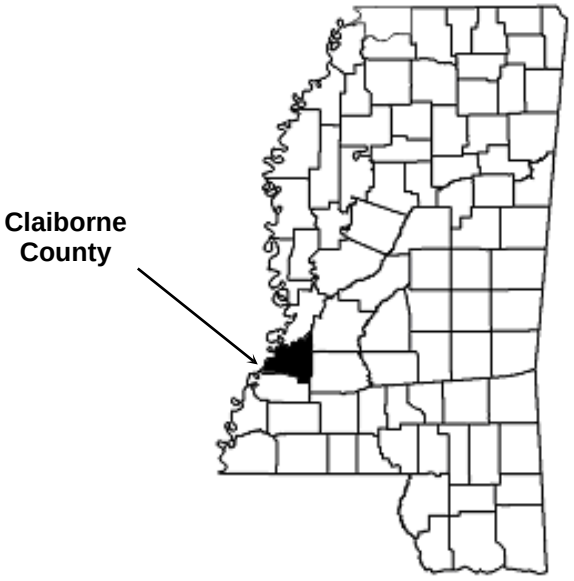
FLOOD INSURANCE STUDY

CLAIBORNE COUNTY, MISSISSIPPI
AND INCORPORATED AREAS



COMMUNITY NAME	COMMUNITY NUMBER
CLAIBORNE COUNTY (UNINCORPORATED AREAS)	280201
PORT GIBSON, TOWN OF	280033

REVISED: MONTH DAY, YEAR

PRELIMINARY
2/9/2018

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
28021CV000B

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program (NFIP) have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

Part or all of this FIS may be revised and republished at any time. In addition, part of this FIS may be revised by the Letter of Map Revision process, which does not involve republication or redistribution of the FIS. It is, therefore, the responsibility of the user to consult with community officials and to check the community repository to obtain the most current FIS components.

Initial Countywide FIS Effective Date: April 19, 2010

Revised Countywide FIS Dates:

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FLOOD INSURANCE STUDY
CLAIBORNE COUNTY, MISSISSIPPI AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and supersedes the FIS reports and/or Flood Insurance Rate Maps (FIRMs) in the geographic area of Claiborne County, Mississippi, including the Town of Port Gibson and unincorporated areas of Claiborne County (hereinafter referred to collectively as Claiborne County).

This FIS 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. This information will also be used by Claiborne County to update existing floodplain regulations as part of the Regular Phase of the National Flood Insurance Program (NFIP), and by local and regional planners to further promote sound land use and floodplain development. Minimum floodplain management requirements for participation in the NFIP are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

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 FIS report are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

November 1977, FIS Claiborne County (Unincorporated Areas)

The hydrologic and hydraulic analyses were performed by Michael Baker Jr., Inc., for the Federal Emergency Management Agency (FEMA) in May 1976, under Contract Number H-3800. The work covered all significant flooding sources affecting the unincorporated areas of Claiborne County.

December 1977, FIS Town of Port Gibson

The hydrologic and hydraulic analyses for this study were performed by Michael Baker Jr., Inc., for the Federal Insurance Administration, under Contract Number H-3800. The work, which was completed in December 1976, covered all significant flooding sources affecting the Town of Port Gibson.

This Countywide FIS

The hydrologic and hydraulic analyses for this countywide FIS were performed by the State of Mississippi for the Federal Emergency Management Agency (FEMA), under Contract No. EMA-2006-CA-5617. This study was completed in November 2008.

The digital base map information files were provided by the U.S. Army Corps of Engineers—Vicksburg District, 4155 East Clay Street, Vicksburg, MS 39183, phone number (601) 631-5053. The digital orthophotography was acquired in March 2006, with the imagery processed to a 2-foot pixel resolution.

The digital FIRM was produced using the Mississippi State Plane Coordinate System, West Zone, FIPSZONE 2302. The horizontal datum was the North American Datum of 1983, GRS 80 spheroid. Distance units were measured in U.S. feet.

1.3 Coordination

An initial Consultation Coordination Officer's (CCO) meeting is held with representatives from FEMA, the community, and the study contractor to explain the nature and purpose of a FIS, and to identify the streams to be studied by detailed methods. A final CCO meeting is held with representatives from FEMA, the community, and the study contractor to review the results of the study.

For the initial Claiborne County (Unincorporated Areas) FIS, a consultation coordination meeting was held on February 27, 1975, with representatives of Claiborne County, the Federal Insurance Administration, and the engineering firm of Michael Baker, Jr., Inc. to review the flood problems and to determine the areas to be studied within the community.

On September 20, 1975, a meeting, open to the general public, was held to announce the commencement of the study, discuss the nature and purpose of the study, and explain study methods and procedures. The meeting was attended by the editor of the Port Gibson Reveille, representatives from the Federal Insurance Administration, and Michael Baker, Jr., Inc. A second meeting was held on January 14, 1976, but no local representatives were in attendance.

A final coordination meeting was held on July 22, 1976, to review the report findings and to explain appeals procedures. Representatives of the county, Michael Baker, Jr., Inc., the state the Federal Insurance Administration, and others were in attendance. The study was accepted by the community.

For the Town of Port Gibson FIS, meetings were held January 20 and 23, 1976, with the Mayor of Port Gibson, a representative of Michael Baker Jr., Inc., and a representative of the Federal Insurance Administration to review flood problems and to determine areas to be studied within the community.

A final community coordination meeting was held on April 26, 1977, to review report findings in detail and to explain procedures for appealing the Federal Insurance Administrator’s proposed flood elevations. The study was accepted.

For this countywide FIS, the Project Scoping Meeting was held on November 20, 2006. Attendees for these meetings included representatives from the Mississippi Department

of Environmental Quality, Mississippi Emergency Management Agency, FEMA National Service Provider, Claiborne County, the Town of Port Gibson, the State, and the Study Contractor. Coordination with county officials and Federal, State, and regional agencies produced a variety of information pertaining to floodplain regulations, available community maps, flood history, and other hydrologic data. All problems raised in the meetings have been addressed.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS covers the geographic area of Claiborne County, Mississippi, and its incorporated communities listed in Section 1.1. Several flooding sources within the county were studied by approximate methods. Approximate analyses are used to study those areas having a low development potential or minimal flood hazards. The scope and methods of study were proposed to, and agreed upon, by FEMA and the State of Mississippi.

November 1977, FIS Claiborne County (Unincorporated Areas)

For the November 1977, Claiborne County (Unincorporated Areas), FIS, a community meeting was held on February 27, 1975. It was determined that the Mississippi River, which forms the western boundary of Claiborne County, and portions of Bayou Pierre and Little Bayou Pierre would be studied in detail. Bayou Pierre was studied in detail from a point approximately 500 feet west of the Canadian National Railroad Bridge, northwest of Port Gibson, to a point approximately 0.5 mile east of U.S. Highway 61. Little Bayou Pierre was studied in detail from its confluence with the Bayou Pierre to a point approximately 50 feet east of the Natchez Trace Parkway.

It was also decided that the remaining portions of Bayou Pierre and Little Bayou Pierre, a selected number of their tributaries, and the Big Black River would be studied by approximate methods. Areas studied by approximate methods were those areas which had little present and projected development, yet had some flooding problems.

The selection of those streams studied by detailed methods was made with consideration given to all forecasted development through May 1981.

December 1977, FIS Town of Port Gibson

For the December 1977, Town of Port Gibson FIS, the following flooding sources were studied by detailed methods: Little Bayou Pierre, Stream 1, Stream 2, and Stream 3.

The three streams studied are tributaries of Little Bayou Pierre, which skirts Port Gibson to the north and east, draining over 300 square miles in central and southeast Claiborne County.

Stream 1 for study purposes flows from the western corporate limits near Wilson Avenue in a northerly direction to its confluence with Little Bayou Pierre at the corporate limits, and drains an area generally bounded by Irwin Street and U.S. Highway 61.

Stream 2 has its headwaters to the west of Port Gibson and flows easterly through south central Port Gibson, draining the area generally bounded on the south by State Highway 547 and Coffee Street on the north.

Stream 3 flows easterly from the southwest corporate limits along the southern corporate limits to Bridewell Lane and drains the area south of State Highway 547

Studies made and results contained in the December 1977, FIS give consideration to development projected through 1981.

This Countywide Study

For this countywide FIS, a limited detail study was run on the Bayou Pierre from 55,000 feet upstream of the mouth to the effective AE zone. Several flooding sources within the county were studied by approximate methods. Approximate analyses are used to study those areas having a low developmental potential or minimal flood hazards. The scope and methods of study were proposed to, and agreed upon, by FEMA and the State of Mississippi.

The following stream names have been changed.

Old Stream Name	New Stream Name
Stream 1	Stream 3
Stream 3	Stream 1

Floodplain boundaries of stream that have been previously studied by detailed methods were redelineated based on best available topographic information.

