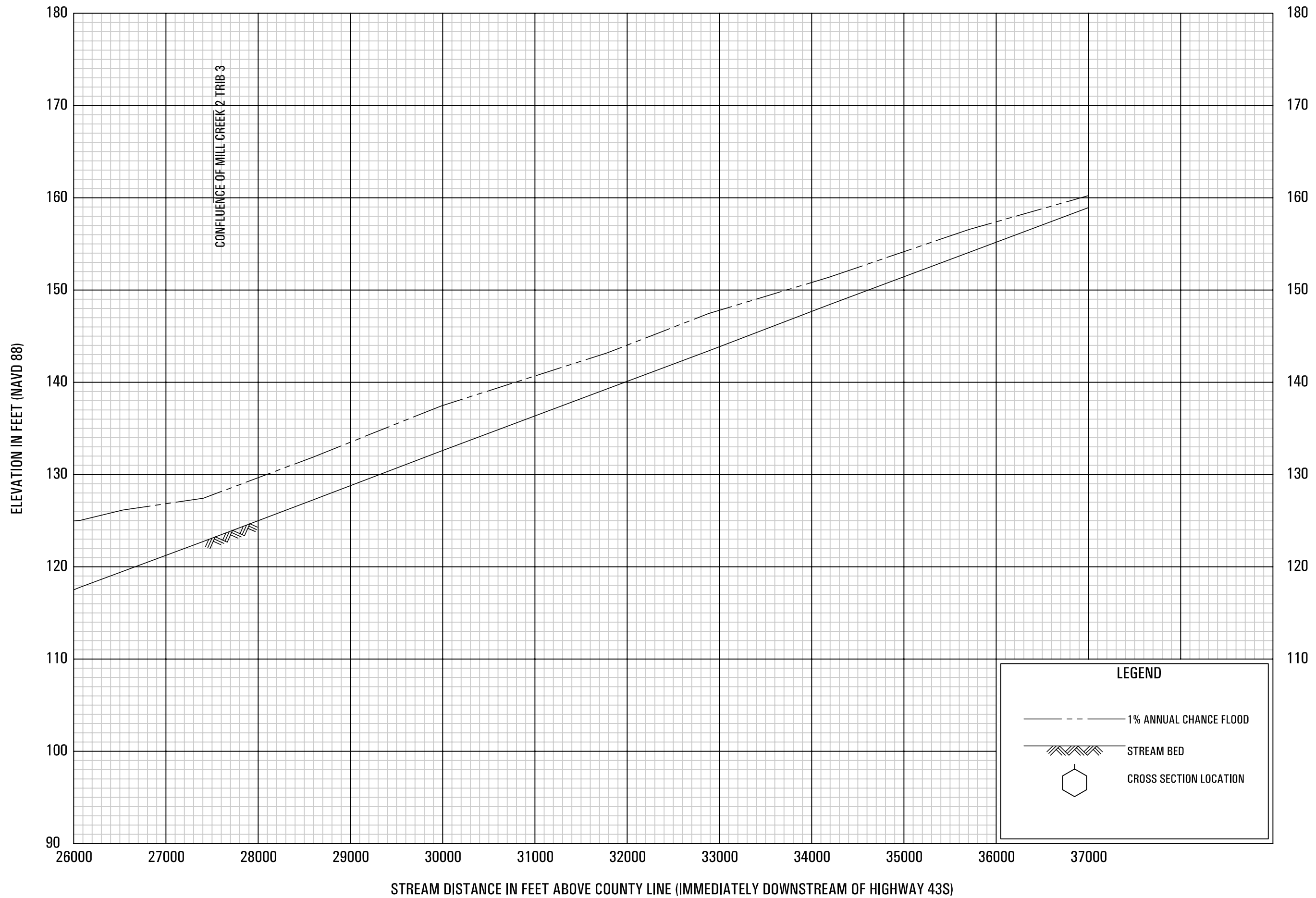
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS



**FLOOD PROFILES**

**MILL CREEK NO.1**

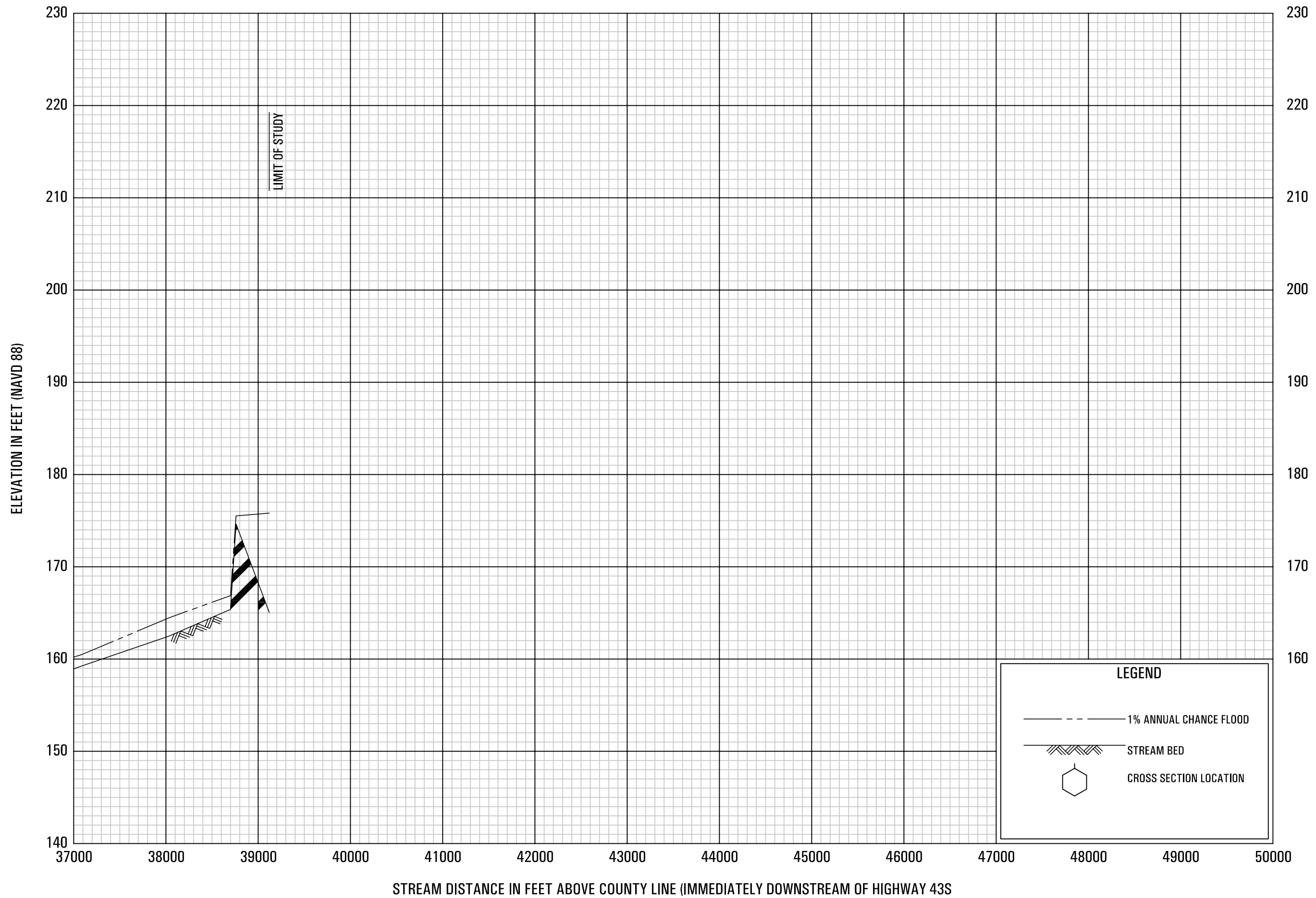
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS



**FLOOD PROFILES**

**MILL CREEK NO.1**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS



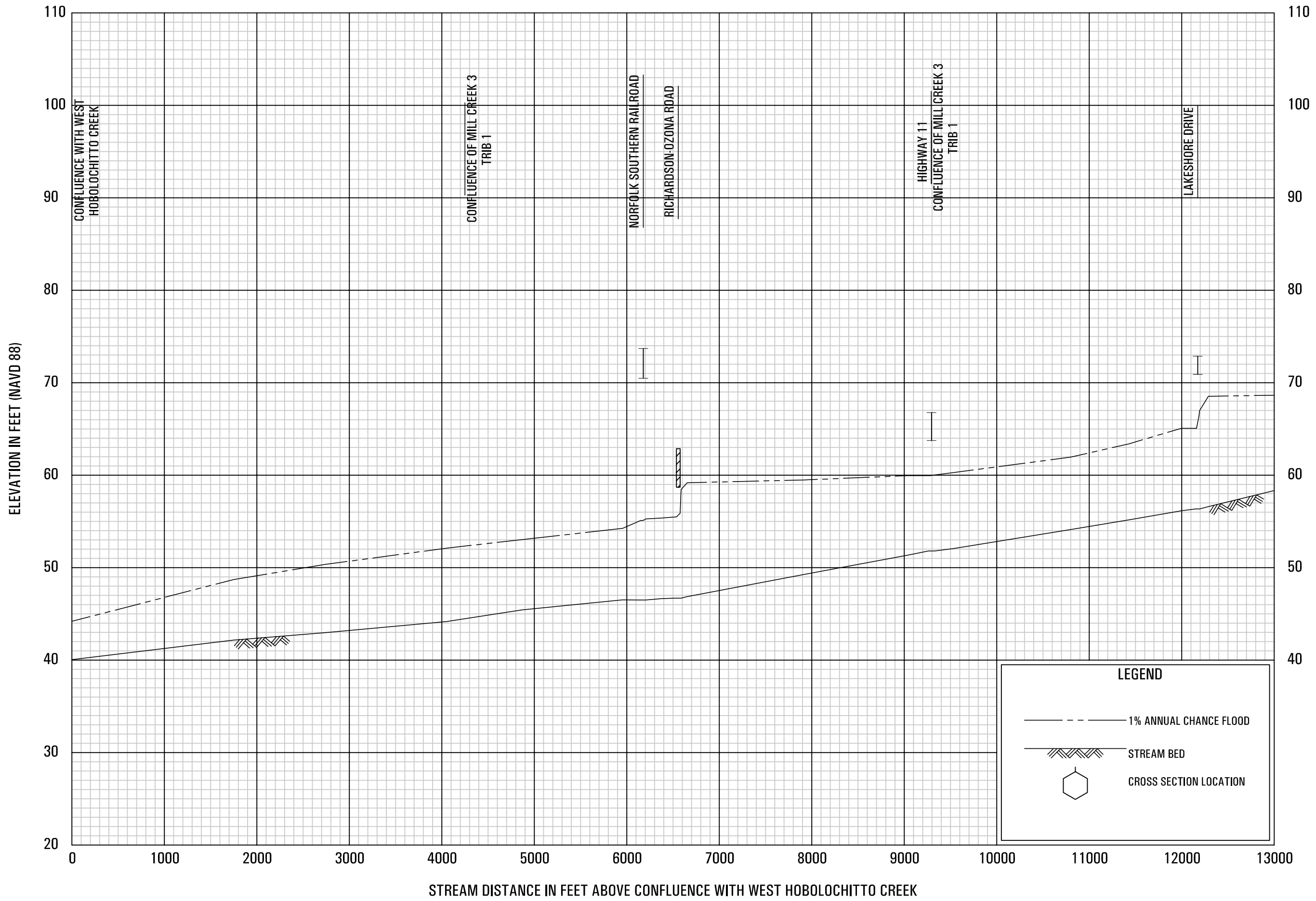
**FLOOD PROFILES**

**MILL CREEK NO.1**

**FEDERAL EMERGENCY MANAGEMENT AGENCY  
PEARL RIVER COUNTY, MS  
AND INCORPORATED AREAS**

**33P**

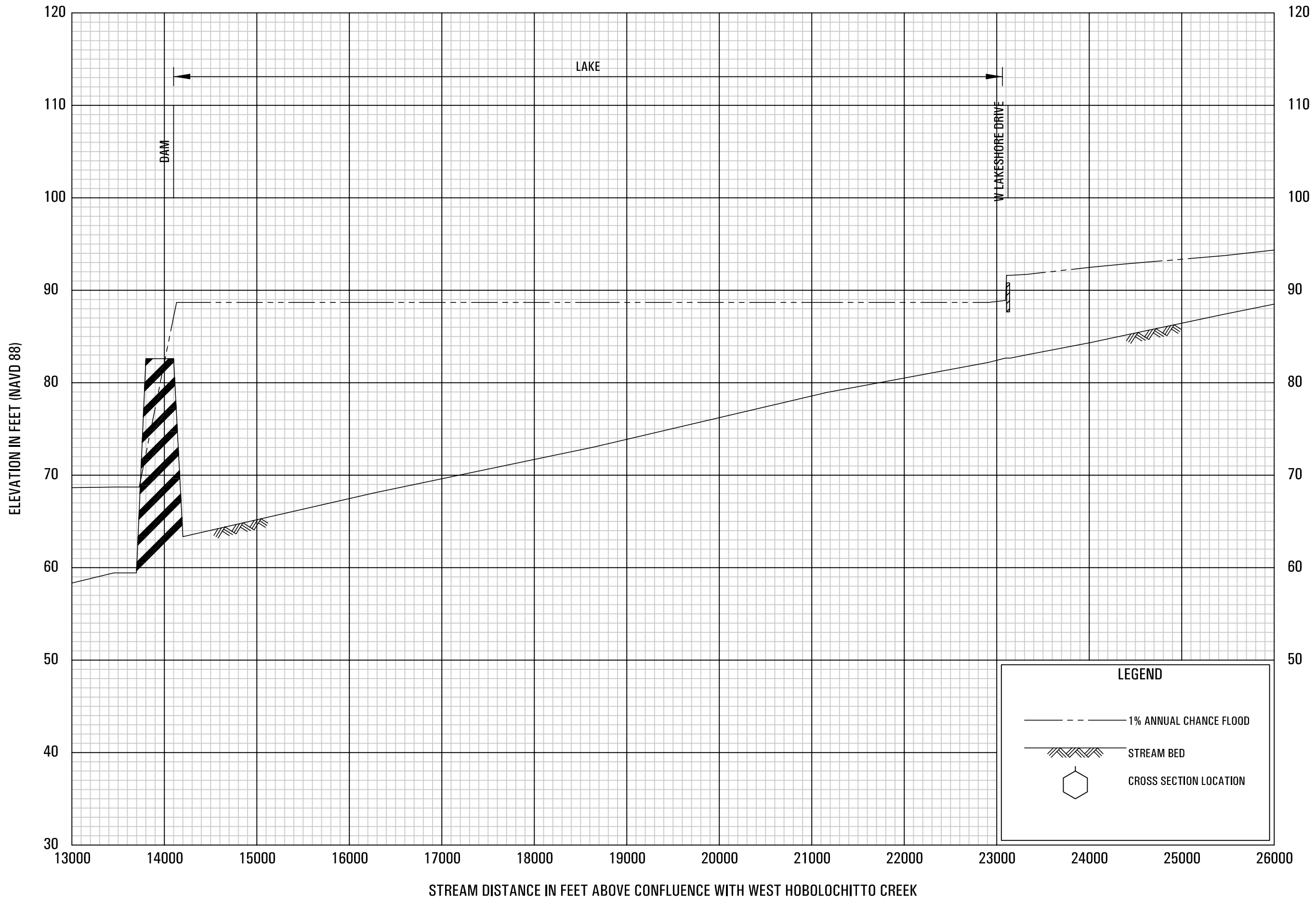




**FLOOD PROFILES**

**MILL CREEK NO.3**

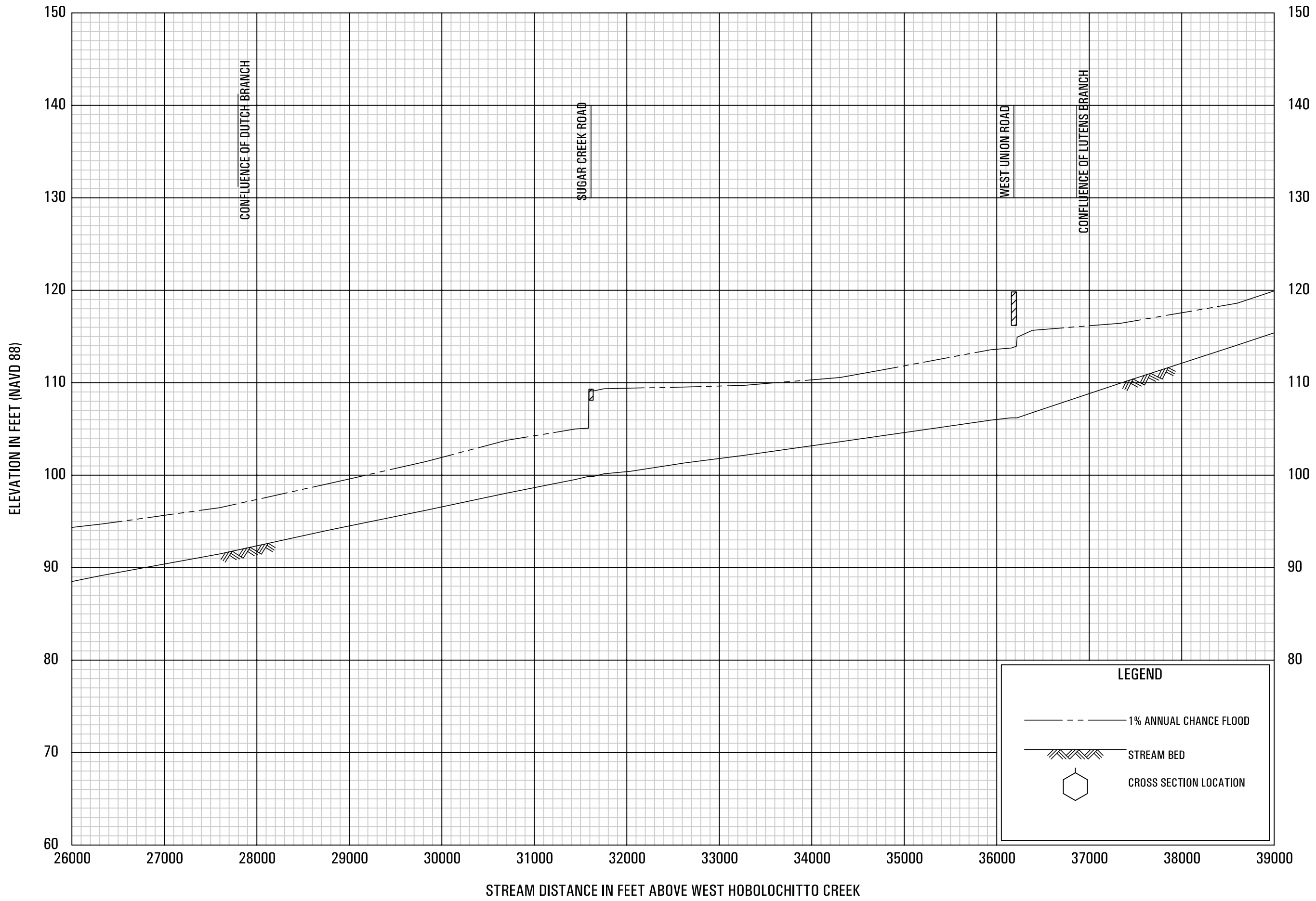
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS



**FLOOD PROFILES**

**MILL CREEK NO.3**

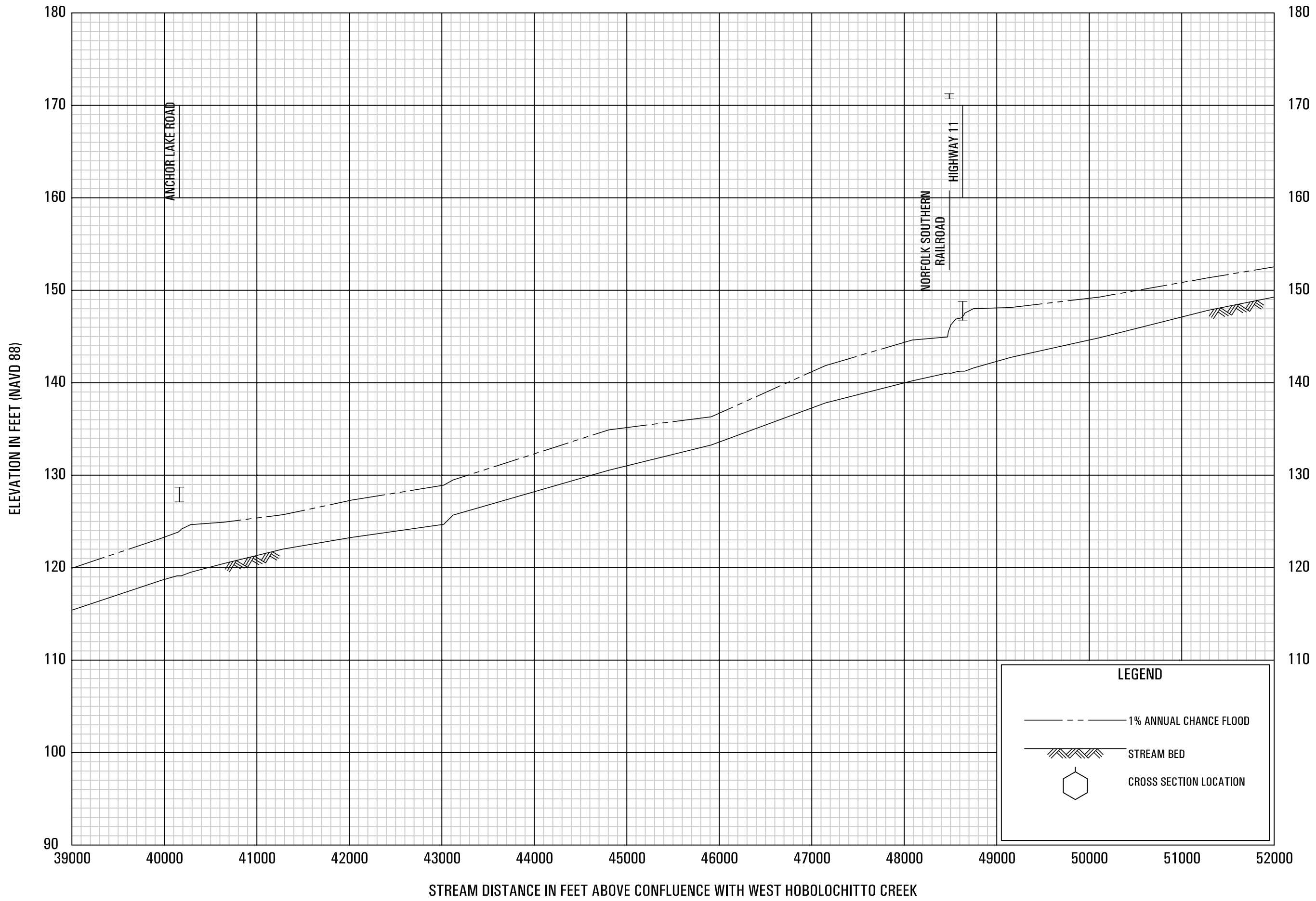
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS



**FLOOD PROFILES**

**MILL CREEK NO.3**

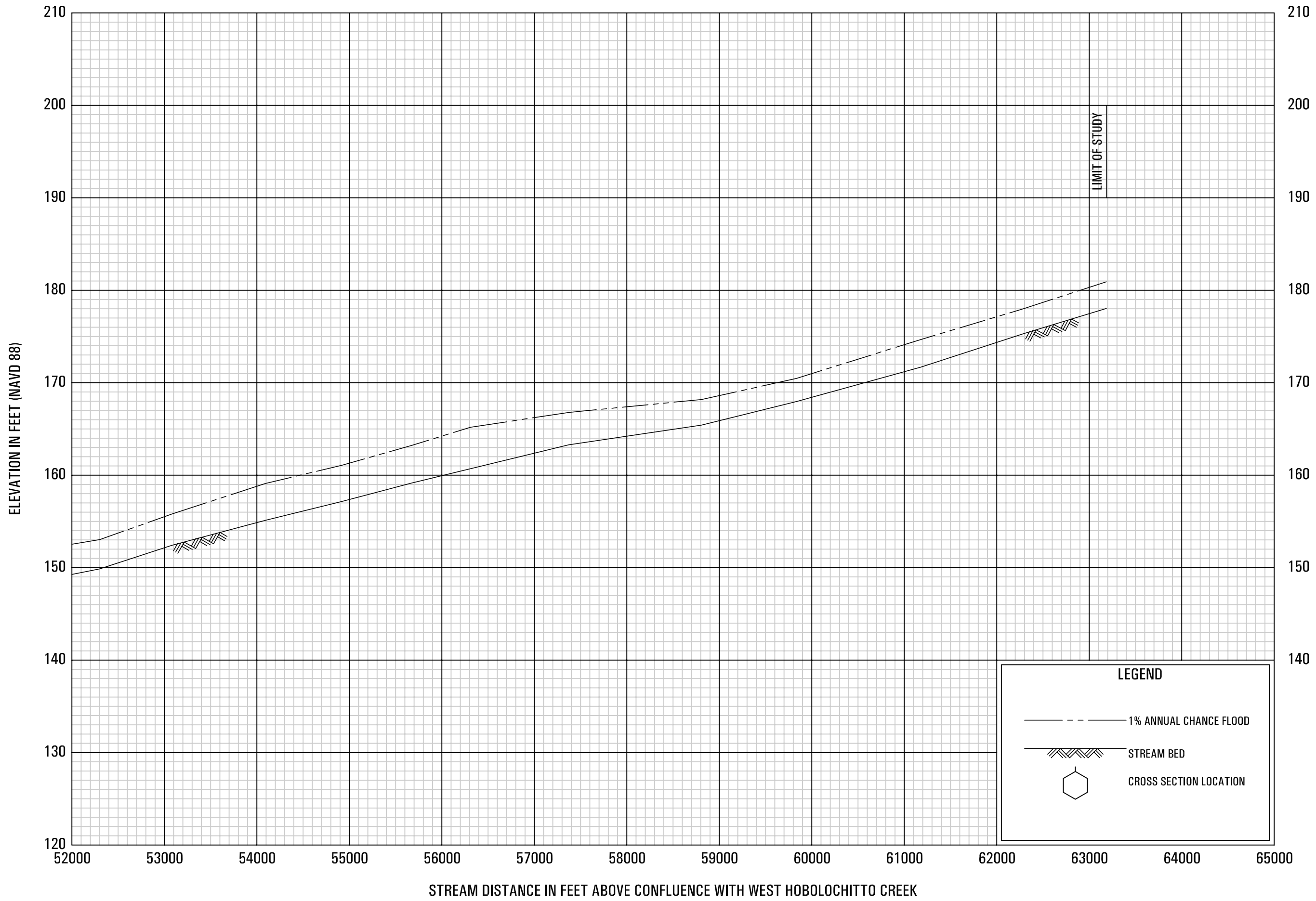
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS



**FLOOD PROFILES**

**MILL CREEK NO.3**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS



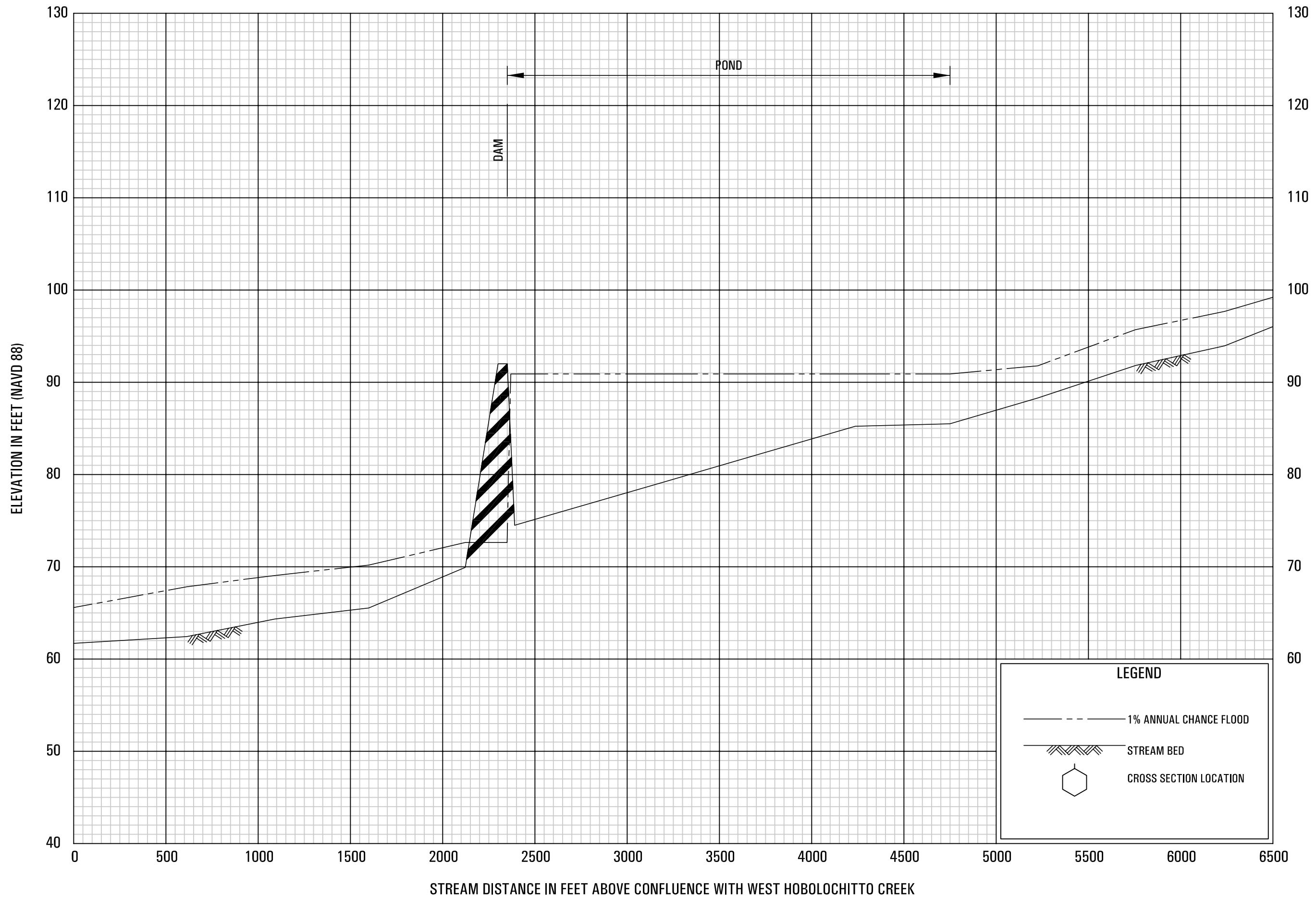
**LEGEND**

- 1% ANNUAL CHANCE FLOOD
- STREAM BED
- ⚡ CROSS SECTION LOCATION

**FLOOD PROFILES**

**MILL CREEK NO.3**

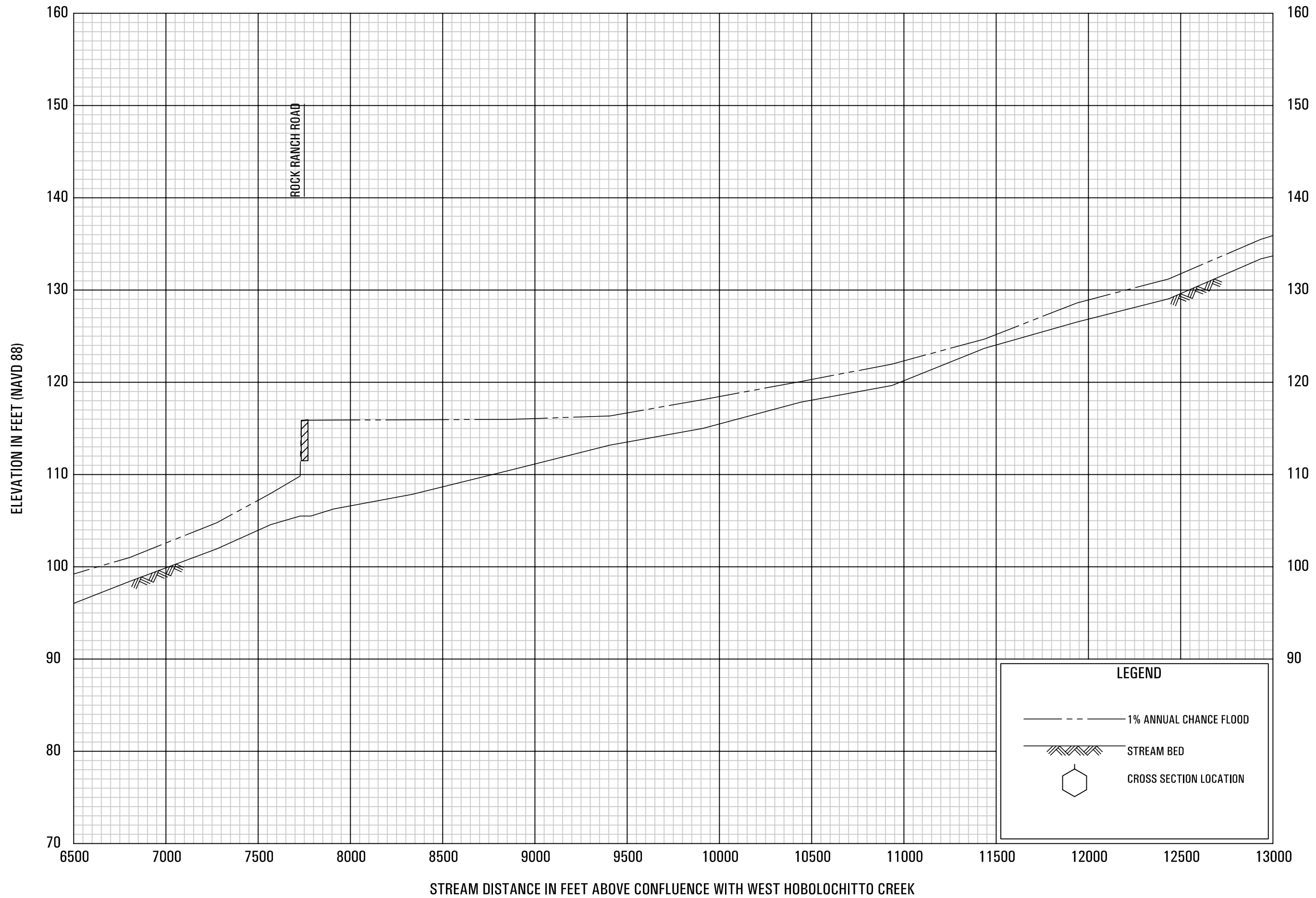
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS



**FLOOD PROFILES**

**MILL CREEK NO.4**

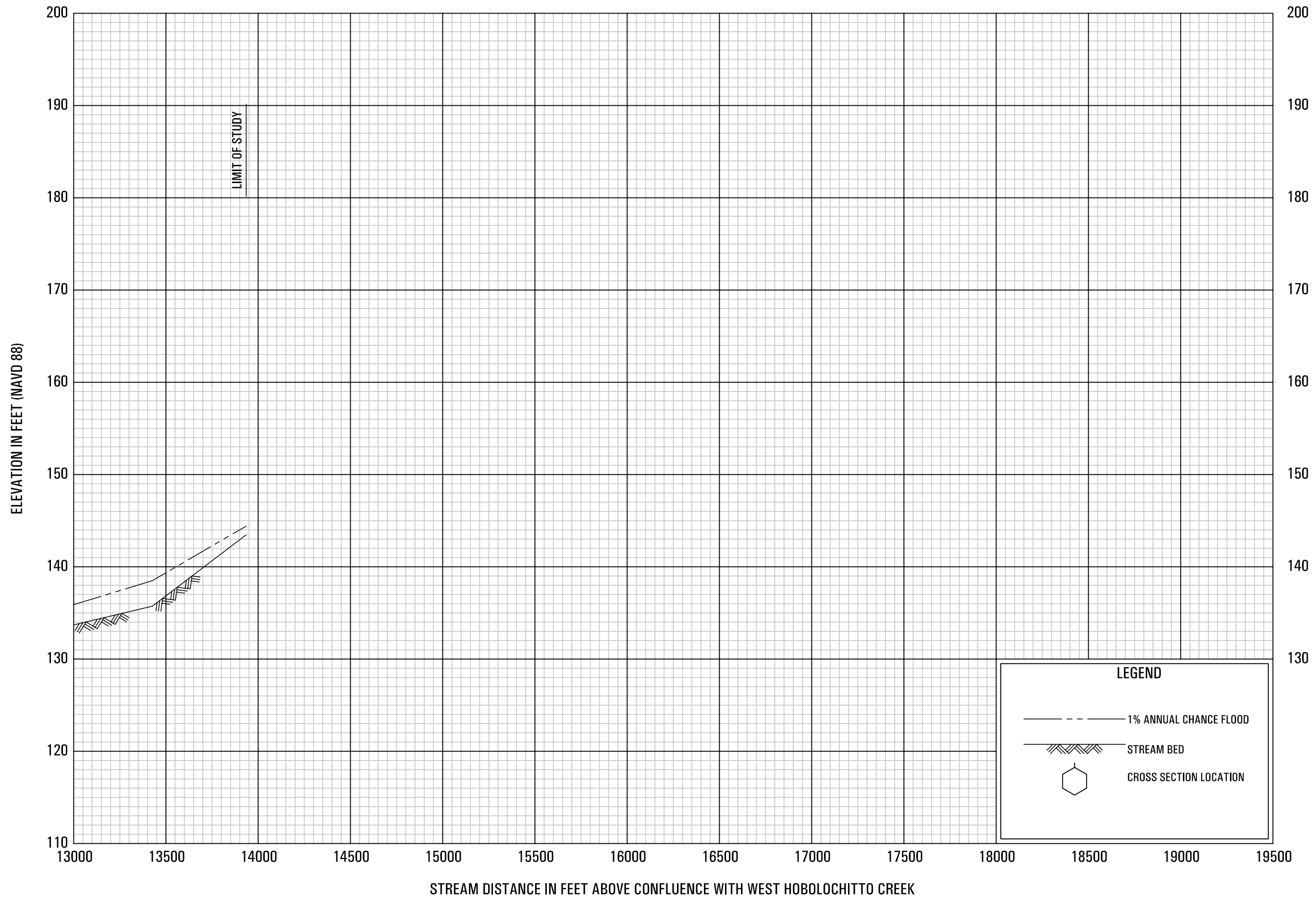
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS



**FLOOD PROFILES**

**MILL CREEK NO.4**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS



**FLOOD PROFILES**

**MILL CREEK NO.4**

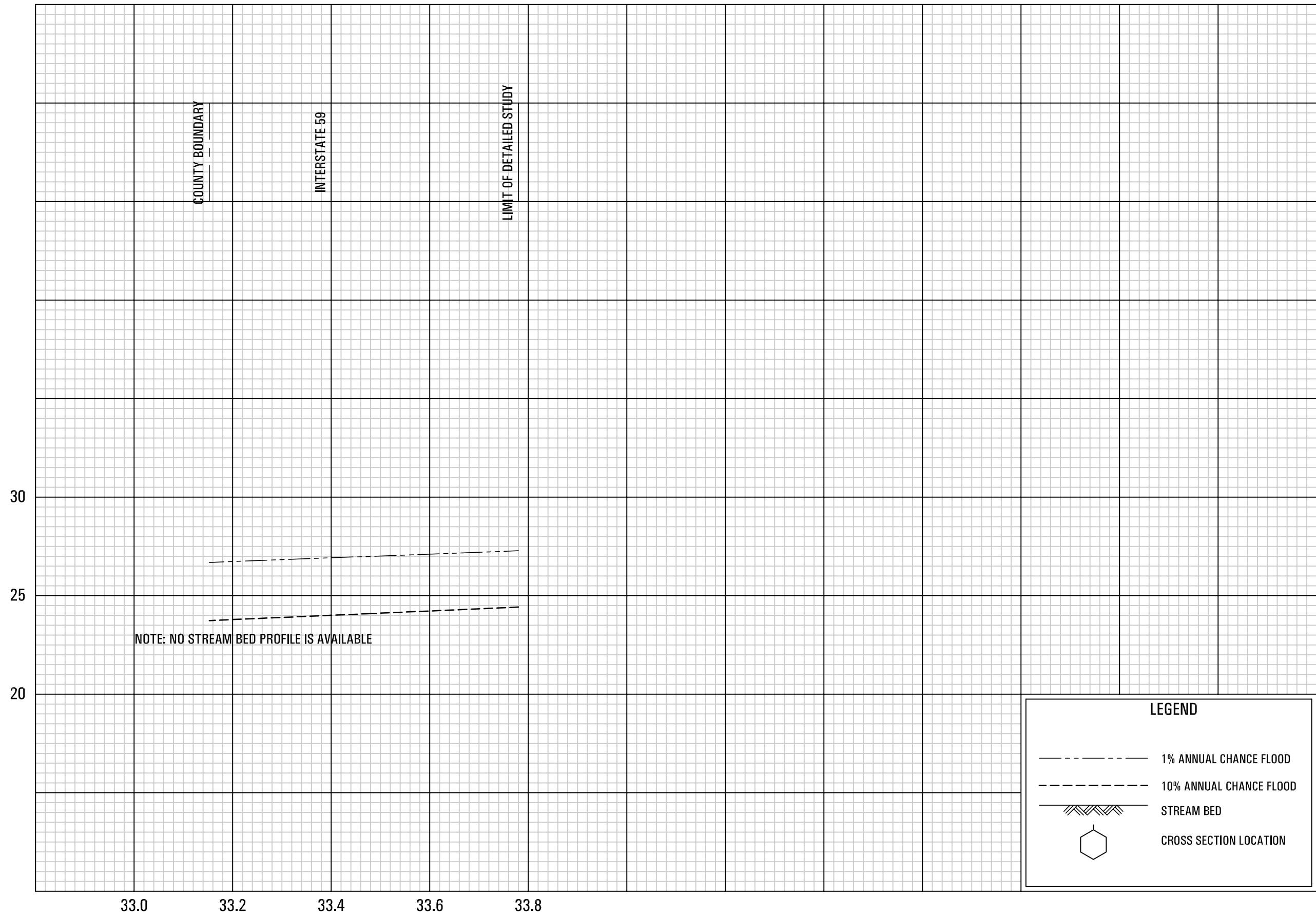
**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**PEARL RIVER COUNTY, MS**

**AND INCORPORATED AREAS**



ELEVATION IN FEET (NAVD 88)



33.0 33.2 33.4 33.6 33.8

STREAM DISTANCE IN MILES ABOUT MOUTH

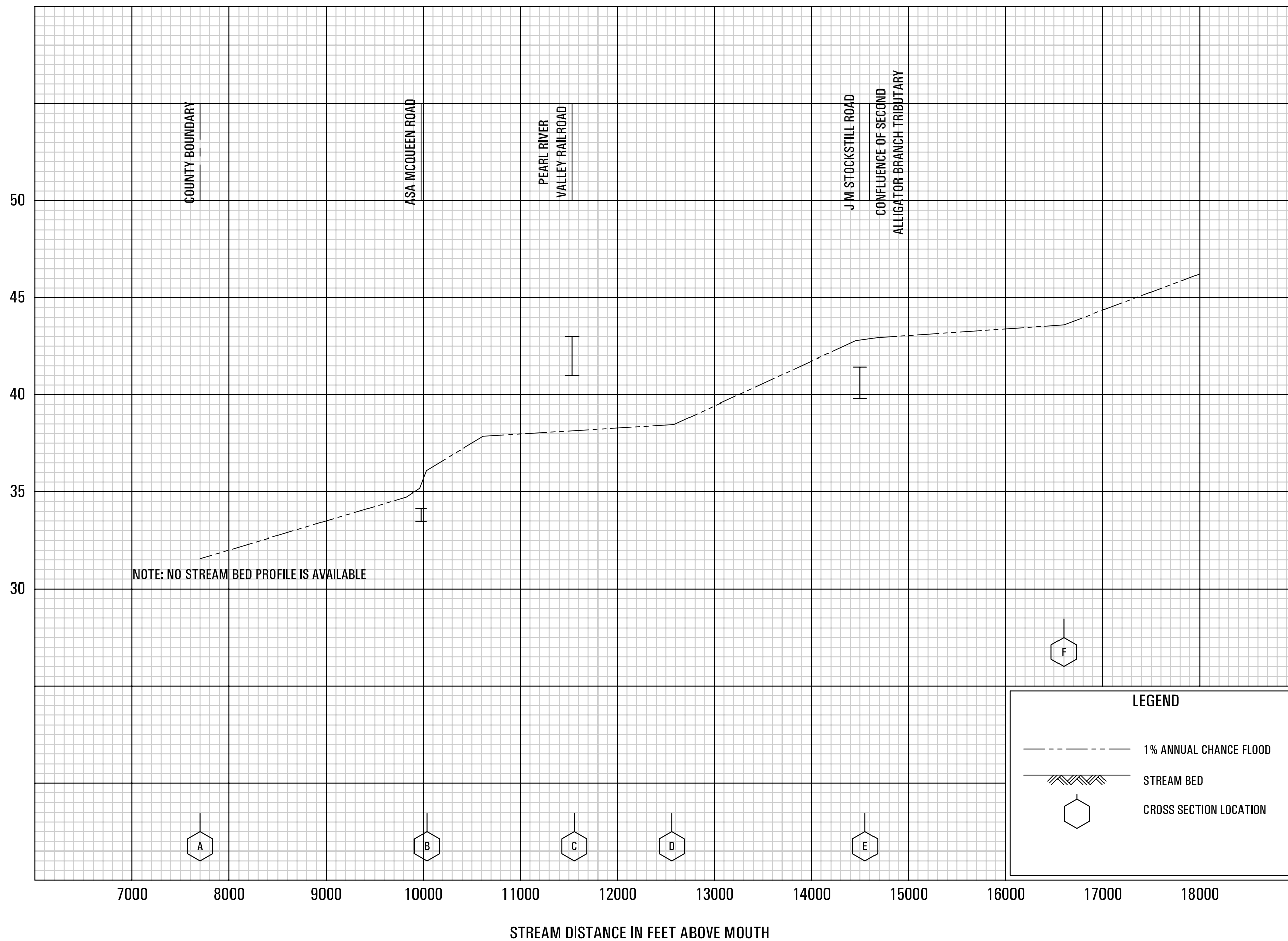
30  
25  
20

**FLOOD PROFILES**

PEARL RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
AND INCORPORATED AREAS

ELEVATION IN FEET (NAVD 88)

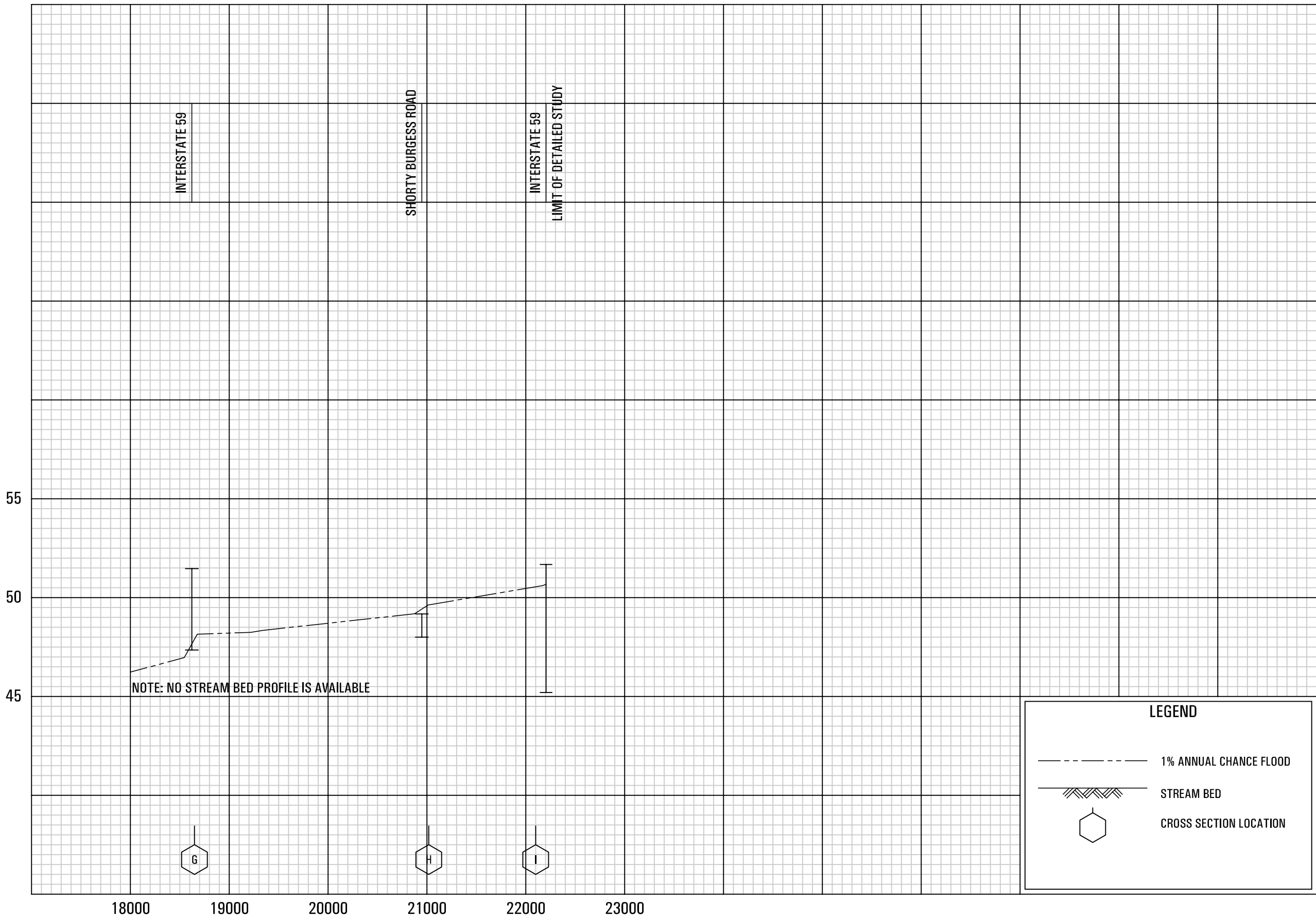


**FLOOD PROFILES**

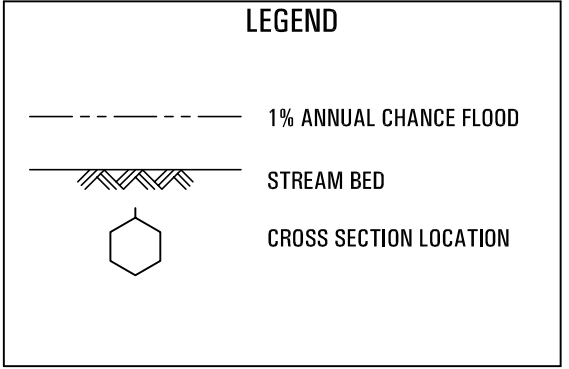
**SECOND ALLIGATOR BRANCH**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
AND INCORPORATED AREAS

ELEVATION IN FEET (NAVD 88)



NOTE: NO STREAM BED PROFILE IS AVAILABLE

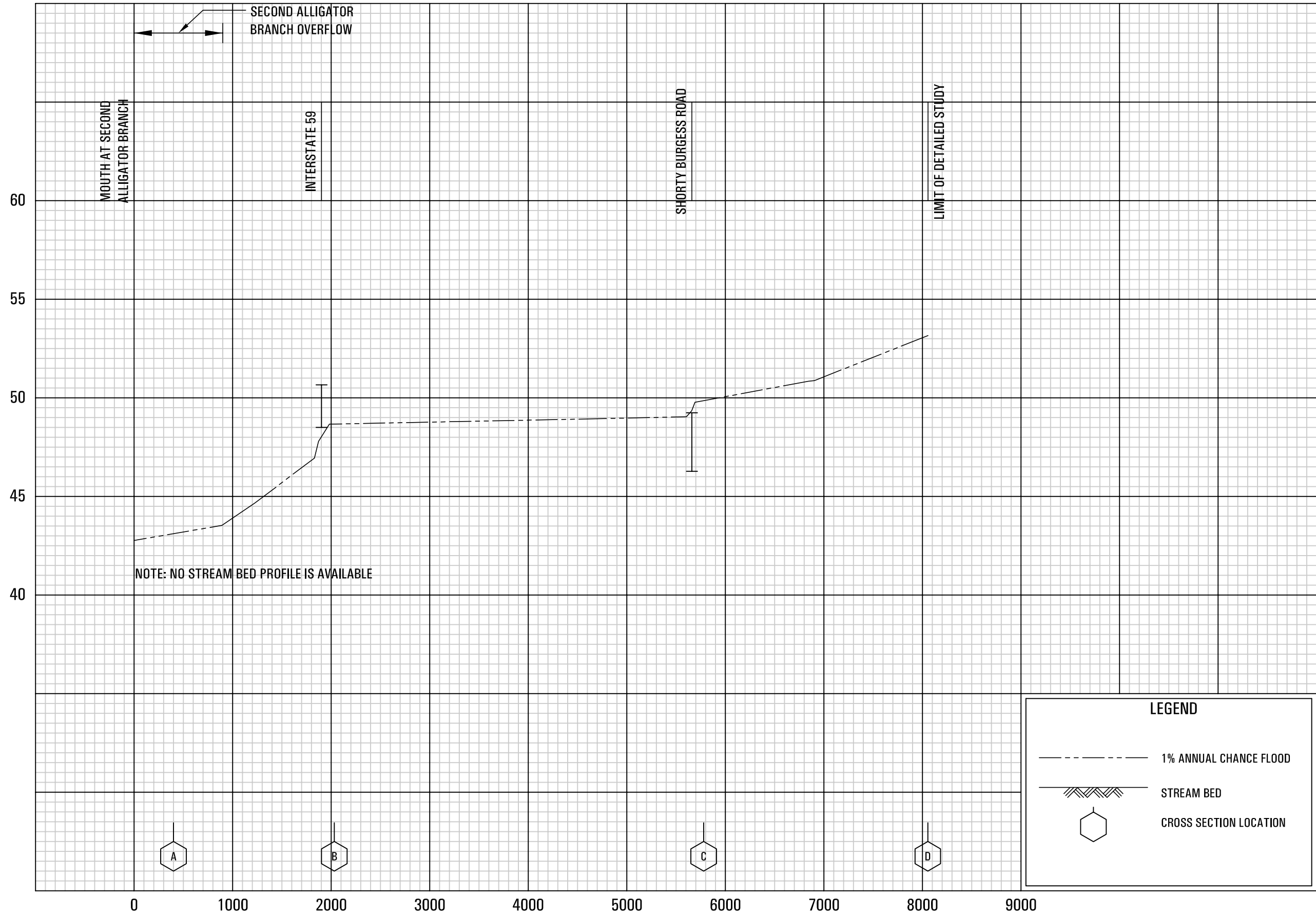


**FLOOD PROFILES**

**SECOND ALLIGATOR BRANCH**

**FEDERAL EMERGENCY MANAGEMENT AGENCY  
PEARL RIVER COUNTY, MS  
AND INCORPORATED AREAS**

ELEVATION IN FEET (NAVD 88)