2.2 Community Description

Claiborne County, located in the southwestern part of the state, was formed in 1802 and was named for W.C. Claiborne, former governor of the Mississippi Territory. It was first settled in 1729 near Pettit Gulf, north of the present Town of Rodney. Grand Gulf on the Mississippi River was settled in 1775 and became the first permanent town in the county. The Town of Port Gibson was incorporated in 1811, having grown around a plantation boat landing known as Gibson's Port or Gibson's Landing.

The 2007 estimated population of Claiborne County was reported to be 10,999 (U.S. Census Bureau, 2008).

The economy of Claiborne County is diverse with science and technical services, retail trade, and health care and social assistance being the largest industries (U.S. Census Bureau, 2008).

The topography of Claiborne County consists of an area of wind-deposited uplands that includes plains along large tributary streams. Approximately 10-percent of the county is part of the Mississippi delta. The alluvial plain of the Mississippi varies from 1 to 5 miles in width and consists of natural levees, slack-water areas, and land adjacent to the loessal uplands. The climate of the county is generally mild and humid, with abundant rainfall that averages 59 inches annually. Temperatures range from monthly averages of

44 degrees Fahrenheit (°F) in January to 80°F in July (National Weather Service, Jackson, MS, 2008).

2.3 Principal Flood Problems

The greatest flood known to have occurred on the Mississippi River at the City of Natchez was in February 1937 (USACE, 1969). Another great flood, the second highest stage, occurred in May 1927 and would have been several feet higher had there not been levee breaks upstream of the City of Natchez. It was estimated that a total of 23,000 square miles were inundated and over 700,000 people were made homeless by this flood. The amount of damages ranged from 225 to 365 million dollars.

Floods on the smaller streams in Mississippi are usually caused by intense seasonal rains, occasional tropical storms or hurricanes, and frequent thunderstorms.

Bayou Pierre and the Big Black River are influenced by the backwaters of the Mississippi River and the floods on those streams may be worsened if they occur when the Mississippi is at a higher than normal stage.

Little Bayou Pierre is the principal source of flooding in Port Gibson; however, some flooding has occurred along the smaller streams. Although floodwaters usually recede within a relatively short time, some damage has been incurred in low-lying areas.

Port Gibson's most damaging recent flood occurred following a rainfall of 10.12 inches on April 12-13, 1974 (NOAA, 1976). This storm had an expected frequency of 35 years.

Factors which may retard the normal runoff of heavy rainfall are bridges or culverts which may have inadequate capacity or may be subject to constriction due to debris-collection or siltation.

2.4 Flood Protection Measures

The main stem of the Mississippi River below Cape Girardeau, Missouri, has been confined by levees on one or both banks. These provide protection from flooding to approximately 24,000 square miles of alluvial valley land. Cutoff channels and other realignments have shortened the river by approximately 170 miles and have reduced the flood stages by as much as 3 to 4 feet at the City of Natchez, MS.

3.0 ENGINEERING METHODS

For the flooding sources studied by detailed methods in the communities, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude that are 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 peak discharge-frequency relationships for each flooding source studied by detailed methods affecting the community.

November 1977, Claiborne County (Unincorporated Areas) FIS

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for floods of the selected recurrence intervals for each stream studied in detail in the county.

The peak discharges for the Mississippi River for the 10, 2.0, 1.0, and 0.2 percent annual chance floods were taken from data obtained form the U.S. Army Corps of Engineers (USACE, 1976). This information was then used to extrapolate the 0.2-percent annual chance flood discharge for the river.

The peak discharge for Bayou Pierre and Little Bayou Pierre were determined for the 10 and 2.0 percent annual chance floods using the procedures described in a regional flood frequency report prepared by the U.S. Geological Survey (Dept. of Interior, 1961). The analyses were based on recorded data from gages located throughout the state with a total of approximately 29.33 years of record. The discharges for the 1.0 and 0.2 percent annual chance floods were graphically extrapolated from the discharges of the 10 and 2.0 percent annual chance floods.

Frequency-Discharge, Drainage Area Curves for Bayou Pierre and Little Bayou Pierre are shown in Figure 1.

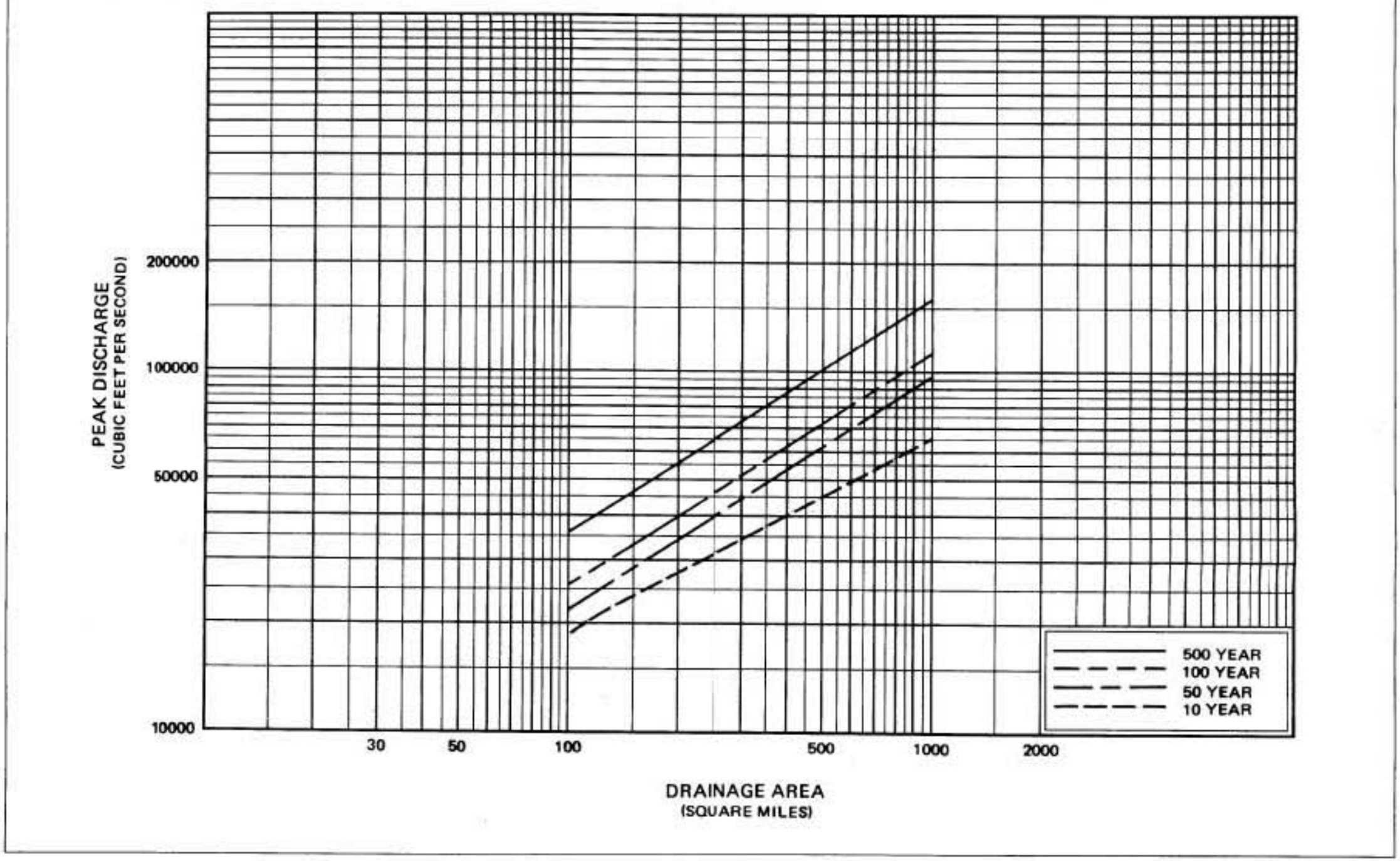

FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLAIBORNE COUNTY, MS

AND INCORPORATED AREAS

FREQUENCY DISCHARGE, DRAINAGE AREA CURVES

BAYOU PIERRE-LITTLE BAYOU PIERRE

December 1977, Town of Port Gibson FIS

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for floods of the selected recurrence intervals for each stream segment studied in detail in the community.

Flood Frequency of Mississippi Streams, by the USGS, intended for use in natural basins without urbanization and flood protection measures, was used to determine flows for Streams 1, 2, and 3 (Dept. of Interior, 1976). This technique for estimating future flood magnitudes was developed using records of annual peaks for 89 basins and observed annual peak-flow data for 221 stream gaging stations. The length of record for 82 of the 221 stations with actual records is 25 years or more. The natural drainage areas fro which flood frequency is defined range from 0.04 to 6630 square miles. Multi-regression analyses were used to average the chance variability of the data and relate flood frequency to basin characteristics, the most significant being drainage area, slope, and length.

Discharge for Little Bayou Pierre were determined for the 10 and 2.0 percent annual chance floods using the procedures in "Floods in Mississippi, Magnitude and Frequency" (Dept. of Interior, 1961), and extrapolated for the 10 and 2.0 percent annual chance floods.

This Countywide FIS Analysis

Hydrologic analyses were carried out to establish peak discharge-frequency relationships for each flooding source studied by limited detail methods affecting the communities. Peak discharges were calculated based on USGS regional regression equations (U.S. Department of the Interior, 1991). For the discharges calculated based on regional regression equations, the rural regression values were modified to reflect stream gage weighting and/or urbanization as necessary.

A summary of the drainage area-peak discharge relationships for all the streams is shown in Table 1, "Summary of Discharges."

TABLE 1. SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. mi.)	PEAK DISCHARGES (cfs) 10-percent	2-percent	1-percent	0.2-percent
LITTLE BAYOU PIERRE					
Northwest Corporate Limits	303.16	37,000	57,000	67,000	92,000
STREAM 1					
Corporate Limits	0.39	317	442	480	659
Private Drive (Cross Section D)	0.31	245	339	381	524
Railroad	0.09	100	135	145	180
STREAM 2					
Bridewell Lane	0.62	412	590	655	926
Magnolia Street	0.54	397	562	619	864
U.S. Highway 61	0.39	308	431	472	651
Cross Section I	0.21	192	262	283	380
STREAM 3					
Bridewell Lane	0.75	490	700	800	1,200
Woodstock Street	0.65	440	620	710	1,000
U.S. Highway 61	0.52	370	520	590	830

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 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.

November 1977, Claiborne County (Unincorporated Areas) FIS Analyses

Analyses of the hydraulic characteristics of streams in the community were carried out to provide estimates of the elevations of floods of the selected recurrence intervals along each stream studied in detail.

Water-surface elevations for floods of the selected recurrence intervals for Bayou Pierre and Little Bayou Pierre were computed through the USACE HEC-2 step backwater computer program (USACE, 1976). Cross sections for the backwater analysis of the Bayou Pierre and Little Bayou Pierre were field surveyed and the bridge waterway openings were measured. Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles, selected cross section locations are also shown

on the Flood Boundary and Floodway Map. Channel roughness factors (Manning's "n") for these computations ranged in value from 0.035 to 0.120.

The profiles for the Mississippi River are based on data which were derived by the U.S. Army Corps of Engineers (USACE) using historic flood information and a special test model (USACE, 1976).

The starting elevations for Bayou Pierre were determined using the slope-area method. The starting elevations for Little Bayou Pierre were taken form the elevations developed for Bayou Pierre. Backwater from the Mississippi River was found to have only a minor effect on the flooding of Bayou Pierre.

Flood elevations for Big Black River were obtained from the USACE (USACE, 1940). Flood elevations for remaining streams were determined by approximate methods utilizing general stream channel configurations and the U.S. Geological Survey topographic maps (Dept. of Interior, 1962-1973).

December 1977, Town of Port Gibson FIS Analyses

Cross sections of stream channels and bottom lands were surveyed, and bridge and culvert waterway openings were measured in the field. Several road profiles were obtained from the Mississippi State Highway Department and correlated with field information for use in the study. 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 is computed (Section 4.2), selected cross section locations are also shown on the Flood Boundary and Floodway Map (Exhibit 2). Elevation reference marks used in the study are shown on the maps.

With stream characteristics determined by field observation, flood profiles were computed using the standard step-backwater and Water Surface Profiles computer program HEC-2 (USACE, 1976) developed by the USACE. Roughness coefficients (Manning's "n") used in the flood profile calculations ranged from 0.035 to 0.120. Flood profiles were drawn showing computed water-surface elevations to an accuracy of 0.5 foot for floods of the 10, 2.0, 1.0, and 0.2-percent annual chance recurrence intervals.

Because the method selected for determination of discharges is based upon actual gage records, consideration for normal stream storage is included in the estimated discharges. The storage potential of the area under study may be significantly large to effectively reduce the outlet discharge form that derived by the method described. A thorough engineering study of the storage-discharge relationship is beyond the scope of this study and of available mapping.

The hydraulic analyses and flood elevations determined in this study consider that hydraulic structures on the stream systems are unobstructed.

This Countywide FIS Analysis

Cross section geometries were obtained from a combination of terrain data and field surveys. Bridges and culverts located within the limited detailed study limits were field surveyed to obtain elevation data and structural geometry.

Downstream boundary conditions for the hydraulic models were set to normal depth using a starting slope calculated from values taken from topographic data, or where applicable, derived from the water-surface elevations. Water-surface profiles were computed through the use of the USACE HEC-RAS version 3.1.3 computer program (USACE, 2003). The model was run for the 1-percent annual chance storm for the limited detail and approximate studies.

Channel roughness factors (Manning's "n") values used in the hydraulic computations for both channel and overbank areas were based on recent digital orthophotography and field investigations.

Table 2, "Summary of Roughness Coefficients," shows the ranges of the channel and overbank roughness factors used in the computations for all of the streams studied by detailed methods.

TABLE 2. SUMMARY OF ROUGHNESS COEFFICIENTS

Limited Detailed Study Streams

FLOODING SOURCE	CHANNEL "N"	OVERBANK "N"
Bayou Pierre	0.045	0.1-0.12

The hydraulic analyses for this countywide FIS were based on unobstructed flow. The flood elevations shown on the Flood Profiles (Exhibit 1) are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

Qualifying bench marks within a given jurisdiction that are cataloged by the National Geodetic Survey (NGS) and entered into the National Spatial Reference System (NSRS) as First or Second Order Vertical and have a vertical stability classification of A, B, or C are shown and labeled on the FIRM with their 6-character NSRS Permanent Identifier.

Benchmarks cataloged by the NGS and entered into the NSRS vary widely in vertical stability classification. NSRS vertical stability classifications are as follows:

> Stability A: Monuments of the most reliable nature, expected to hold position/elevation well (e.g., mounted in bedrock)
>
> Stability B: Monuments which generally hold their position/elevation well (e.g., concrete bridge abutment)
>
> Stability C: Monuments which may be affected by surface ground movements (e.g., concrete monuments below frost line)
>
> Stability D: Mark of questionable or unknown vertical stability (e.g., concrete monument above frost line, or steel witness post)

In addition to NSRS benchmarks, the FIRM may also show vertical control monument established by a local jurisdiction; these monuments will be shown on the FIRM with the appropriate designations. Local monuments will only be placed on the FIRM if the community has requested that they be included, and if the monuments meet the aforementioned NSRS inclusion criteria.

To obtain current elevation, description, and/or location information for benchmarks shown on the FIRM for this jurisdiction, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit its website at http://www.ngs.noaa.gov.

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. Interested individuals may contact FEMA to access this data.

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 in use for newly created or revised FIS reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD29). With the finalization of the North American Vertical Datum of 1988 (NAVD88), many FIS reports and FIRMs are being prepared using NAVD88 as the referenced vertical datum.

All flood elevations shown in this FIS report and on the FIRM are referenced to NAVD88. Structure and ground elevations in the community must, therefore, be referenced to NAVD88. It is important to note that adjacent communities may be referenced to NGVD29. This may result in differences in Base Flood Elevations (BFEs) across the corporate limits between the communities. The elevations shown in the FIS report and on the FIRM for Claiborne County are referenced to NAVD88.

Ground, structure, and flood elevations may be compared and/or referenced to NGVD29 by applying a conversion factor. To convert elevations from NAVD88 to NGVD29, add 0.05 feet to the NAVD88 elevation. The 0.05 feet value is an average for the entire county. The adjustment value was determined using the USACE Corpscon 6.0.1 computer program (USACE, 2004) and topographic maps (U.S. Department of the Interior, 1972). The BFEs shown on the FIRM represent whole-foot rounded values. For example, a BFE of 12.4 feet will appear as 12 feet on the FIRM, and 12.6 feet as 13 feet. Users who wish to convert the elevations in this FIS report to NGVD29 should apply the stated conversion factor to elevations shown on the Flood Profiles and supporting data tables in the FIS report, which are shown at a minimum to the nearest 0.1-foot.

For more information regarding conversion between the NGVD and the NAVD, see the FEMA publication entitled *Converting the National Flood Insurance Program to the North American Vertical Datum of 1988* or contact the Vertical Network Branch, National Geodetic Survey, Coast and Geodetic Survey, National Oceanic and Atmospheric Administration, Rockville, Maryland 20910 (Internet address http://www.ngs.noaa.gov).

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, Floodway Data Table and Summary of Stillwater Elevations 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 each stream studied by detailed methods, the 1- and 0.2-annual-chance floodplain boundaries have been delineated using the flood elevations determined at each cross section.