0

1000

2000

3000

4000

5000

6000

7000

8000

9000

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH SECOND ALLIGATOR BRANCH

60

55

50

45

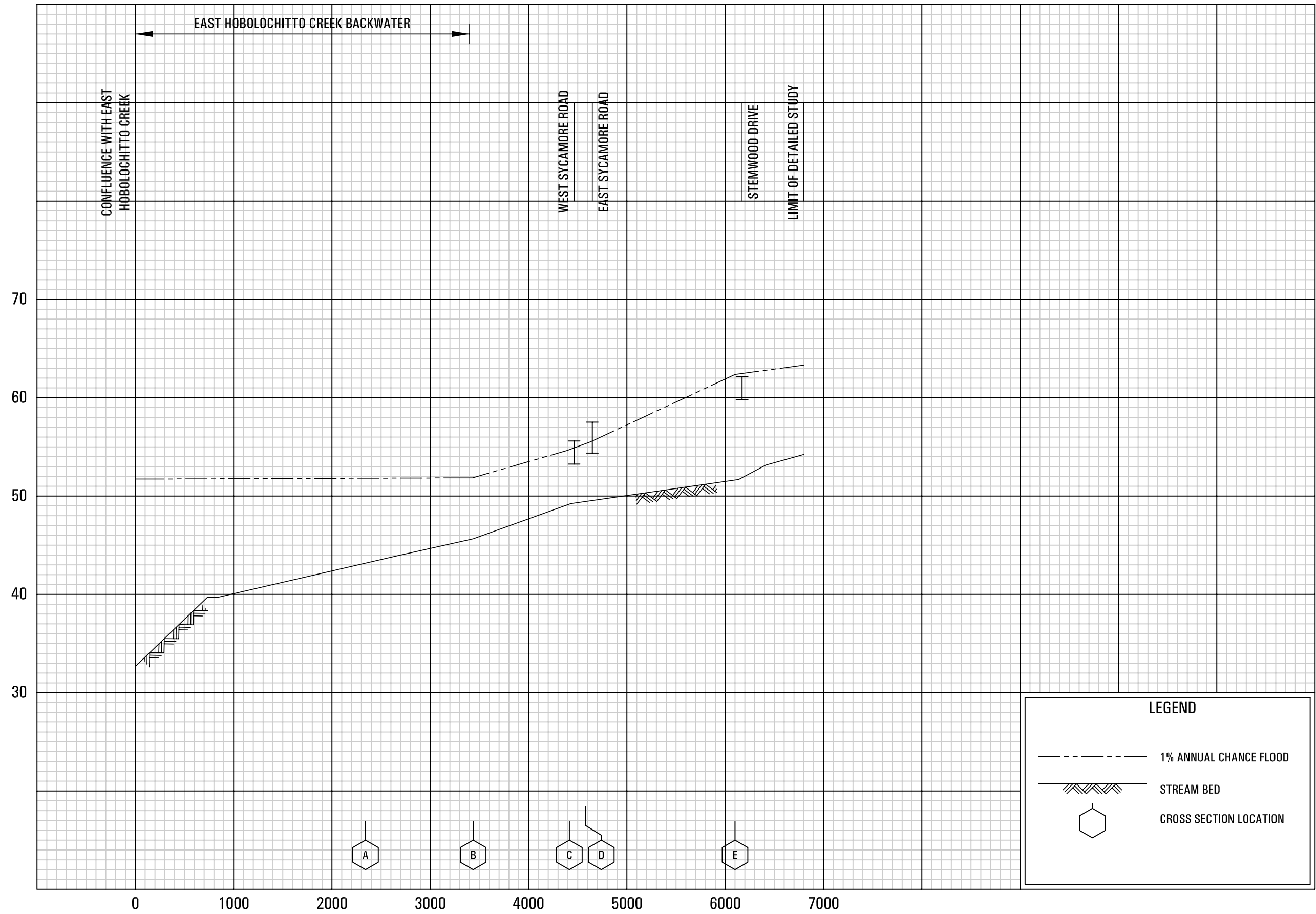
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### FLOOD PROFILES

SECOND ALLIGATOR BRANCH TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY  
PEARL RIVER COUNTY, MS  
AND INCORPORATED AREAS

ELEVATION IN FEET (NAVD 88)



STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH EAST HOBOLOCHITTO CREEK

70

60

50

40

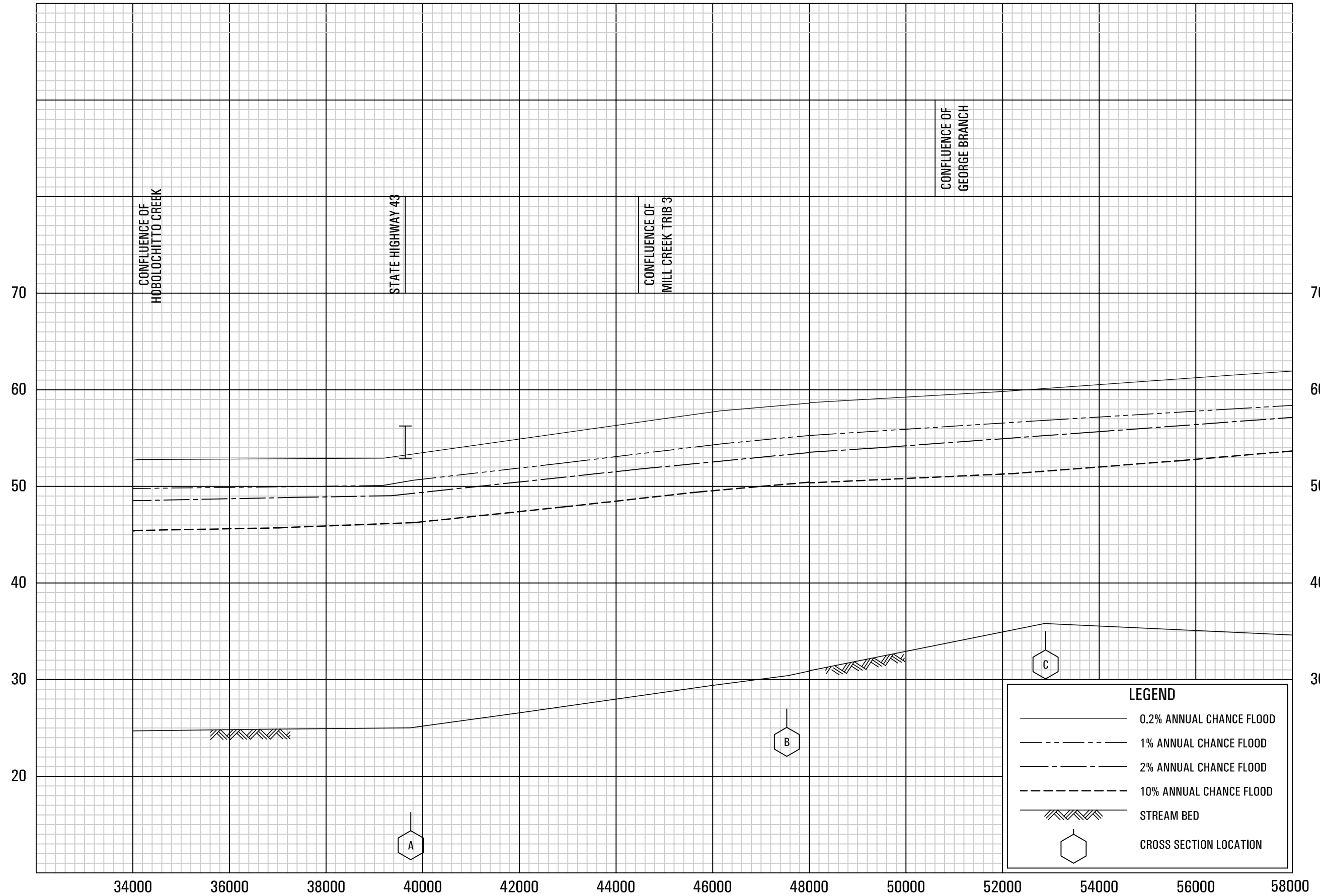
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**FLOOD PROFILES**

THIGPEN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS

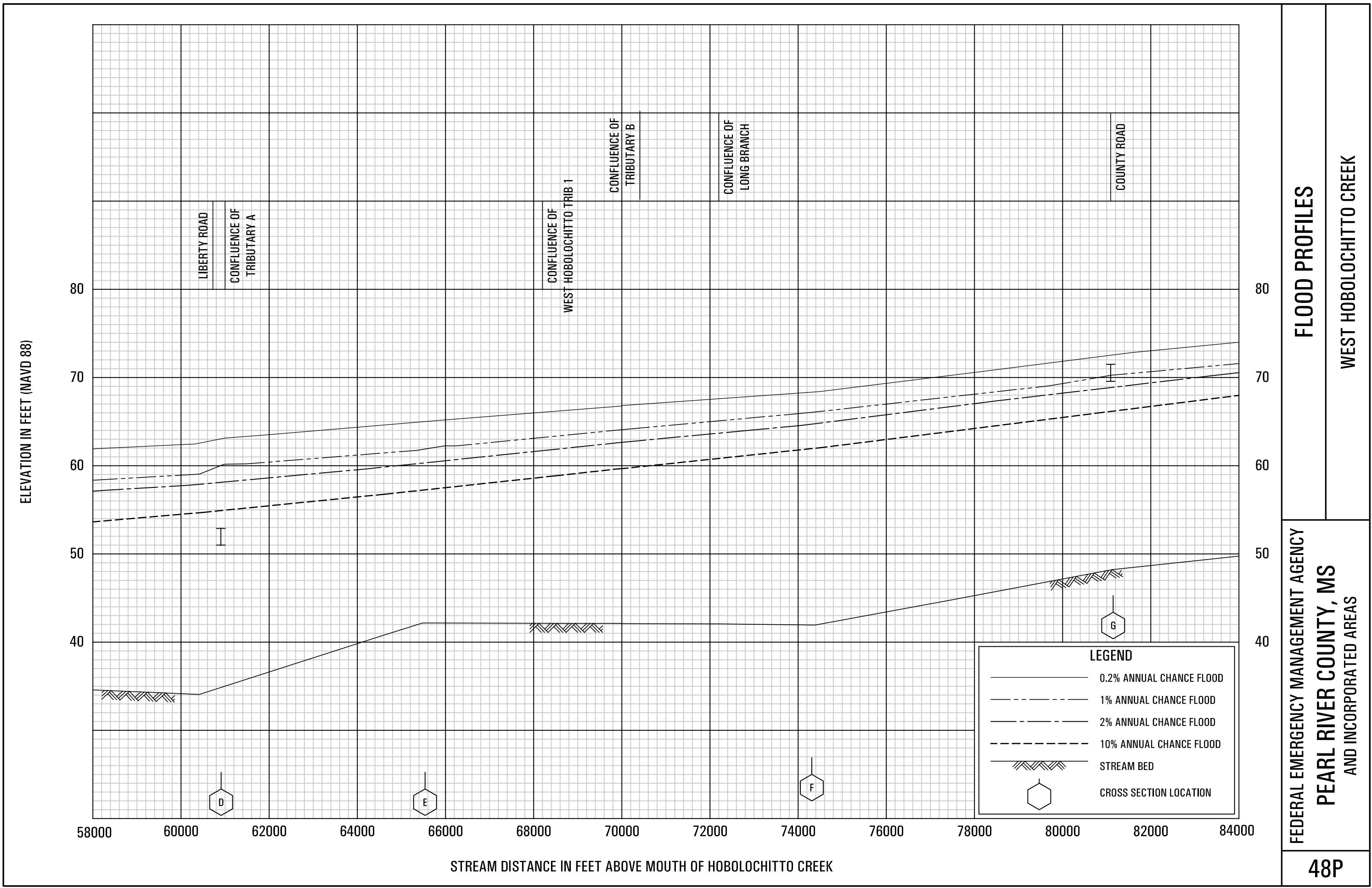
ELEVATION IN FEET (NAVD 88)