The 1- and 0.2-percent-annual-chance floodplain boundaries are shown on the FIRM (Exhibit 2), On this map, the 1-percent-annual-chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A and AE), and the 0.2-percent-annual-chance floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 1- 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 streams studied by limited detailed and approximate methods, only the 1-percent-annual-chance floodplain boundary is shown on the FIRM (Exhibit 2). Floodplain boundaries for these streams, as well as those streams that have been previously studied by detailed methods, were generated using USGS 10-meter Digital Elevation Models (USGS), then refined using detailed hydrographic data.

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 minimum standards 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 of detailed study streams (Table 3). For detailed study streams, in cases where the floodway and 1-percent-annual-chance floodplain boundaries are either close together or collinear, only the floodway boundary is shown.

Near the mouths of streams studied in detail, floodway computations are made without regard to flood elevations on the receiving water body. Therefore, "Without Floodway" elevations presented in Table 3, "Floodway Data," for certain downstream cross sections are lower than the regulatory flood elevations in that area, which must take into account the 1-percent-annual-chance flooding due to backwater from other sources.

Encroachment into areas subject to inundation by floodwaters having hazardous velocities aggravates the risk of flood damage, and heightens potential flood hazards by further increasing velocities. For detailed study streams, a listing of stream velocities at selected cross sections is provided in Table 3. In order to reduce the risk of property damage in areas where the stream velocities are high, the county may wish to restrict development in areas outside the floodway.

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 more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 2.

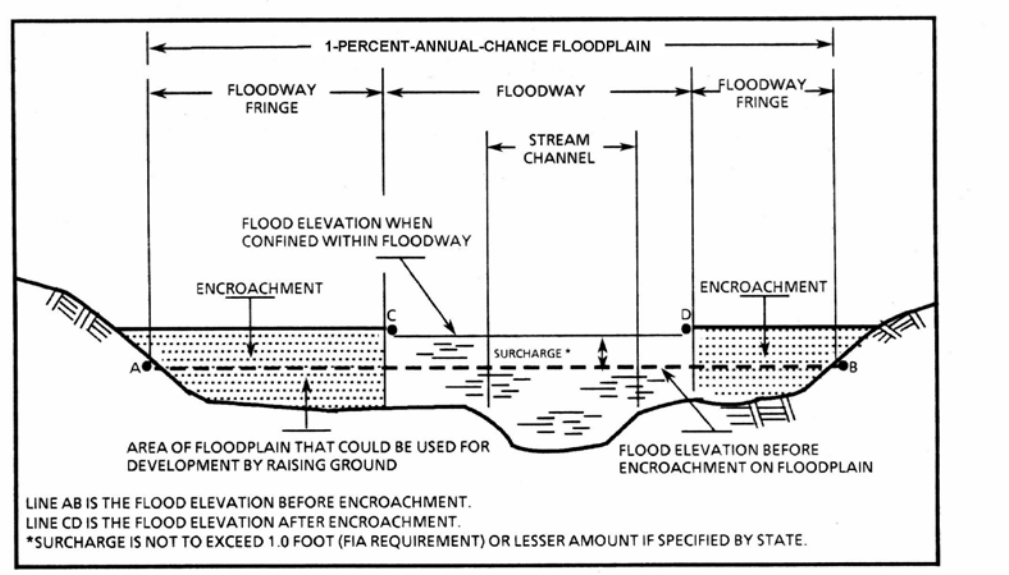

FIGURE 2. FLOODWAY SCHEMATIC

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BAYOU PIERRE								
E	104,790[1]	4,397	77,345	1.5	98.4	98.4	99.4	1.0
F	105,161[1]	4,741	89,209	1.3	99.0	99.0	100.0	1.0
G	106,424[1]	2,441	45,613	2.6	99.2	99.2	100.2	1.0
H	111,024[1]	4,577	94,154	1.0	99.6	99.6	100.6	1.0
I	116,524[1]	3,126	47,731	1.9	99.7	99.7	100.7	1.0
J	117,237[1]	3,182	49,513	1.8	100.1	100.1	101.1	1.0
K	120,467[1]	1,563	24,865	3.5	100.2	100.2	101.2	1.0
L	121,350[1]	1,539	26,587	3.3	101.0	101.0	102.0	1.0
M	124,000[1]	4,134	71,510	1.2	101.6	101.6	102.6	1.0
LITTLE BAYOU PIERRE								
A	1,700[2]	2,502	47,857	1.4	99.4	99.4	100.4	1.0
B	4,610[2]	1,342	27,830	2.4	99.5	99.5	100.5	1.0
C	7,910[2]	3,680	56,093	1.2	99.8	99.8	100.8	1.0
D	10,381[2]	1,797	23,064	2.9	100.1	100.1	101.1	1.0
E	11,073[2]	2,142	33,028	2.0	101.0	101.0	102.0	1.0
F	12,363[2]	2,879	44,760	1.5	101.2	101.2	102.2	1.0
G	14,793[2]	3,167	42,303	1.6	101.3	101.3	102.3	1.0
H	18,693[2]	3,087	39,195	1.7	101.6	101.6	102.6	1.0
I	20,726[2]	3,350	40,891	1.6	102.2	102.2	103.2	1.0

[1] FEET ABOVE CONFLUENCE WITH MISSISSIPPI RIVER
[2] FEET ABOVE CONFLUENCE WITH BAYOU PIERRE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLAIBORNE COUNTY, MS AND INCORPORATED AREAS

FLOODWAY DATA

BAYOU PIERRE – LITTLE BAYOU PIERRE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
STREAM 1								
A	1,845[1]	40	666	0.7	103.4	103.4	104.3	0.9
B	2,370[1]	35	469	1.0	103.4	103.4	104.3	0.9
C	2,805[1]	72	682	0.7	103.4	103.4	104.4	1.0
D	3,318[1]	57	346	1.1	104.2	104.2	105.2	1.0
E	3,689[1]	82	310	0.5	108.7	108.7	109.7	1.0
F	4,029[1]	29	88	1.6	113.4	113.4	114.3	0.9
STREAM 2								
A	2,342[2]	43	249	2.6	101.4	95.8[3]	95.8	0.0
B	3,147[2]	52	238	2.8	101.4	96.4[3]	96.4	0.0
C	4,077[2]	43	101	6.5	101.4	100.2[3]	100.2	0.0
D	4,317[2]	53	186	3.3	101.8	101.8	101.8	0.0
E	5,047[2]	53	86	7.2	105.1	105.1	105.1	0.0
F	5,595[2]	32	97	6.4	110.8	110.8	110.8	0.0
G	6,135[2]	22	104	4.5	113.4	113.4	113.4	0.0
H	6,575[2]	57	102	4.6	114.8	114.8	114.8	0.0
I	8,088[2]	54	79	3.6	122.1	122.1	122.1	0.0

[1] FEET ABOVE CONFLUENCE WITH LITTLE BAYOU PIERRE
[2] FEET ABOVE CORPORATE LIMITS
[3] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM LITTLE BAYOU PIERRE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLAIBORNE COUNTY, MS AND INCORPORATED AREAS

FLOODWAY DATA

STREAM 1 – STREAM 2

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
STREAM 3								
A	50	37	348	2.3	136.5	136.5	137.4	0.9
B	300	37	335	2.4	136.6	136.6	137.5	0.9
C	1,340	31	137	5.8	142.7	142.7	142.7	0.0
D	2,491	35	140	5.1	149.4	149.4	149.4	0.0
E	3,283	39	239	1.8	156.6	156.6	156.6	0.0
F	3,753	28	91	4.7	157.3	157.3	157.5	0.2
G	4,783	33	107	2.4	163.6	163.6	163.6	0.0

[1] FEET ABOVE UPSTREAM SIDE BRIDEWELL LANE

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLAIBORNE COUNTY, MS AND INCORPORATED AREAS

FLOODWAY DATA

STREAM 3

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. These zones are as follows:

Zone A

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

Zone AE

Zone AE is the flood insurance risk zone that corresponds to the 1-percent annual chance floodplains that are determined in the FIS by detailed methods. In most instances, whole-foot BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AH

Zone AH is the flood insurance rate zone that corresponds to the areas of 1-percent annual chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within the zone.

Zone AO

Zone AO is the flood insurance rate zone that corresponds to the areas of 1-percent annual chance shallow flooding (usually sheet flow on sloping terrain) where the average depths are between 1 and 3 feet. Average whole-foot depths derived from the detailed hydraulic analyses are shown within the zone.

Zone A99

Zone A99 is the flood insurance rate zone that corresponds to areas of the 1-percent floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or depths are shown within this zone.

Zone V

Zone V is the flood insurance rate zone that corresponds to the 1-percent coastal floodplains that have additional hazards associated with storm waves. Because approximate hydraulic analyses are performed for such areas, no base flood elevations are shown within this zone.

Zone VE

Zone VE is the flood insurance rate zone that corresponds to the 1-percent coastal floodplains that have additional hazards associated with storm waves. 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 risk zone that corresponds to areas outside the 0.2-percent annual chance floodplain, areas within the 0.2-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 base flood by levees. No BFEs or depths are shown within this zone.

Zone D

Zone D is the flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.

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 countywide FIRM presents flooding information for the entire geographic area of Claiborne County. Previously, FIRMs were prepared for each incorporated community and the unincorporated areas of the County identified as flood-prone. This countywide FIRM also includes flood-hazard information that was presented separately on Flood Boundary and Floodway Maps (FBFMs), where applicable. Historical data relating to the maps prepared for each community, up to and including this countywide FIS are presented in Table 4, “Community Map History.”

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
Claiborne County (Unincorporated Areas)	May 1, 1978	--	May 1, 1978	--
Port Gibson, Town of	February 1, 1974	July 23, 1976	June 15, 1978	--

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLAIBORNE COUNTY, MS
AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

7.0 OTHER STUDIES

Information pertaining to revised and unrevised flood hazards for each jurisdiction within Claiborne County has been compiled into this FIS. Therefore, this FIS supersedes all previously printed FIS reports, FIRMs, and/or FBFMs for all of the incorporated and unincorporated jurisdictions within Claiborne County.

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting Federal Insurance and Mitigation Division, FEMA Region IV, Koger-Center — Rutgers Building, 3003 Chamblee Tucker Road, Atlanta, GA 30341.

9.0 BIBLIOGRAPHY AND REFERENCES

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10.0 REVISIONS DESCRIPTION

This section has been added to provide information regarding significant revisions made since the original FIS report and DFIRM were printed. Future revisions may be made that do not result in the republishing of the FIS report.

10.1 First Revision (Revised TBD)

a. Acknowledgments

The hydrologic and hydraulic analyses for this revision were performed by the State of Mississippi for FEMA under Contract No. EMA-2012-CA-5266. This study was completed in May 2016.

Digital base map information shown on the FIRM was provided in digital format by the National Agriculture Imagery Program (NAIP). Base mapping aerial

photography was captured in 2014 with a resolution of 1 meter GSD.

The digital FIRM was produced using the Mississippi State Plane Coordinate system, West Zone (FIPS ZONE 2302). The horizontal datum was the North American Datum of 1983, GRS80 spheroid. Distance units were measured in U.S. feet.

The streams studied as part of this revision reflect more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for Claiborne County. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the FIS report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on the maps. Flood hazards associated with unstudied flooding sources have not been determined and should be investigated to ensure that existing or proposed development is relatively safe from flooding.

b. Coordination

A Project Discovery Meeting was held on December 13, 2012. Attendees for this meeting included representatives from the Mississippi Department of Environmental Quality, Mississippi Emergency Management Agency, FEMA Region IV, and the Claiborne County Economic Development District, and the Claiborne County Emergency Management office. On **TBD**, the results of this FIS revision were presented at a final coordination meeting attended by representatives of the State of Mississippi and its contractor, FEMA, and the community.

c. Scope

In this revision, the following table lists the flooding sources, which were newly studied by approximate methods.

TABLE 5. REVISED STREAMS STUDIED BY APPROXIMATE METHODS

Stream	Limits of New Approximate Study
Big Sand Creek	From approximately 19,300 feet upstream of the confluence with the Big Black River to the Claiborne-Hinds County boundary
Commissioners Creek	From approximately 11,400 feet upstream of the confluence with the Big Black River to the Claiborne-Hinds County boundary

Floodplain boundaries for the previously mentioned stream were updated on the following panels:

28021C0050D 28021C0075D 28021C0175D 28021C0200D

d. Hydrologic and Hydraulic Analyses

Hydrologic analyses were carried out to establish peak discharge-frequency relationships for each flooding source affecting the communities. Peak discharges were calculated based on USGS regional regression equations (U.S. Department of the Interior, 1991).

Cross section geometries were obtained from digital terrain data. Any bridges and culverts located within the approximate study limits were not included in the analyses. The Manning's "n" values used for the revised studies were 0.05 for the channel and 0.15 for the overbanks.

Downstream boundary conditions for the hydraulic models were set to normal depth using a starting slope calculated from values taken from topographic data, or where applicable, derived from the water-surface elevations. Water-surface profiles were computed through the use of the USACE HEC-RAS version 4.1.0 computer program (USACE, 2010). These studies were performed in order to correct mismatches in Special Flood Hazard Area between Hinds and Claiborne counties.

e. Floodplain Boundaries

For the streams studied by the approximate method, only the 1-percent-annual-chance floodplain boundary is shown on the FIRM (Exhibit 2). Floodplain boundaries for these streams were generated using a digital terrain model stereoscopically compiled from 2-foot pixel resolution orthophotography, captured in 2006. FIRM panels that are republished for this revision were produced using the 2012 FIRM specifications. Each FIRM panel may contain specific notes to the user that provide additional information regarding the flood hazard data shown on that map. However, the FIRM panel does not contain enough space to show all the notes that may be relevant in helping to better understand the information on the panel. Figure A contains the full list of these notes.

FIGURE 3. FIRM NOTES TO USERS

NOTES TO USERS

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products, or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Map Service Center at the number listed above.

For community and countywide map dates, refer to Table 4 in this FIS Report.

To determine if flood insurance is available in the community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

PRELIMINARY FIS REPORT: FEMA maintains information about map features, such as street locations and names, in or near designated flood hazard areas. Requests to revise information in or near designated flood hazard areas may be provided to FEMA during the community review period, at the final Consultation Coordination Officer's meeting, or during the statutory 90-day appeal period. Approved requests for changes will be shown on the final printed FIRM.

The map is for use in administering the NFIP. It may not identify all areas subject to flooding, particularly from local drainage sources of small size. Consult the community map repository to find updated or additional flood hazard information.

BASE FLOOD ELEVATIONS: For more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables within this FIS Report. Use the flood elevation data within the FIS Report in conjunction with the FIRM for construction and/or floodplain management.

FLOODWAY INFORMATION: Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the FIS Report for this jurisdiction.

FLOOD CONTROL STRUCTURE INFORMATION: Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of this FIS Report for information on flood control structures for this jurisdiction.

PROJECTION INFORMATION: The projection used in the preparation of the map was State Plane Coordinate System, Mississippi East, FIPS ZONE 2301. The horizontal datum was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

ELEVATION DATUM: Flood elevations on the FIRM are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

Local vertical monuments may have been used to create the map. To obtain current

monument information, please contact the appropriate local community.

BASE MAP INFORMATION: Base map information shown on the FIRM was provided by Mississippi Department of Environmental Quality, Mississippi Automated Resource Information System, and the United States Census Bureau at a scale of 1:5,000. For information about base maps, refer to other sections of this FIS Report.

The map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables may reflect stream channel distances that differ from what is shown on the map.

Corporate limits shown on the map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after the map was published, map users should contact appropriate community officials to verify current corporate limit locations.

NOTES FOR FIRM INDEX

REVISIONS TO INDEX: As new studies are performed and FIRM panels are updated within Claiborne County, MS, corresponding revisions to the FIRM Index will be incorporated within the FIS to reflect the effective dates of those panels. Please refer to Table 4 of this FIS Report to determine the most recent FIRM revision date for each community. The most recent FIRM panel effective date will correspond to the most recent index date.

SPECIAL NOTES FOR SPECIFIC FIRM PANELS

This Notes to Users section was created specifically for Claiborne County, MS**,** effective **TBD.**

FLOOD RISK REPORT: A Flood Risk Report (FRR) may be available for many of the flooding sources and communities referenced in this FIS Report. The FRR is provided to increase public awareness of flood risk by helping communities identify the areas within their jurisdictions that have the greatest risks. Although non-regulatory, the information provided within the FRR can assist communities in assessing and evaluating mitigation opportunities to reduce these risks. It can also be used by communities developing or updating flood risk mitigation plans. These plans allow communities to identify and evaluate opportunities to reduce potential loss of life and property. However, the FRR is not intended to be the final authoritative source of all flood risk data for a project area; rather, it should be used with other data sources to paint a comprehensive picture of flood risk.

Each FIRM panel contains an abbreviated legend for the features shown on the maps. However, the FIRM panel does not contain enough space to show the legend for all map features. Figure B shows the full legend of all map features. Note that not all of these features may appear on the FIRM panels in Claiborne County.