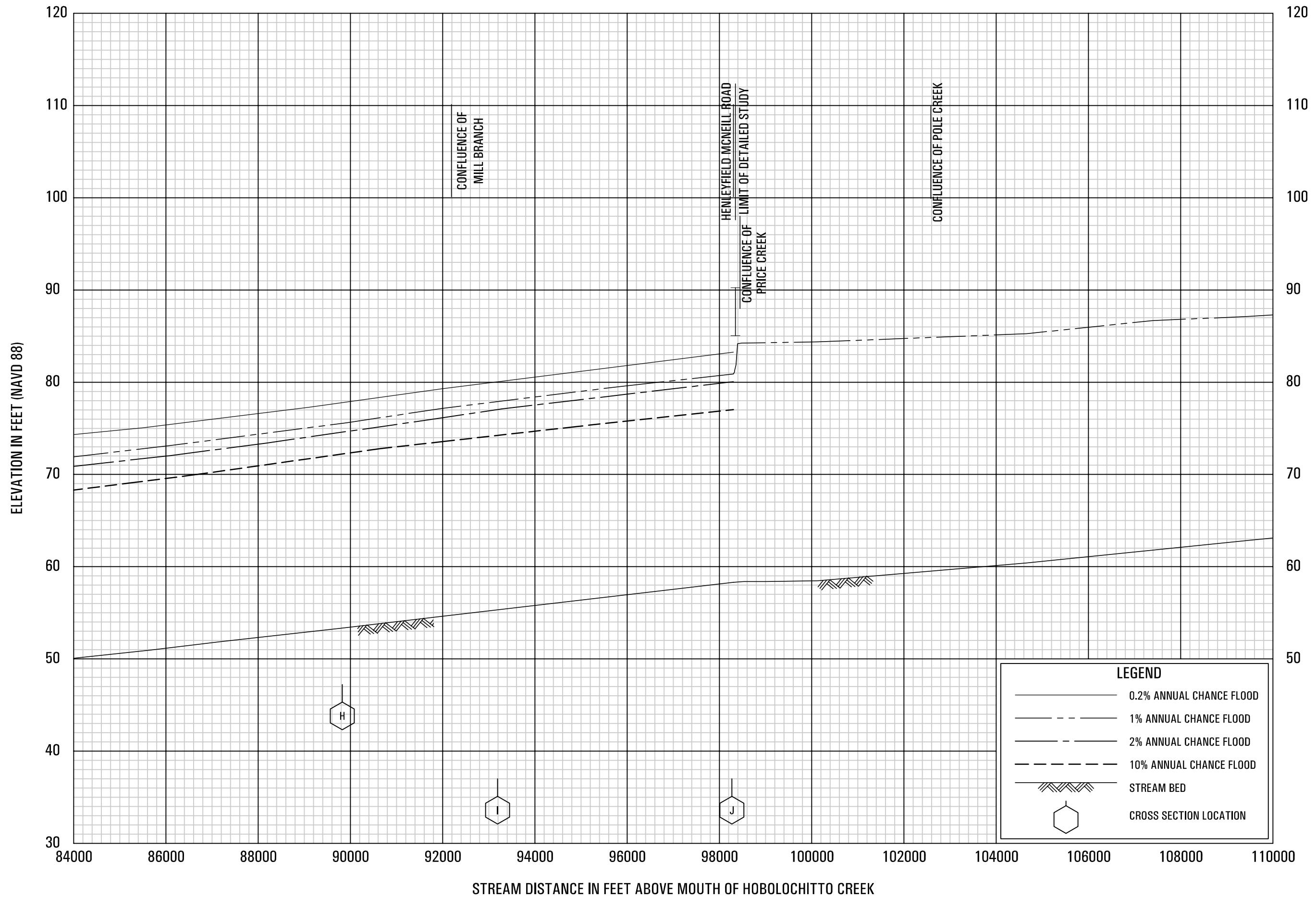


**FLOOD PROFILES**

WEST HOBOLOCHITTO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
AND INCORPORATED AREAS

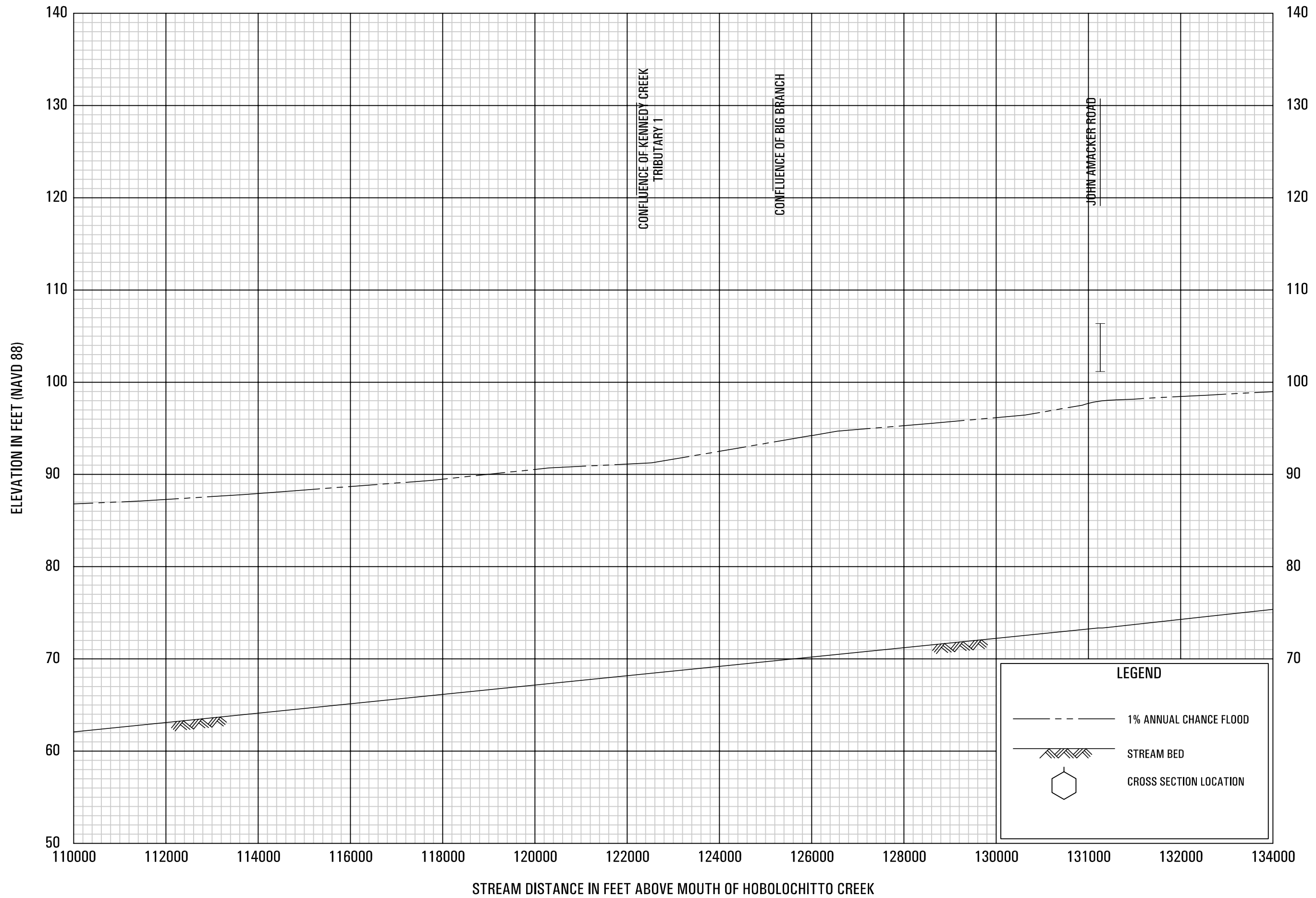




**FLOOD PROFILES**  
WEST HOBOLOCHITTO CREEK

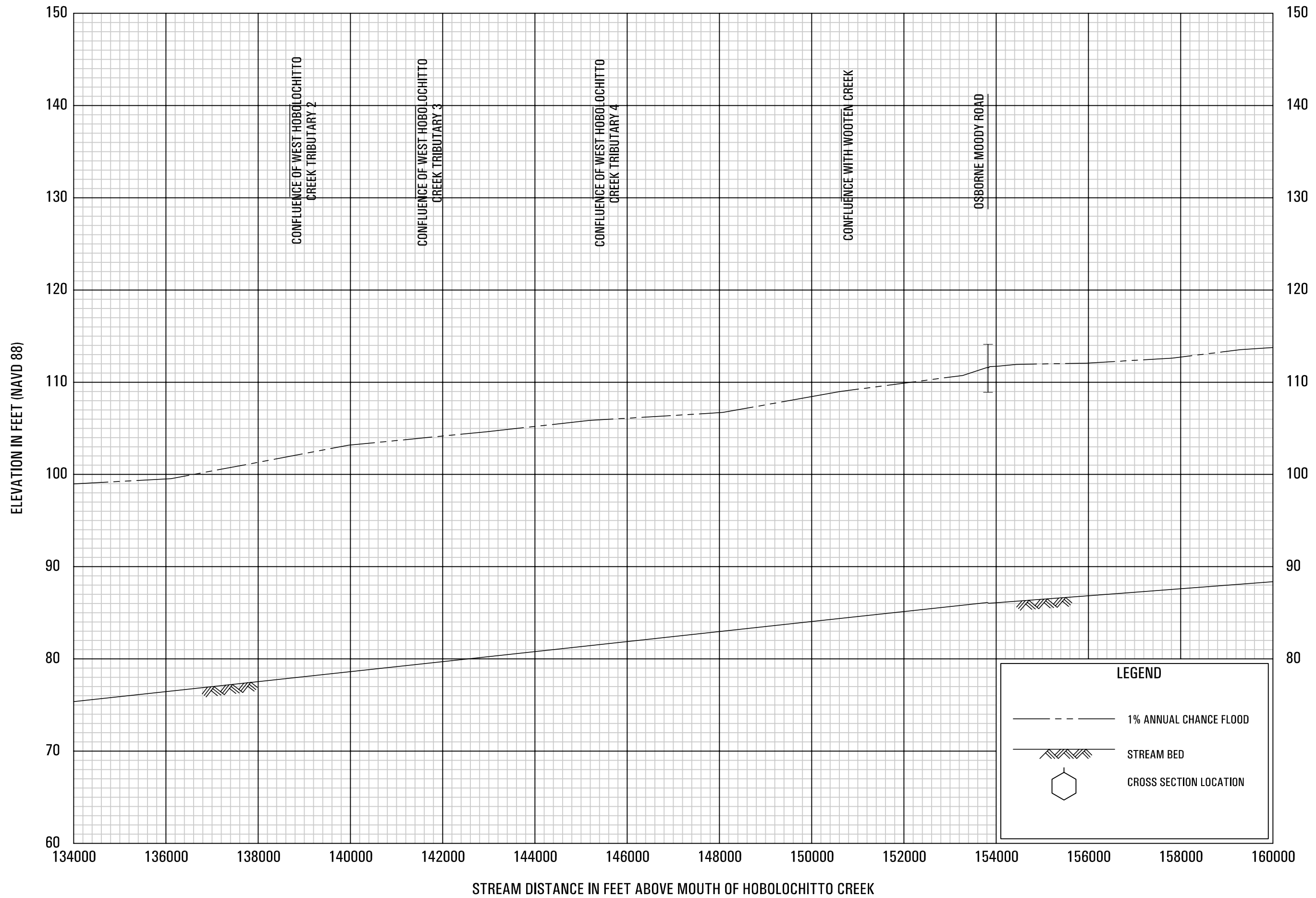
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS,**  
AND INCORPORATED AREAS





**FLOOD PROFILES**  
**WEST HOBOLOCHITTO CREEK**

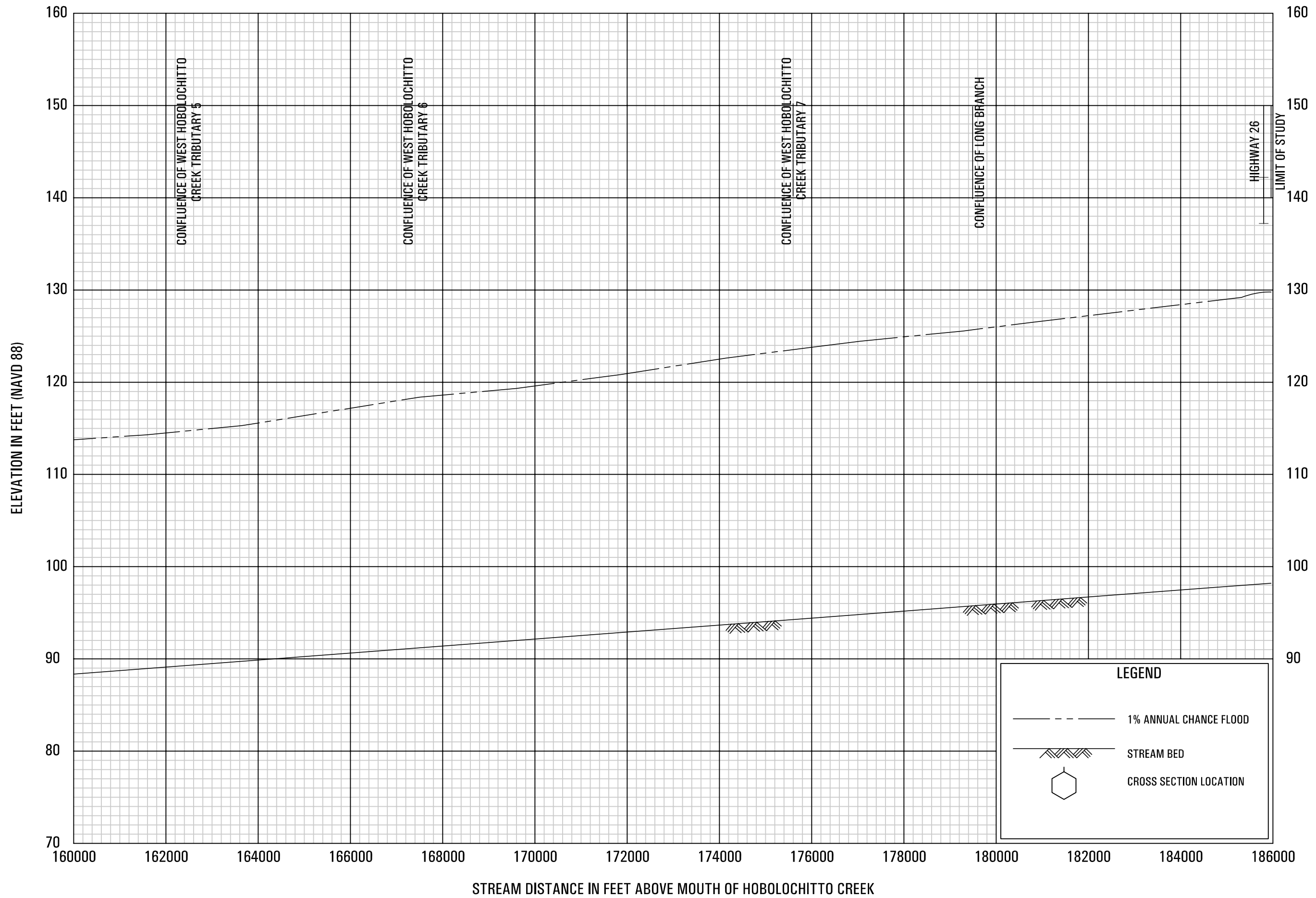
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS,**  
 AND INCORPORATED AREAS



**FLOOD PROFILES**

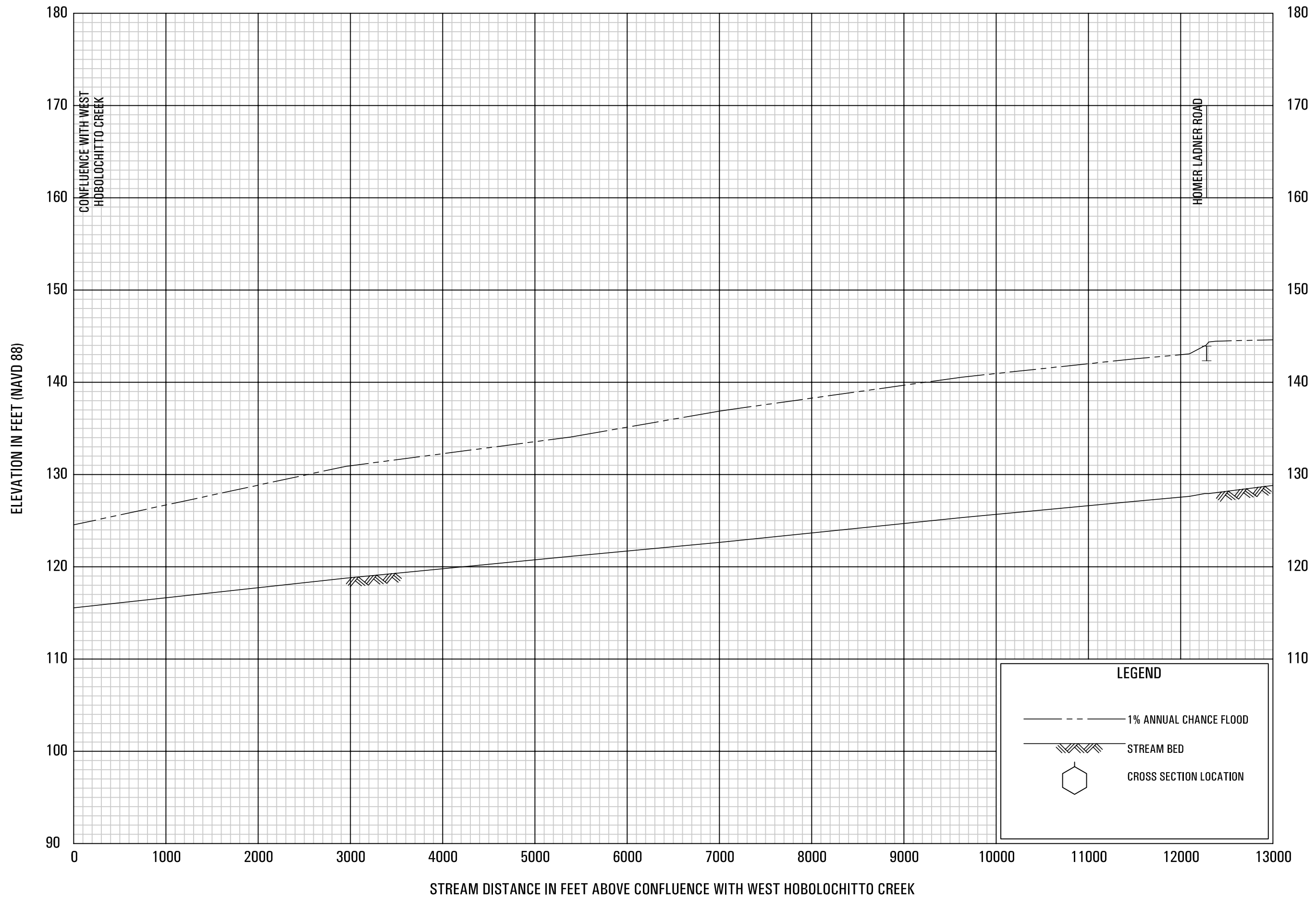
WEST HOBOLOCHITTO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS,**  
 AND INCORPORATED AREAS



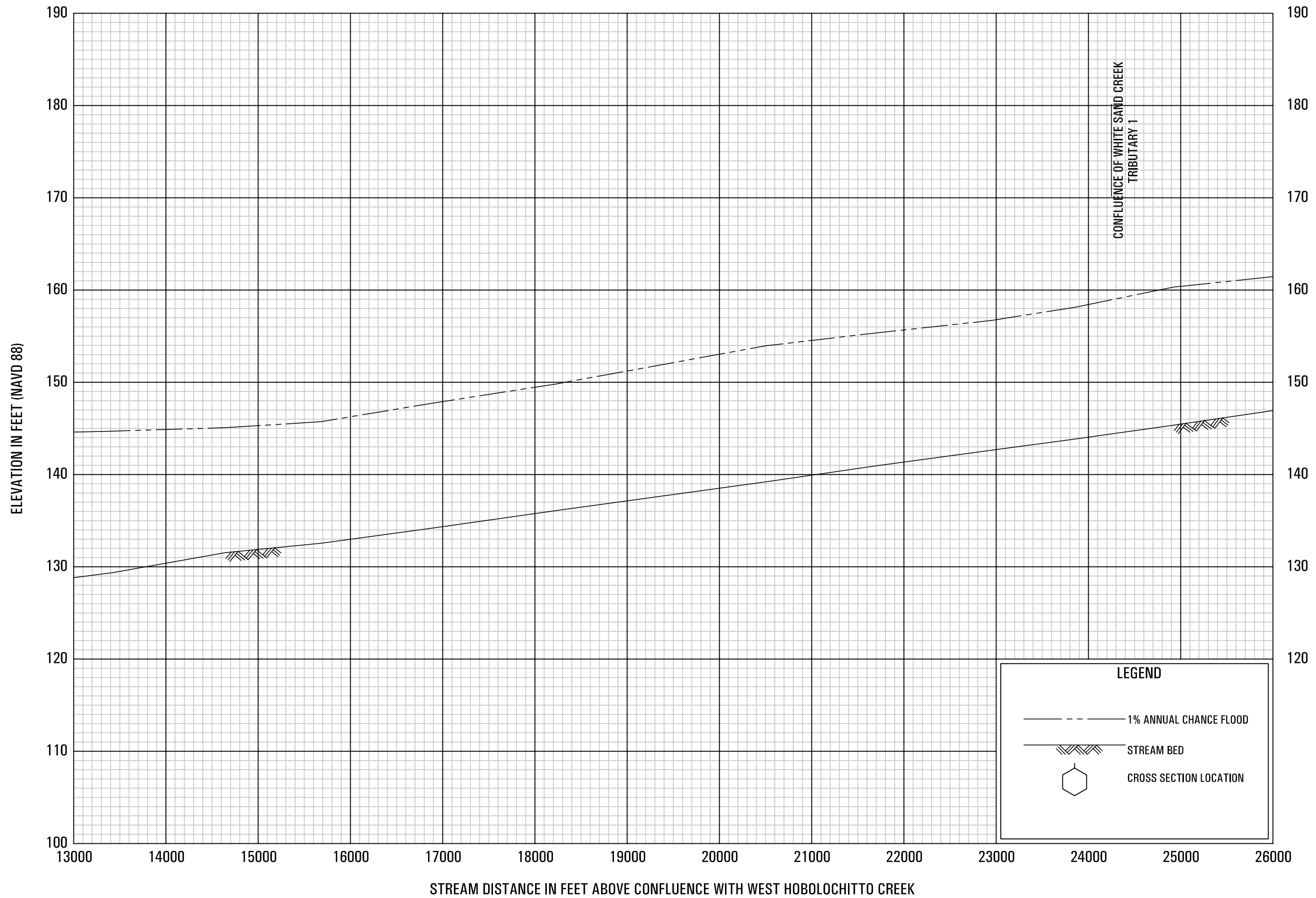
**FLOOD PROFILES**  
**WEST HOBOLOCHITTO CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS,**  
 AND INCORPORATED AREAS



**FLOOD PROFILES**  
**WHITE SAND CREEK**

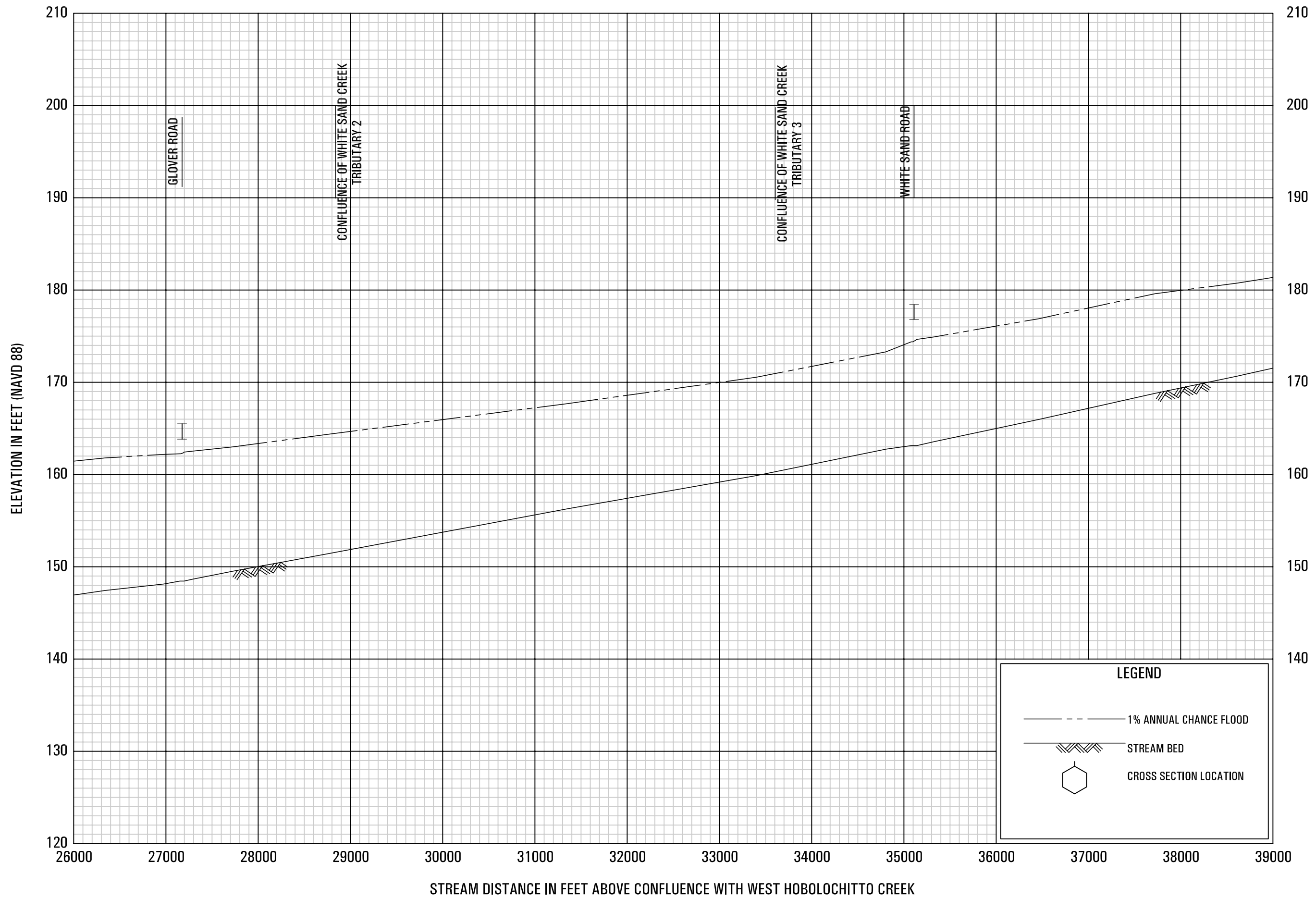
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS



CONFLUENCE OF WHITE SAND CREEK  
TRIBUTARY 1

**FLOOD PROFILES**  
**WHITE SAND CREEK**

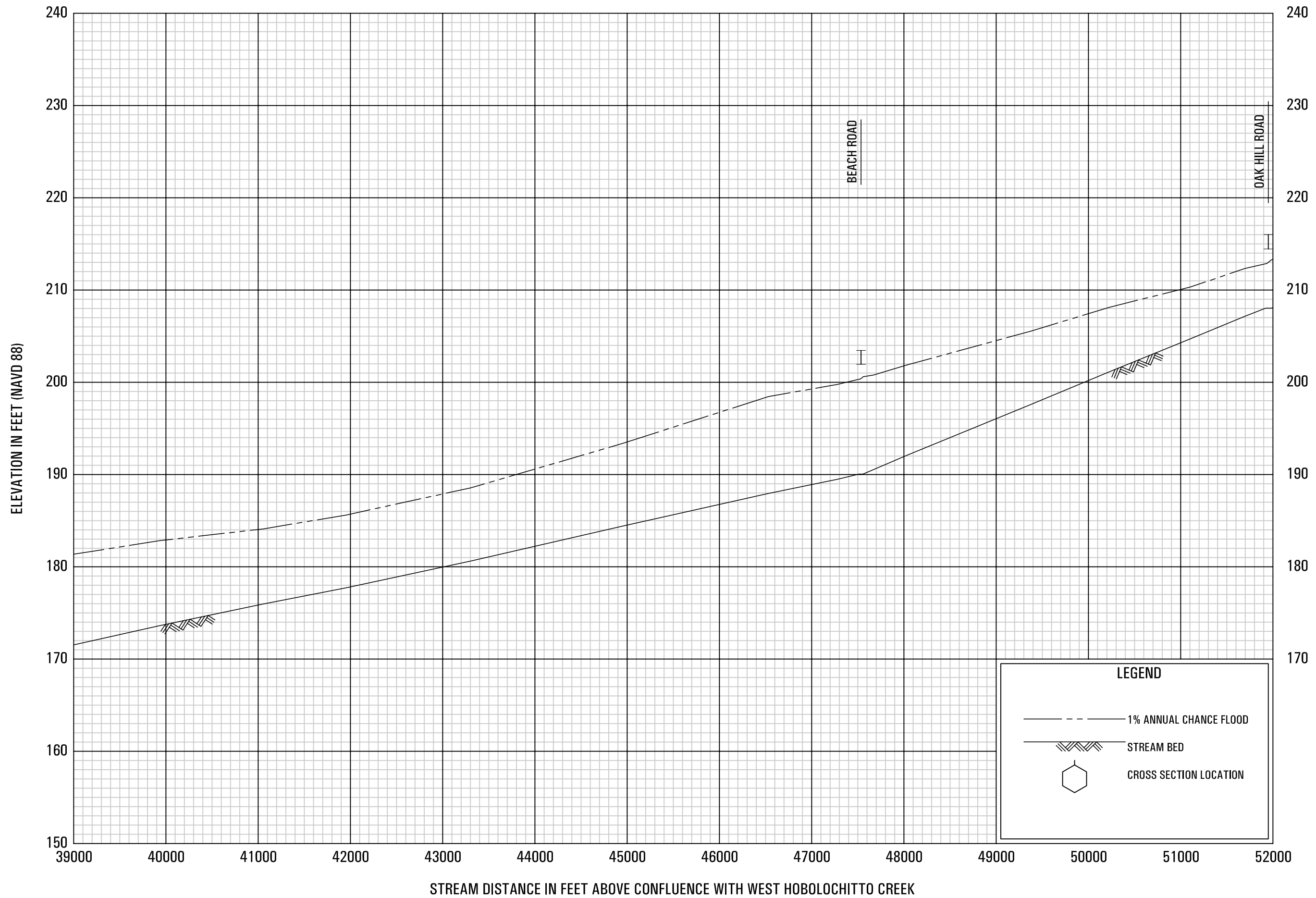
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
AND INCORPORATED AREAS



**FLOOD PROFILES**

WHITE SAND CREEK

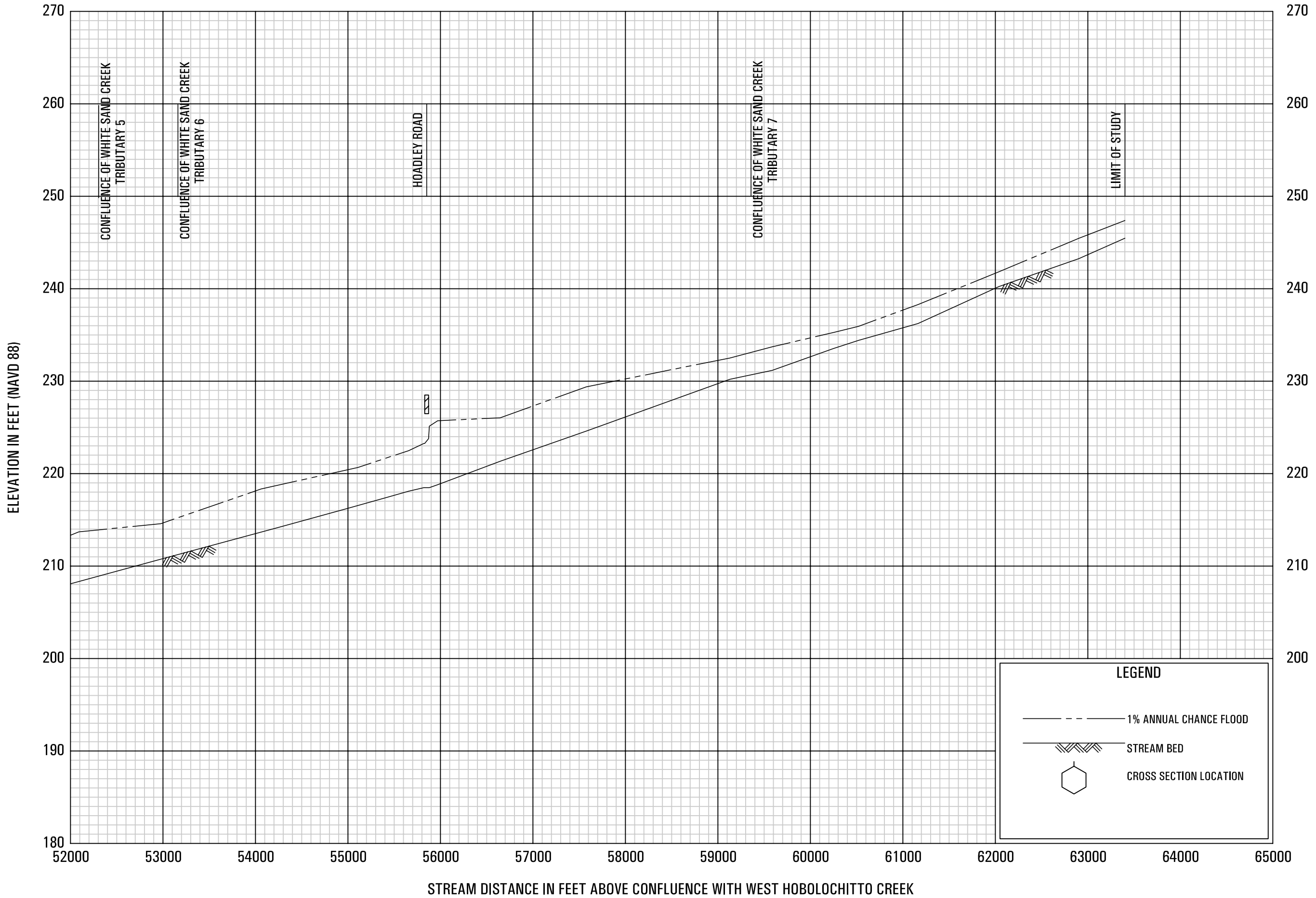
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS



**FLOOD PROFILES**

**WHITE SAND CREEK**

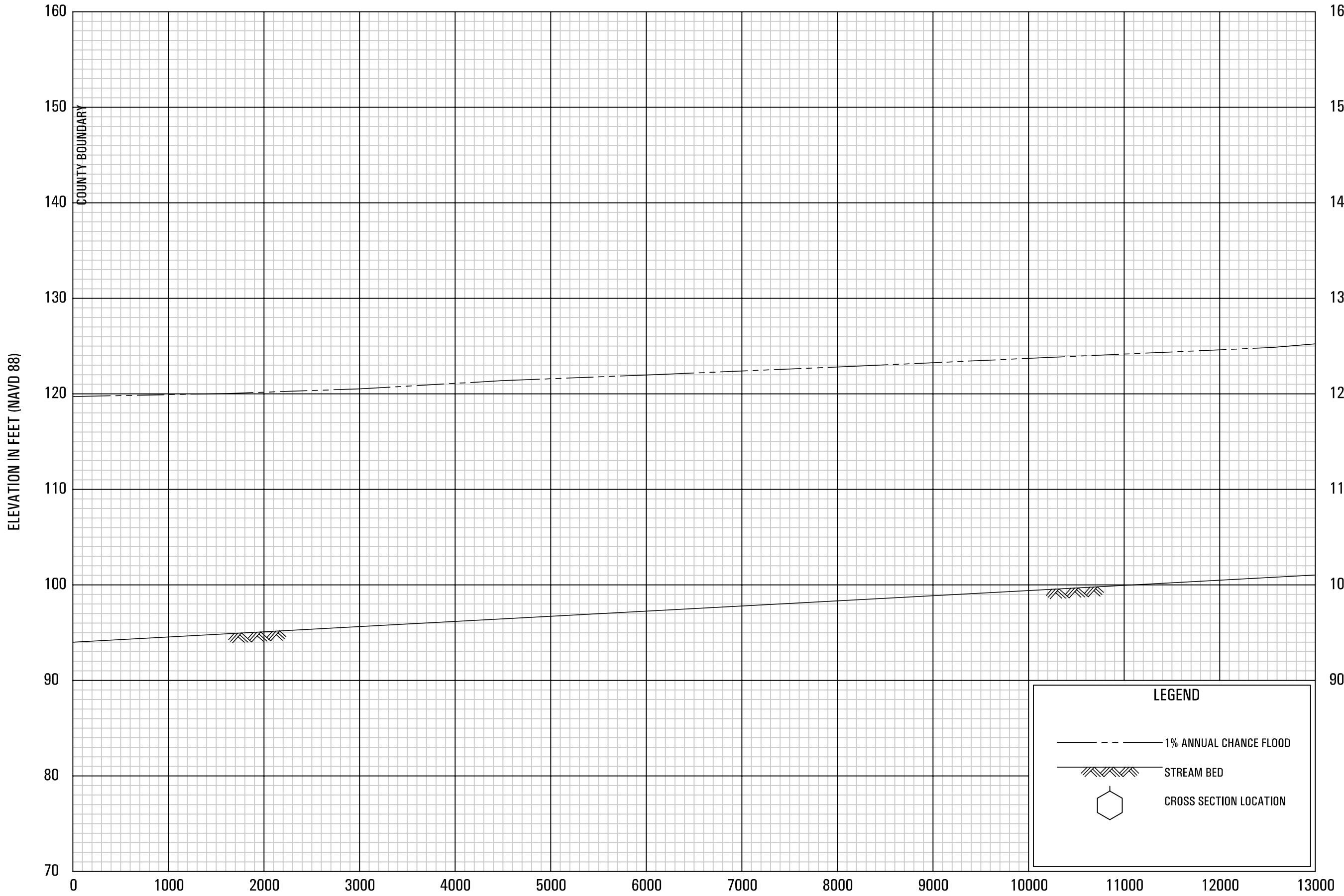
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS



**FLOOD PROFILES**  
**WHITE SAND CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
AND INCORPORATED AREAS





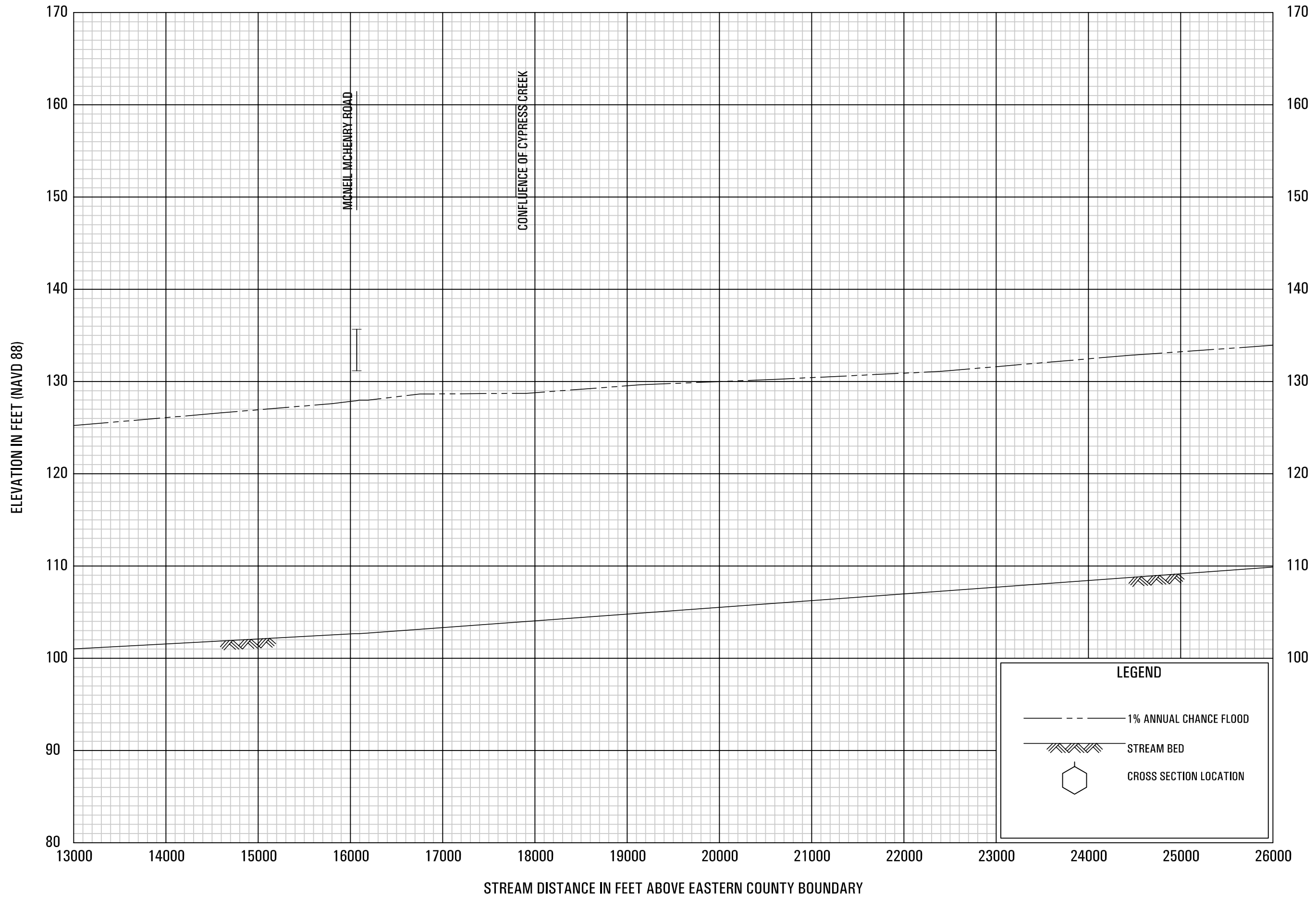
**LEGEND**

- 1% ANNUAL CHANCE FLOOD
- STREAM BED
- ⚡ CROSS SECTION LOCATION

**FLOOD PROFILES**

WOLF RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS

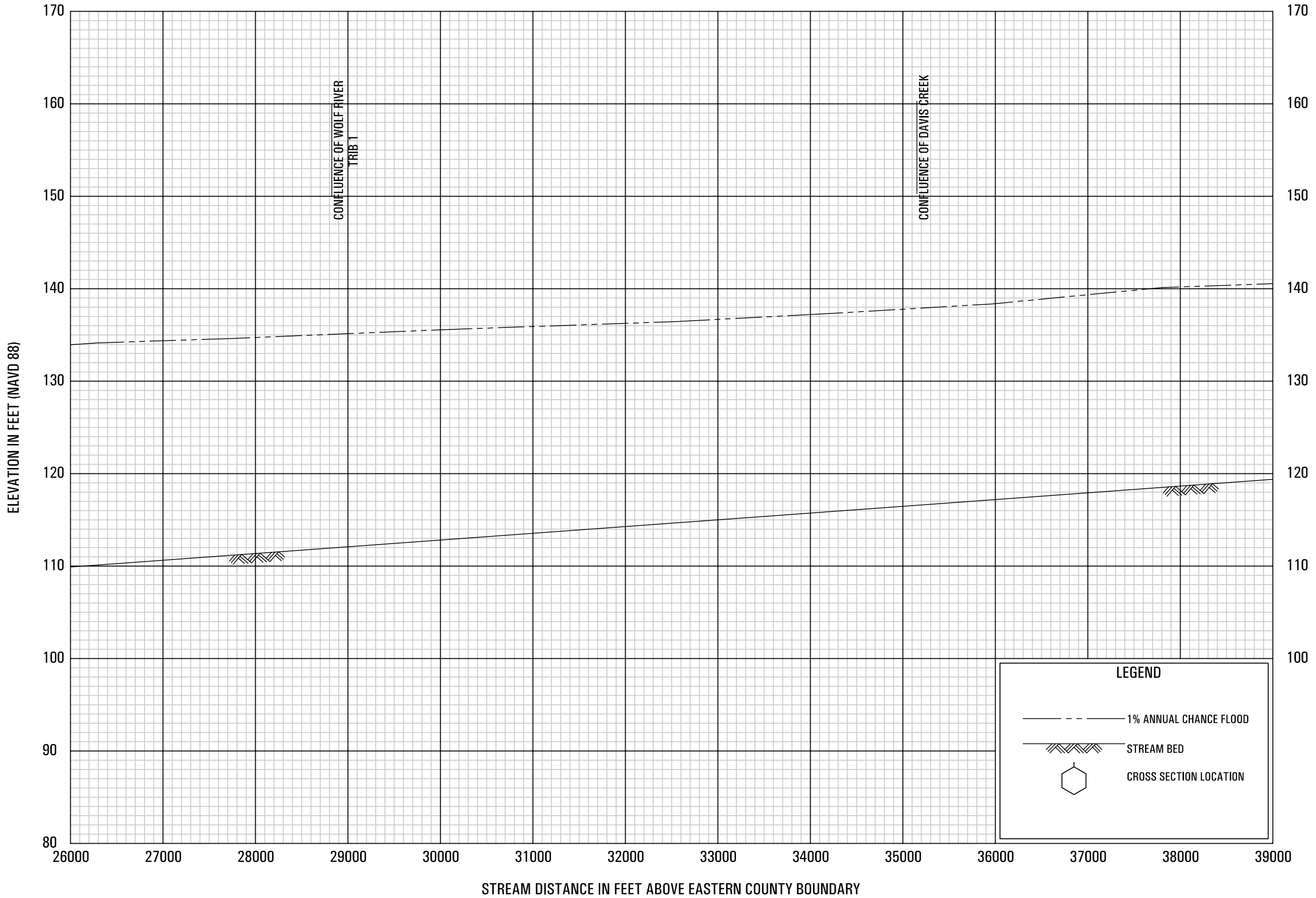


**FLOOD PROFILES**

**WOLF RIVER**

FEDERAL EMERGENCY MANAGEMENT AGENCY

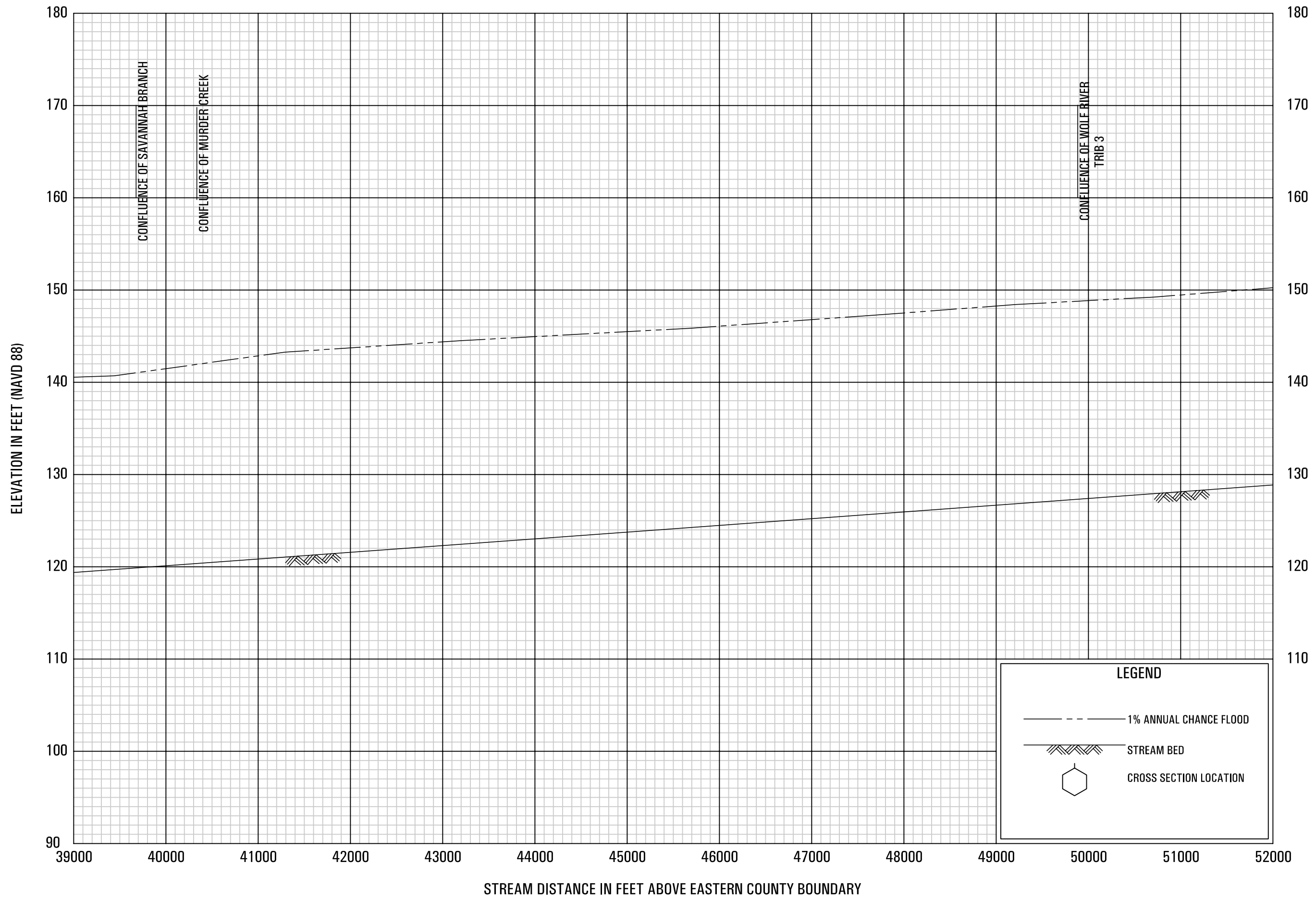
**PEARL RIVER COUNTY, MS  
AND INCORPORATED AREAS**



**FLOOD PROFILES**

**WOLF RIVER**

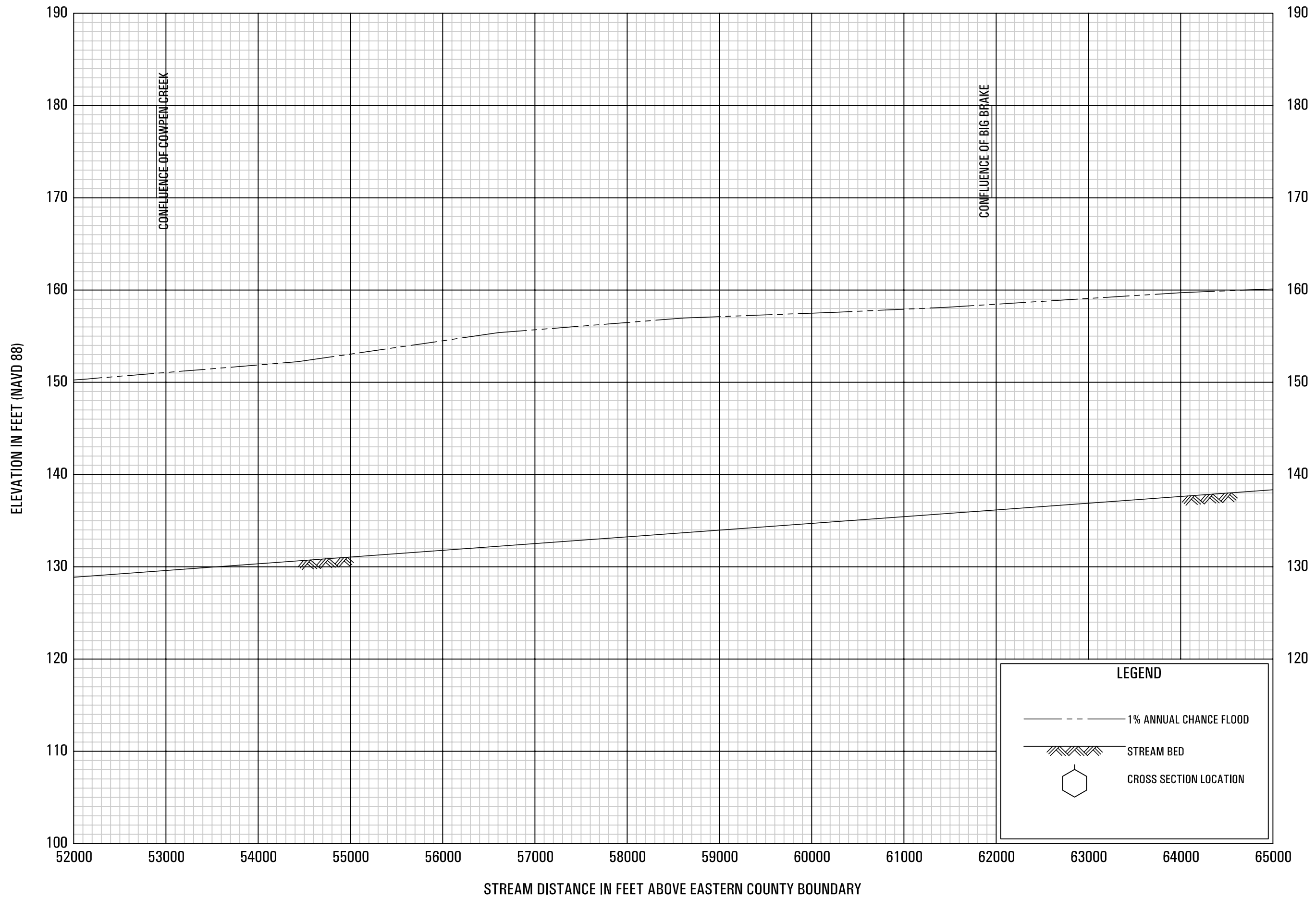
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS



**FLOOD PROFILES**

**WOLF RIVER**

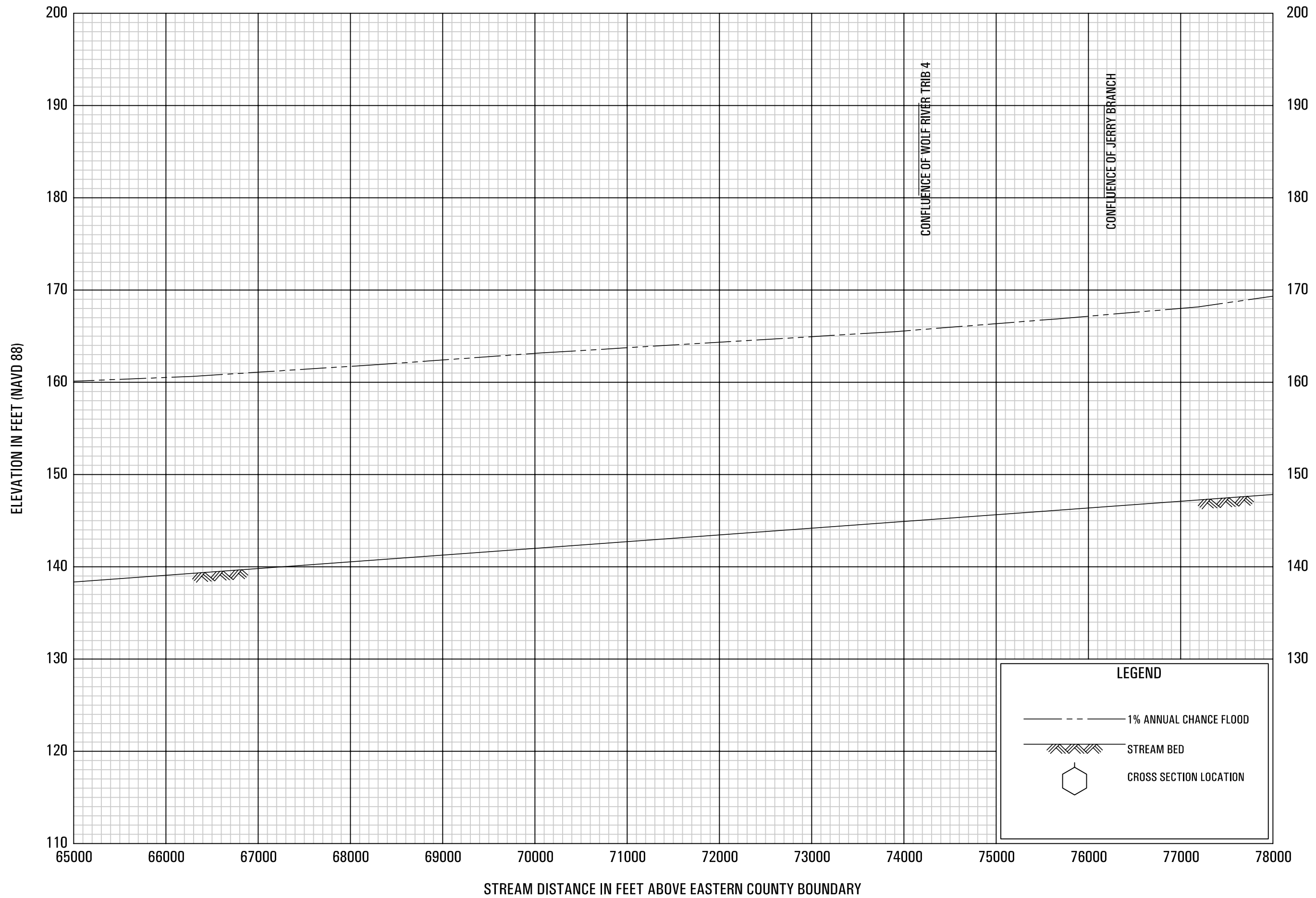
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PEARL RIVER COUNTY, MS**  
 AND INCORPORATED AREAS



**FLOOD PROFILES**

**WOLF RIVER**

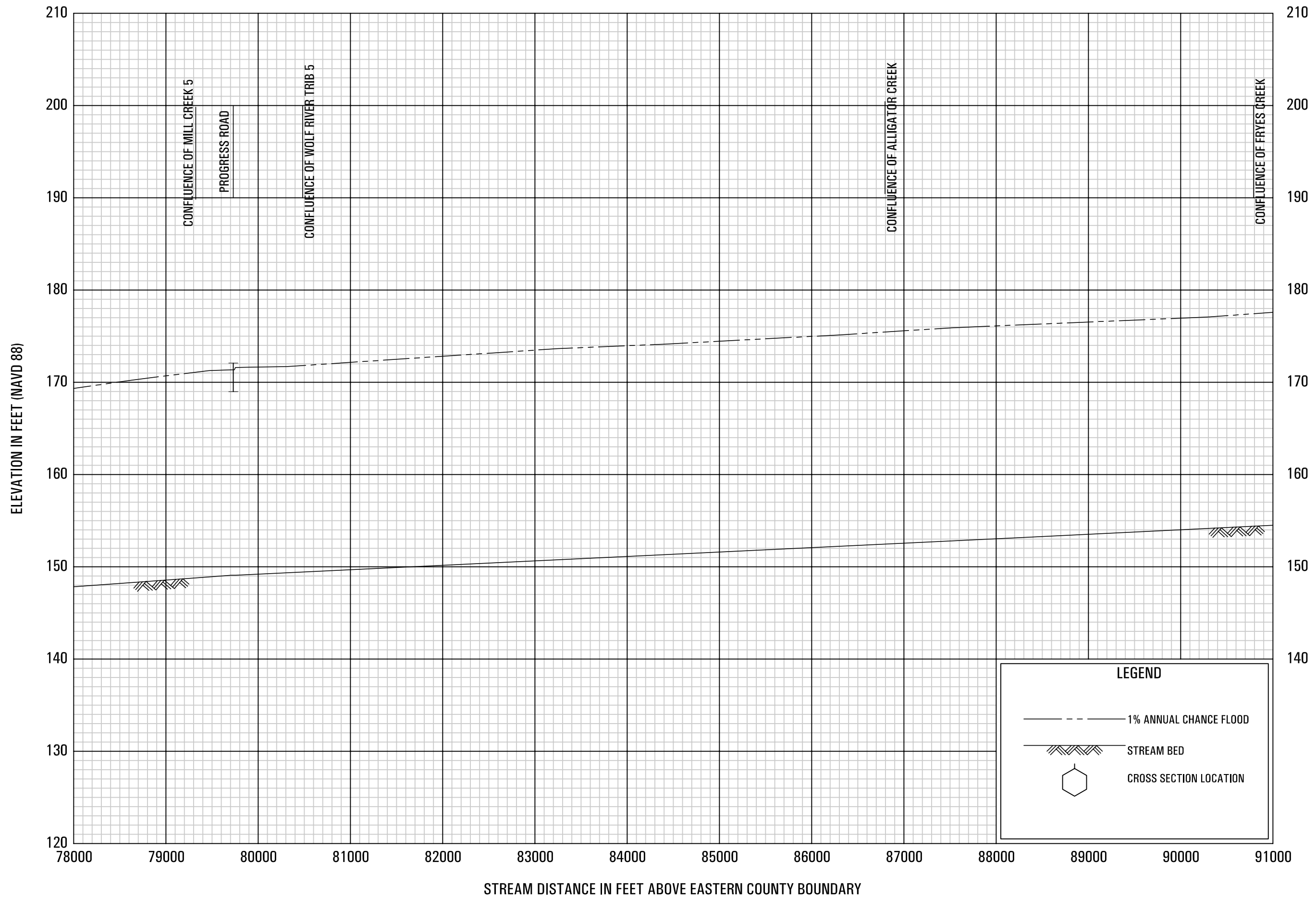
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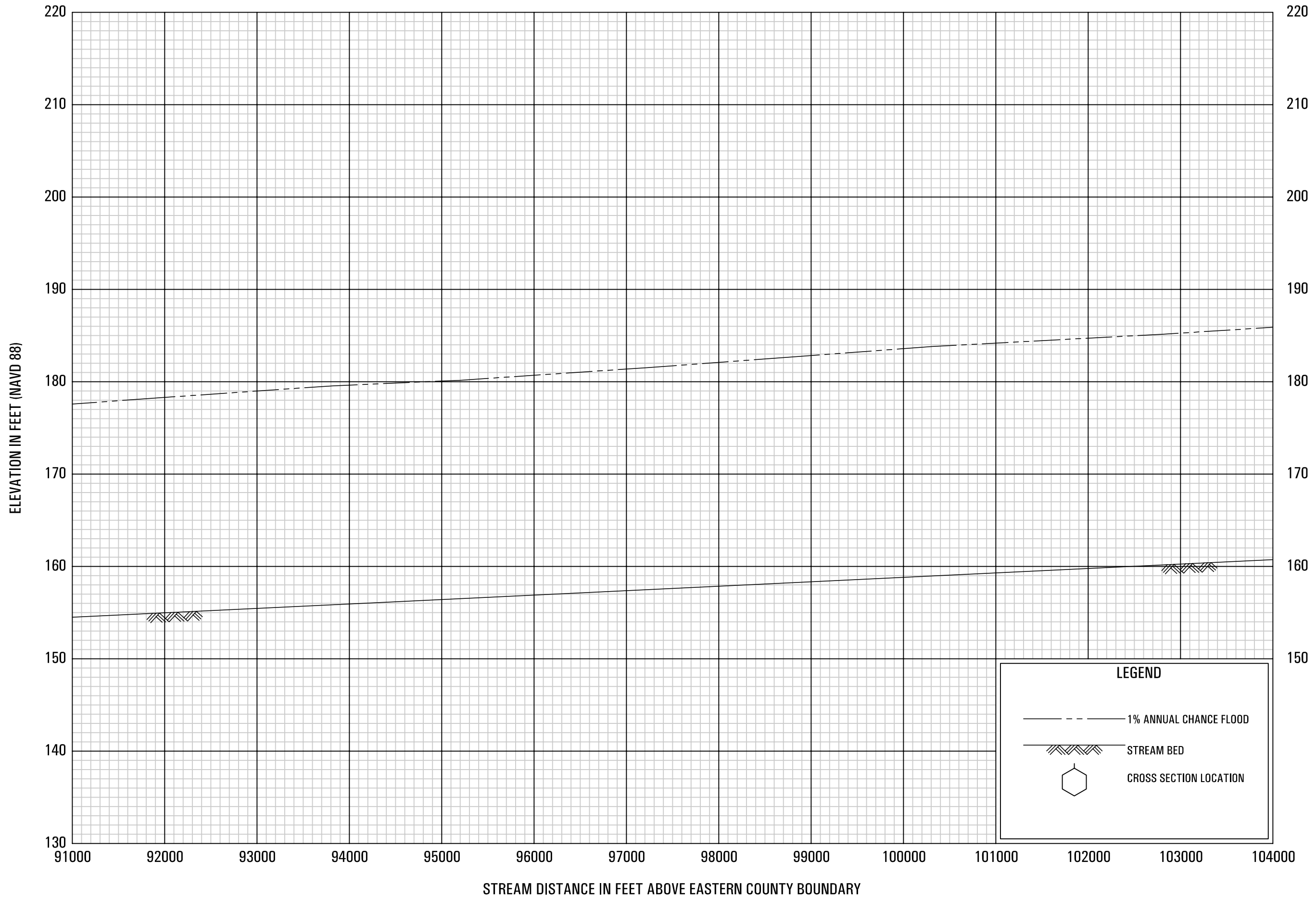
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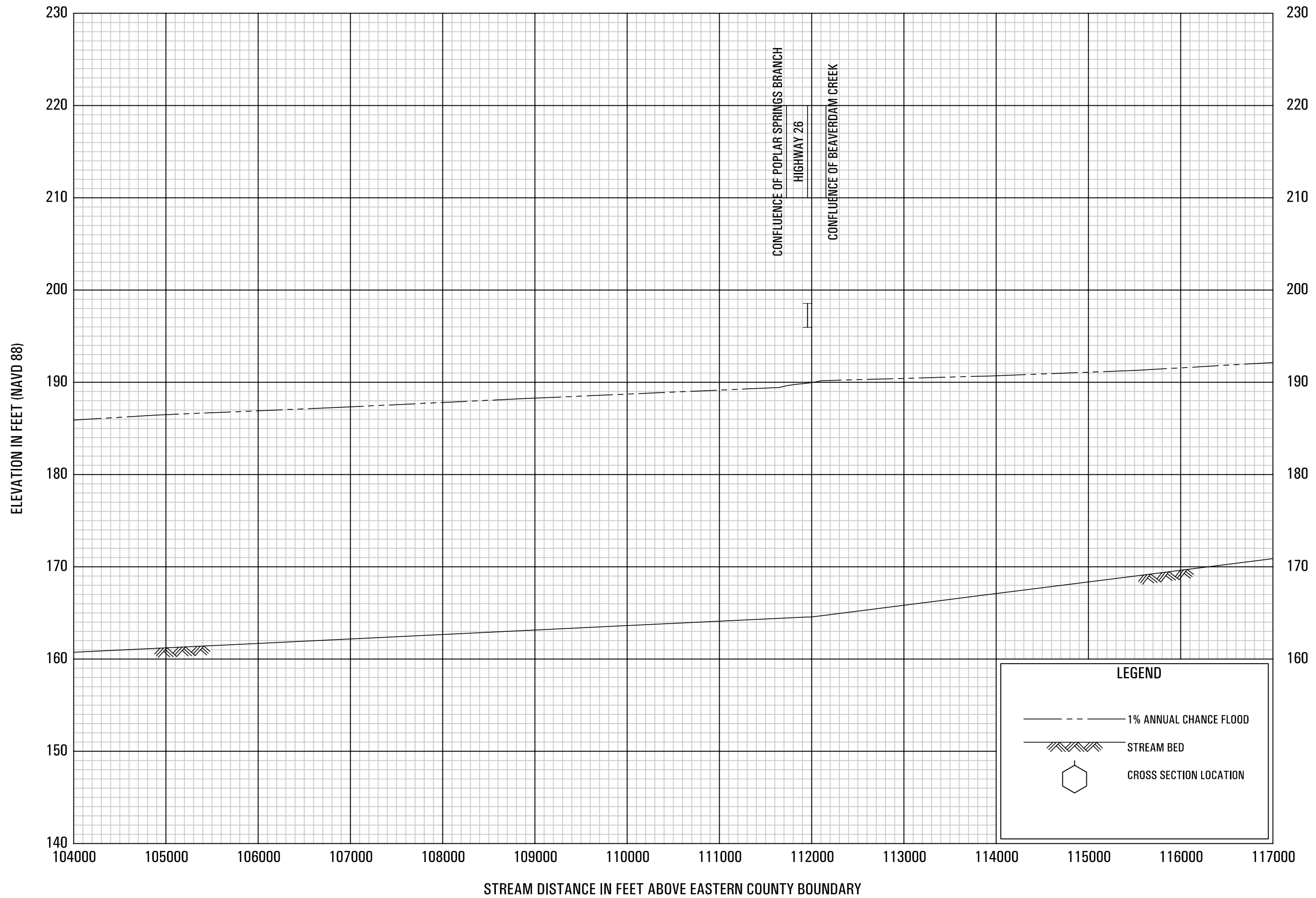