FIGURE 4. MAP LEGEND FOR FIRM

SPECIAL FLOOD HAZARD AREAS: *The 1% annual chance flood, also known as the base flood or 100-year flood, has a 1% chance of happening or being exceeded each year. Special Flood Hazard Areas are subject to flooding by the 1% annual chance flood. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights. See note for specific types. If the floodway is too narrow to be shown, a note is shown.*

	Special Flood Hazard Areas subject to inundation by the 1% annual chance flood (Zones A, AE, AH, AO, AR, A99, V and VE)
Zone A	The flood insurance rate zone that corresponds to the 1% annual chance floodplains. No base (1% annual chance) flood elevations (BFEs) or depths are shown within this zone.
Zone AE	The flood insurance rate zone that corresponds to the 1% annual chance floodplains. Base flood elevations derived from the hydraulic analyses are shown within this zone.
Zone AH	The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot BFEs derived from the hydraulic analyses are shown at selected intervals within this zone.
Zone AO	The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot depths derived from the hydraulic analyses are shown within this zone.
Zone AR	The flood insurance rate zone that corresponds to areas that were formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
Zone A99	The flood insurance rate zone that corresponds to areas of the 1% annual chance floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or flood depths are shown within this zone.
Zone V	The flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations are not shown within this zone.
Zone VE	Zone VE is the flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations derived from the coastal analyses are shown within this zone as static whole-foot elevations that apply throughout the zone.
	Regulatory Floodway determined in Zone AE.

	Non-encroachment zone (see Section 2.4 of this FIS Report for more information)
	**The Colorado River Floodway was established by Congress in the Colorado River Floodway Protection Act of 1986, Public Law 99-450 (100 Statute 1129). The Act imposes certain restrictions within the Floodway.**
FLOOD INSURANCE IS NOT AVAILABLE FOR STRUCTURES NEWLY BUILT OR SUBSTANTIALLY IMPROVED ON OR AFTER APRIL 8, 1987, IN THE DESIGNATED COLORADO RIVER FLOODWAY	

OTHER AREAS OF FLOOD HAZARD

Shaded Zone X: Areas of 0.2% annual chance flood hazards and areas of 1% annual chance flood hazards with average depths of less than 1 foot or with drainage areas less than 1 square mile.

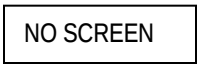
Future Conditions 1% Annual Chance Flood Hazard – Zone X: The flood insurance rate zone that corresponds to the 1% annual chance floodplains that are determined based on future-conditions hydrology. No base flood elevations or flood depths are shown within this zone.

Area with Reduced Flood Risk due to Levee: Areas where an accredited levee, dike, or other flood control structure has reduced the flood risk from the 1% annual chance flood. **See Notes to Users for important information.**

Area with Flood Risk due to Levee: Areas where a non-accredited levee, dike, or other flood control structure is shown as providing protection to less than the 1% annual chance flood.

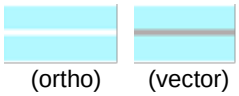
OTHER AREAS

Zone D (Areas of Undetermined Flood Hazard): The flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.



Unshaded Zone X: Areas of minimal flood hazard.

FLOOD HAZARD AND OTHER BOUNDARY LINES



Flood Zone Boundary (white line on ortho-photography-based mapping; gray line on vector-based mapping)

Limit of Study

Jurisdiction Boundary

Limit of Moderate Wave Action (LiMWA): Indicates the inland limit of the area affected by waves greater than 1.5 feet

GENERAL STRUCTURES

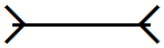
Aqueduct
Channel
Culvert
Storm Sewer

Channel, Culvert, Aqueduct, or Storm Sewer

Dam
Jetty
Weir

Dam, Jetty, Weir

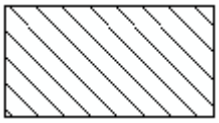
Levee, Dike, or Floodwall



Bridge

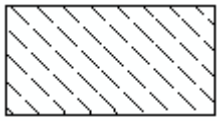
Bridge

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AND OTHERWISE PROTECTED AREAS (OPA): *CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.* ***See Notes to Users for important information.***



CBRS AREA
09/30/2009

Coastal Barrier Resources System Area: Labels are shown to clarify where this area shares a boundary with an incorporated area or overlaps with the floodway.



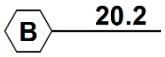
OTHERWISE PROTECTED AREA
09/30/2009

Otherwise Protected Area

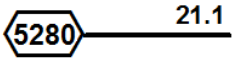
REFERENCE MARKERS

River mile Markers

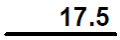
CROSS SECTION & TRANSECT INFORMATION



Lettered Cross Section with Regulatory Water Surface Elevation (BFE)



Numbered Cross Section with Regulatory Water Surface Elevation (BFE)

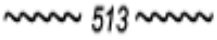


Unlettered Cross Section with Regulatory Water Surface Elevation (BFE)

Coastal Transect

Profile Baseline: Indicates the modeled flow path of a stream and is shown on FIRM panels for all valid studies with profiles or otherwise established base flood elevation.

Coastal Transect Baseline: Used in the coastal flood hazard model to represent the 0.0-foot elevation contour and the starting point for the transect and the measuring point for the coastal mapping.



Base Flood Elevation Line

ZONE AE
(EL 16)

Static Base Flood Elevation value (shown under zone label)

ZONE AO
(DEPTH 2)

Zone designation with Depth

ZONE AO
(DEPTH 2)
(VEL 15 FPS)

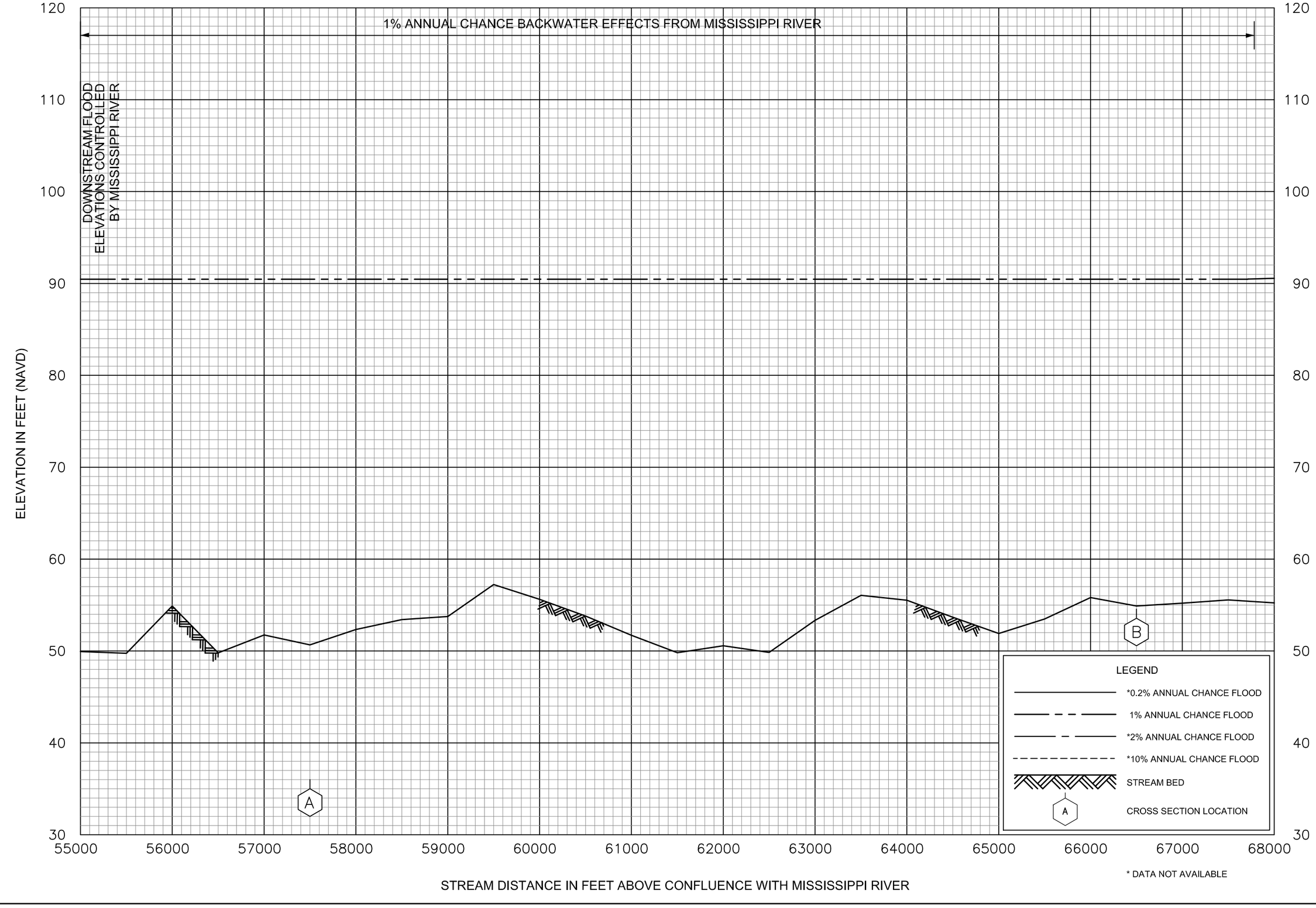
Zone designation with Depth and Velocity

BASE MAP FEATURES	
Missouri Creek	River, Stream or Other Hydrographic Feature
234	Interstate Highway
234	U.S. Highway
234	State Highway
234	County Highway
MAPLE LANE	Street, Road, Avenue Name, or Private Drive if shown on Flood Profile
RAILROAD	Railroad
	Horizontal Reference Grid Line
—	Horizontal Reference Grid Ticks
+	Secondary Grid Crosshairs
Land Grant	Name of Land Grant
7	Section Number
R. 43 W. T. 22 N.	Range, Township Number
$^{42}76^{000m}$**E**	Horizontal Reference Grid Coordinates (UTM)
365000 FT	Horizontal Reference Grid Coordinates (State Plane)
80° 16' 52.5"	Corner Coordinates (Latitude, Longitude)

f. Bibliography and References

U.S. Army Corps of Engineers (January 2010). Hydrologic Engineering Center, HEC-RAS River Analysis System, User's Manual, version 4.1.0, Davis, California.

U.S. Department of the Interior (1991). Geological Survey, Flood Characteristics of Mississippi Streams, Water-Resources Investigations Report 91-4037, Jackson, MS.



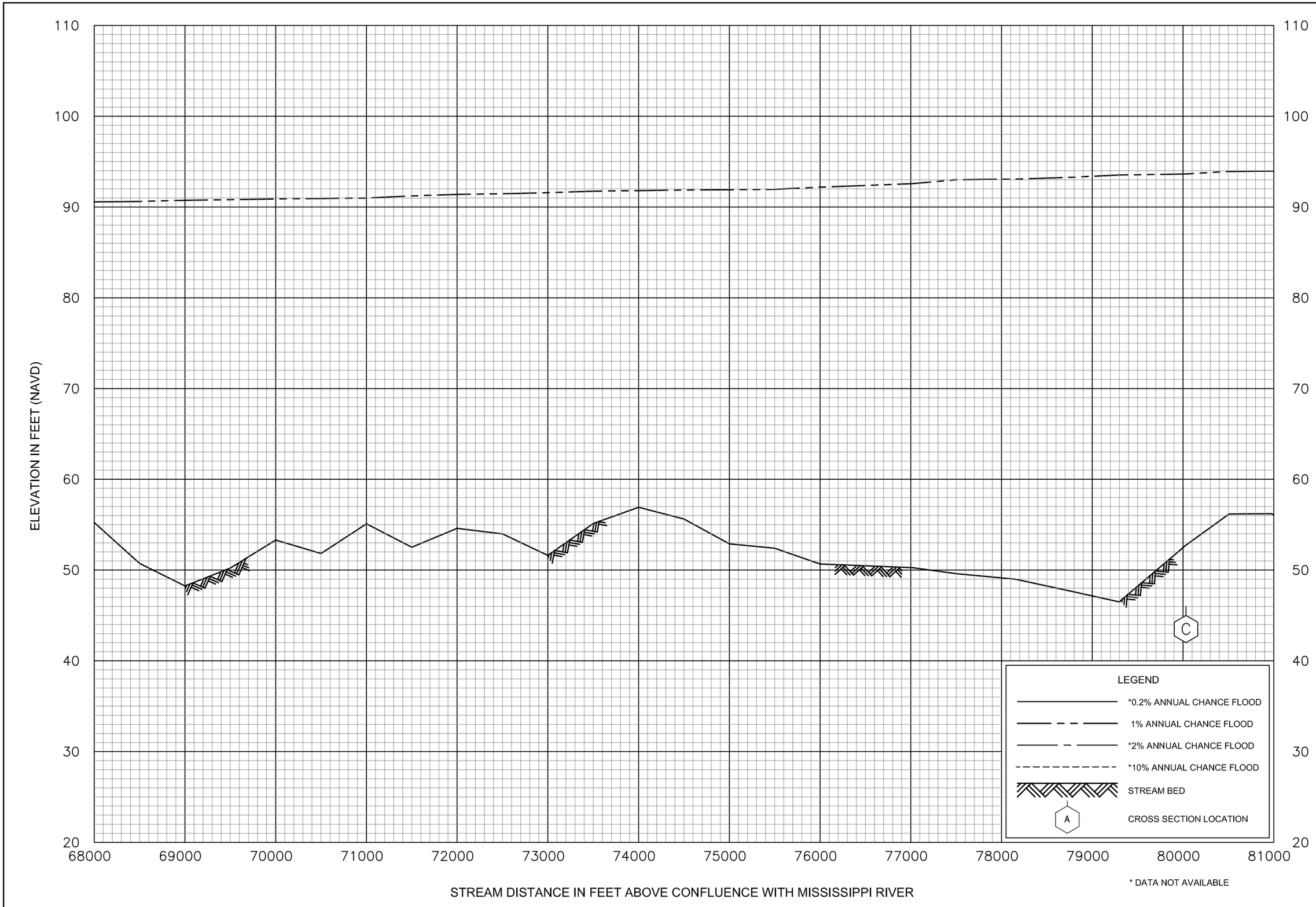
FLOOD PROFILES

BAYOU PIERRE

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLAIBORNE COUNTY, MS
AND INCORPORATED AREAS

01P



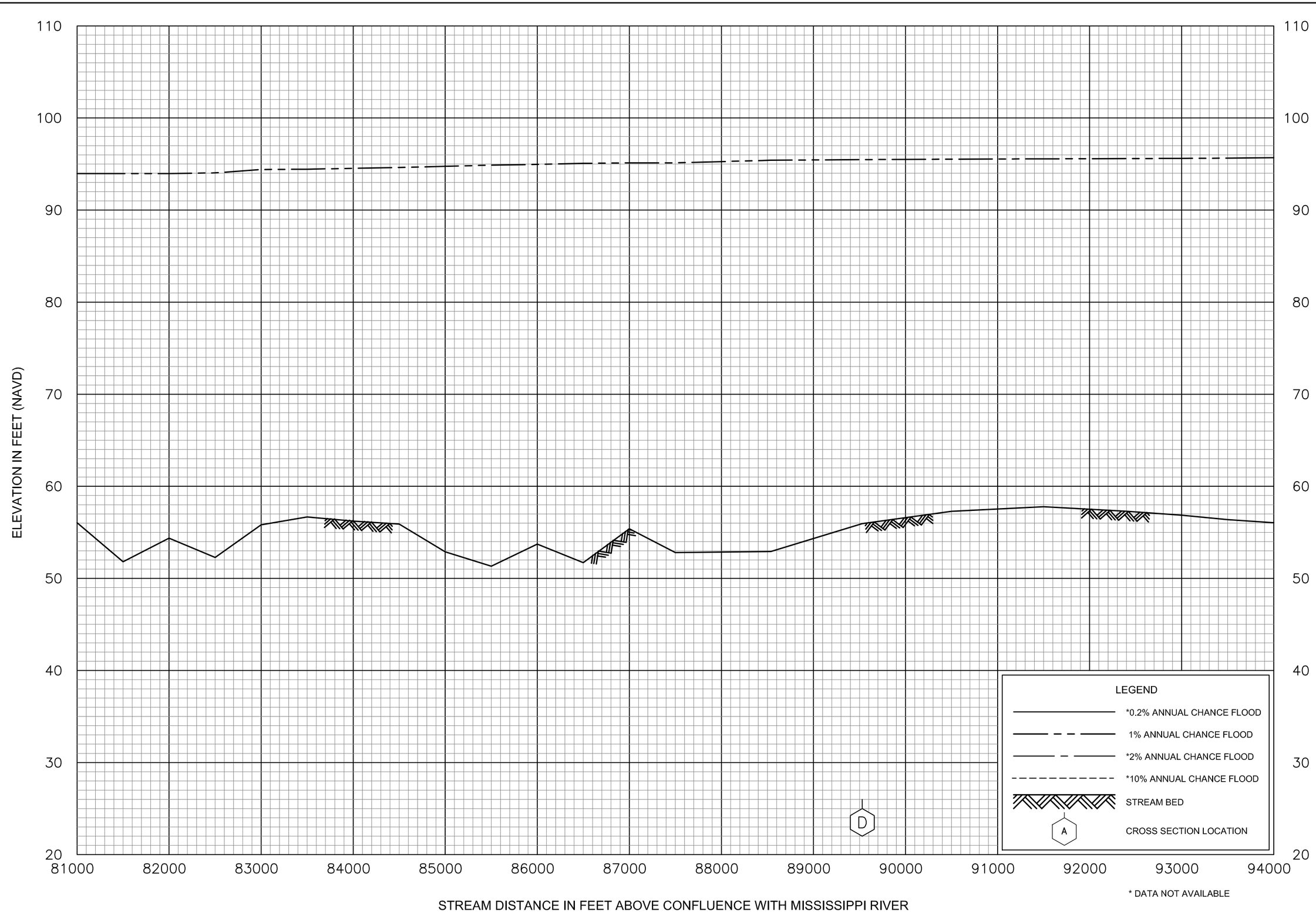
FLOOD PROFILES

BAYOU PIERRE

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLAIBORNE COUNTY, MS