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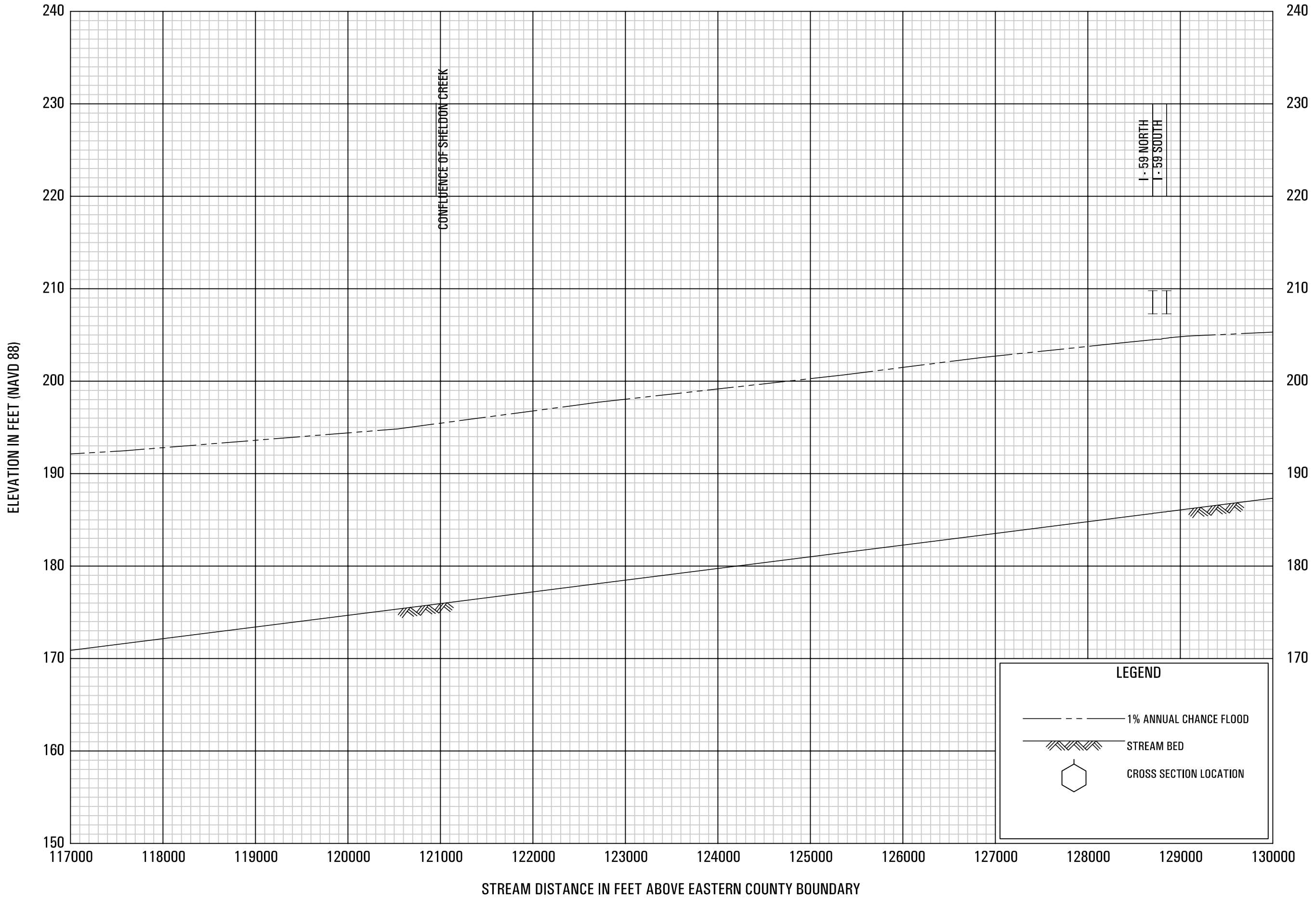




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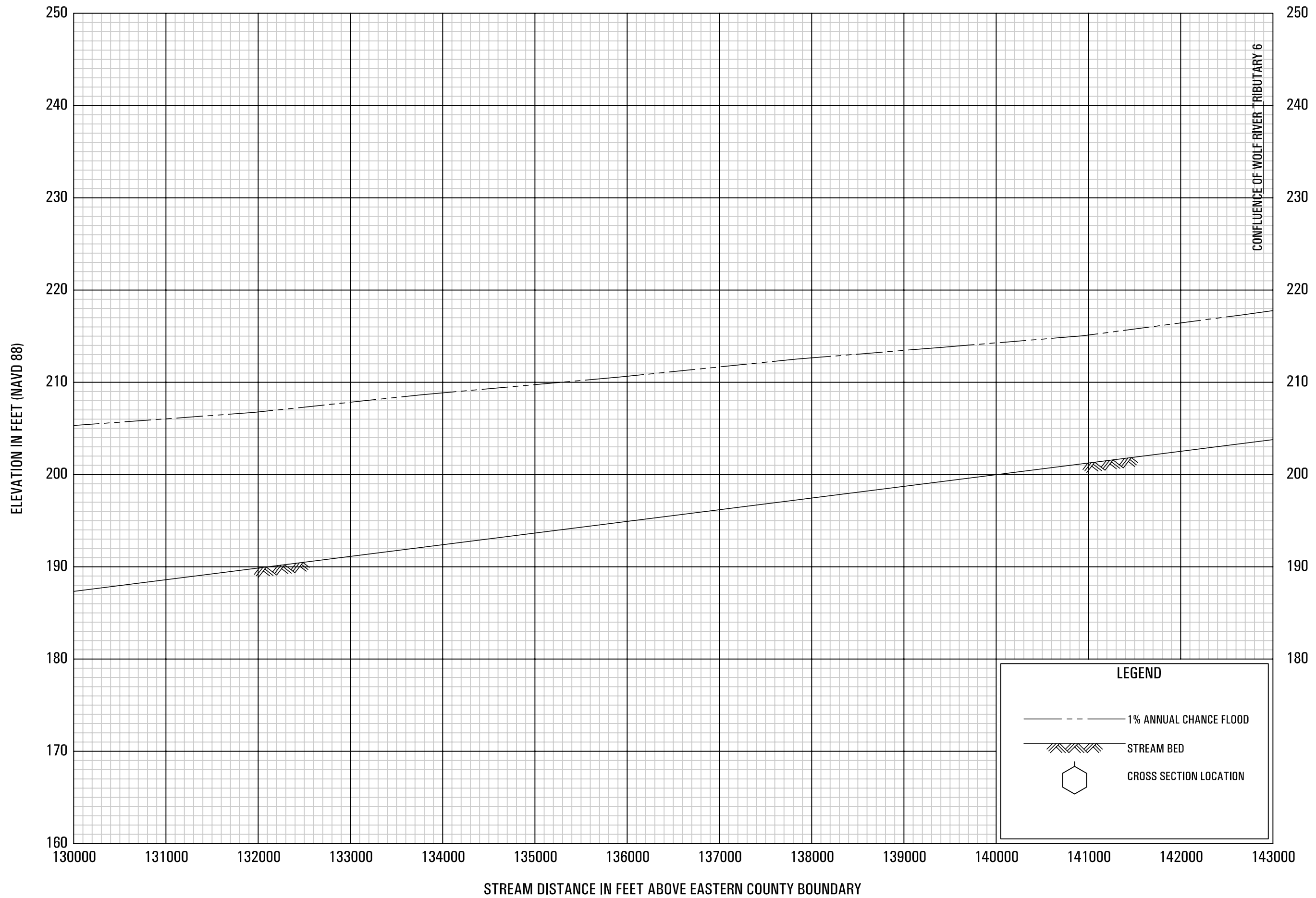
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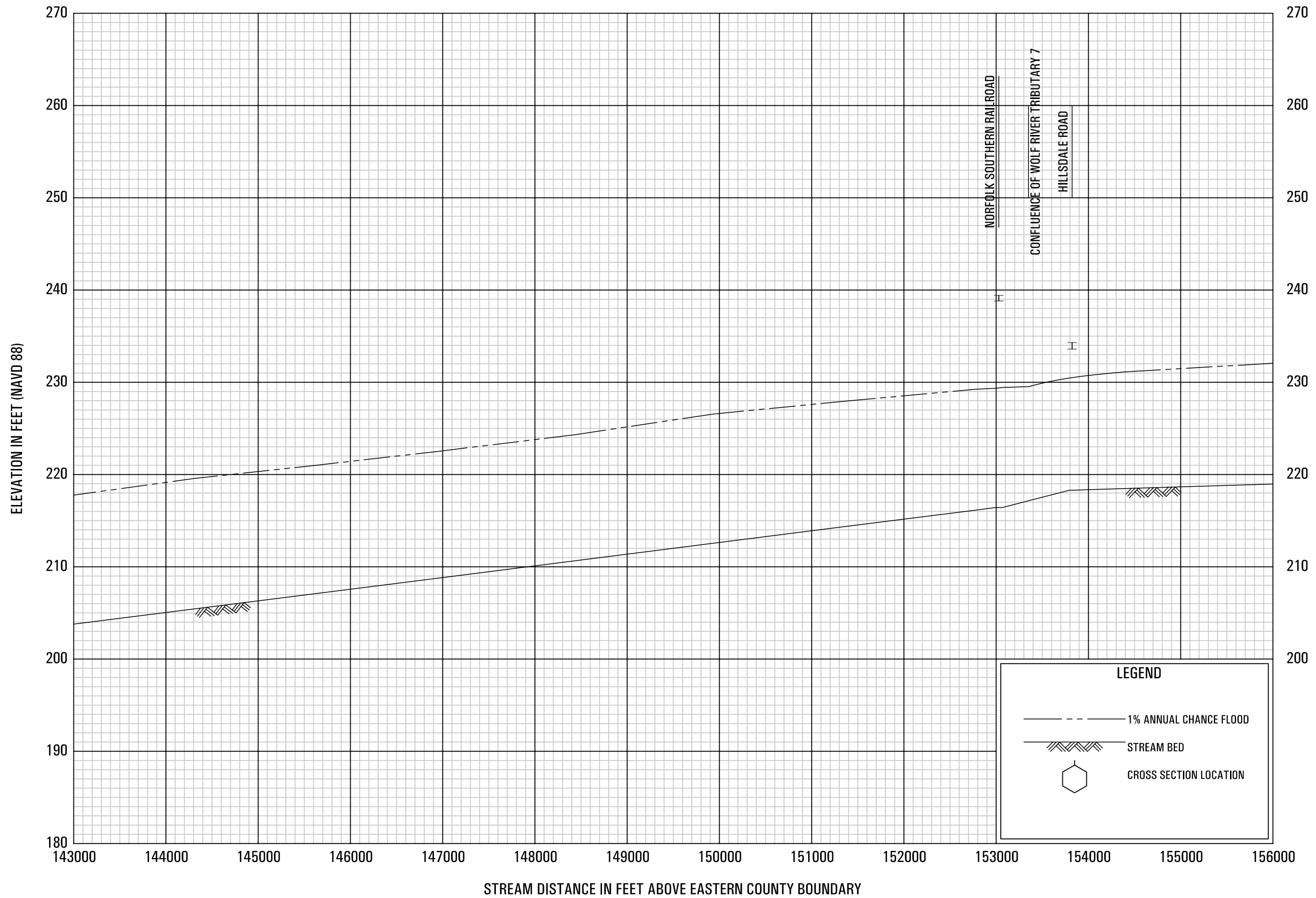
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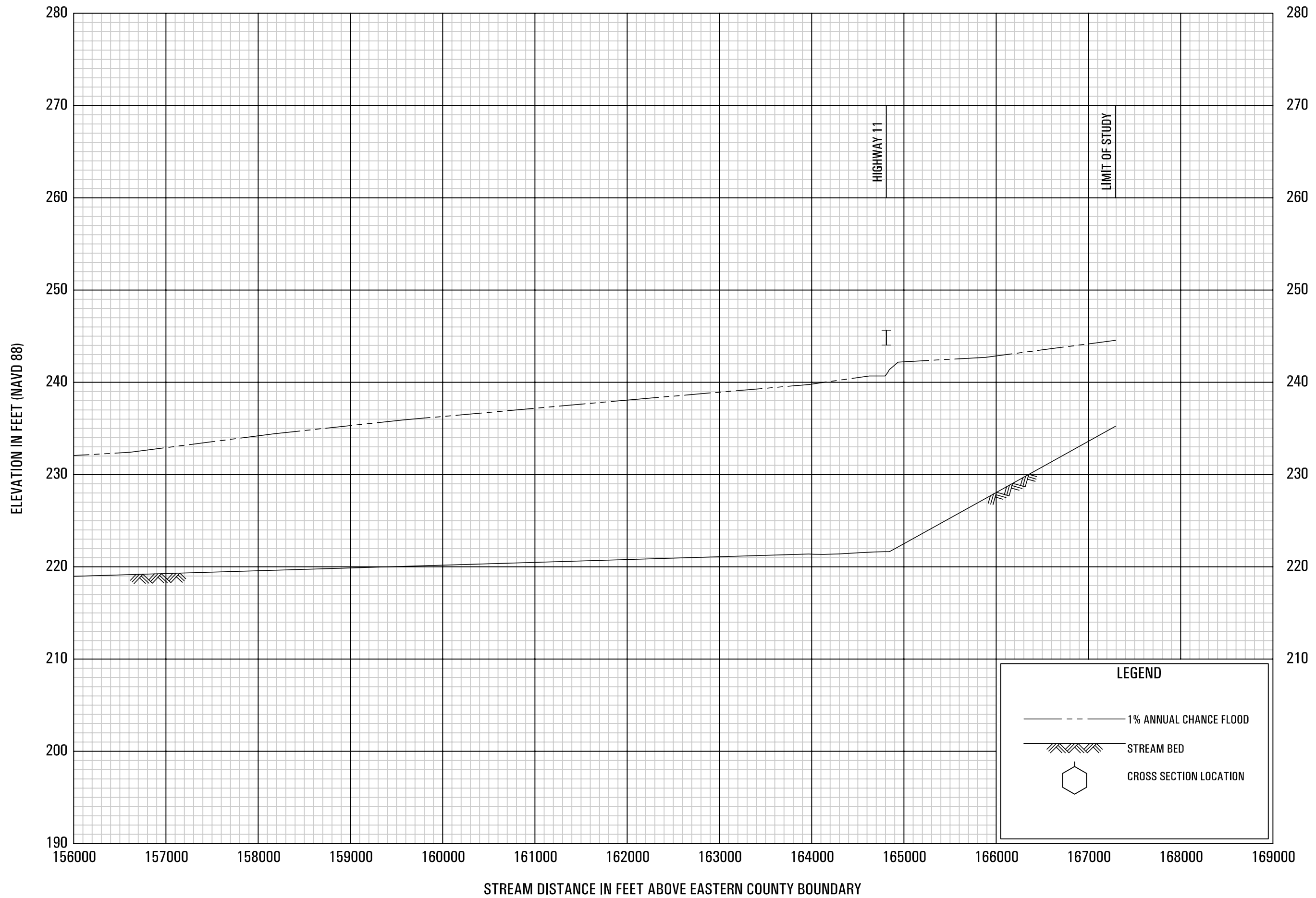
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