AND INCORPORATED AREAS

02P



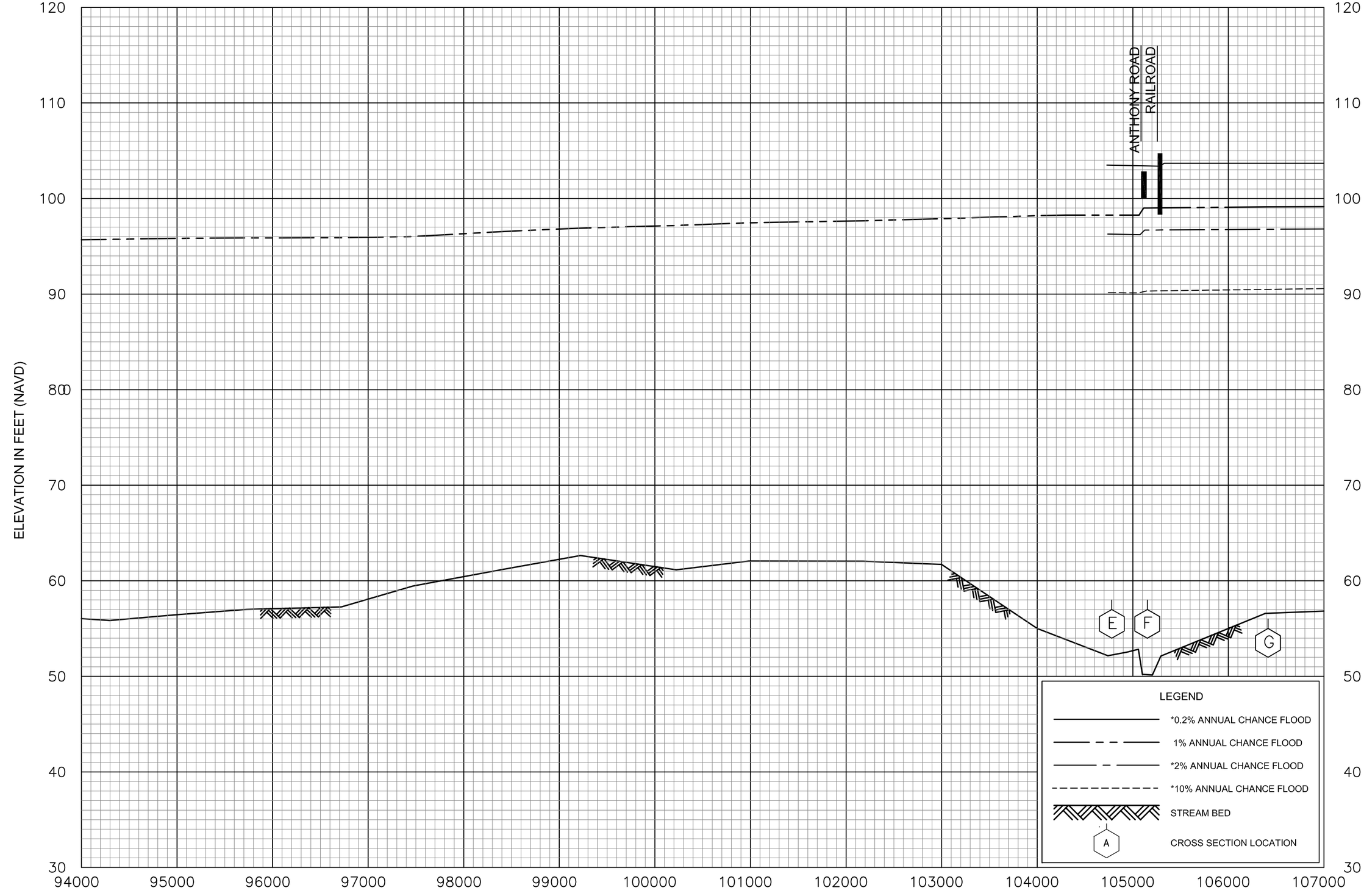
FLOOD PROFILES

BAYOU PIERRE

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLAIBORNE COUNTY, MS
AND INCORPORATED AREAS

03P



* DATA NOT AVAILABLE
APPROXIMATELY 350 FEET DOWNSTREAM
OF ANTHONY ROAD

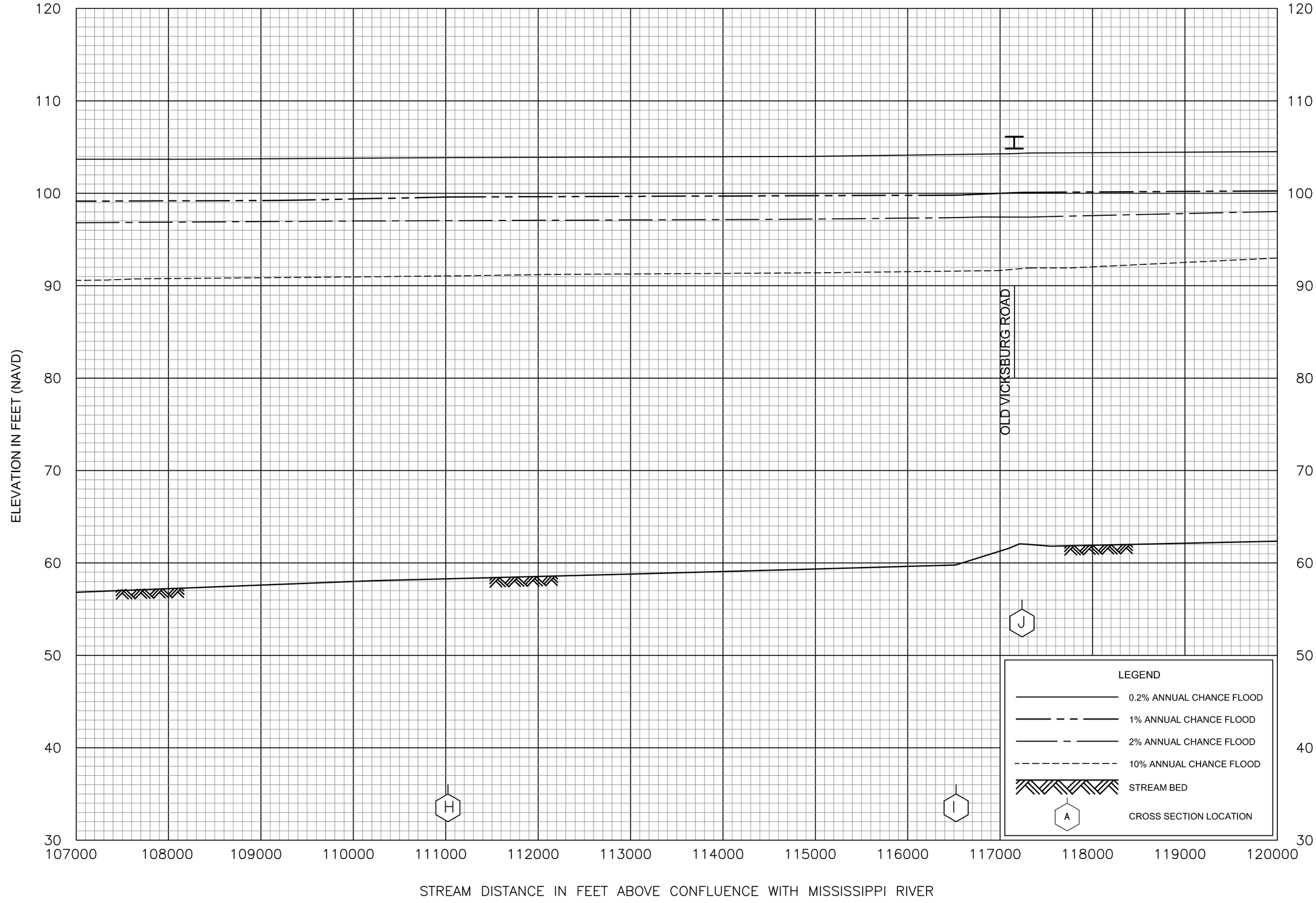
FLOOD PROFILES

BAYOU PIERRE

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLAIBORNE COUNTY, MS
AND INCORPORATED AREAS

04P



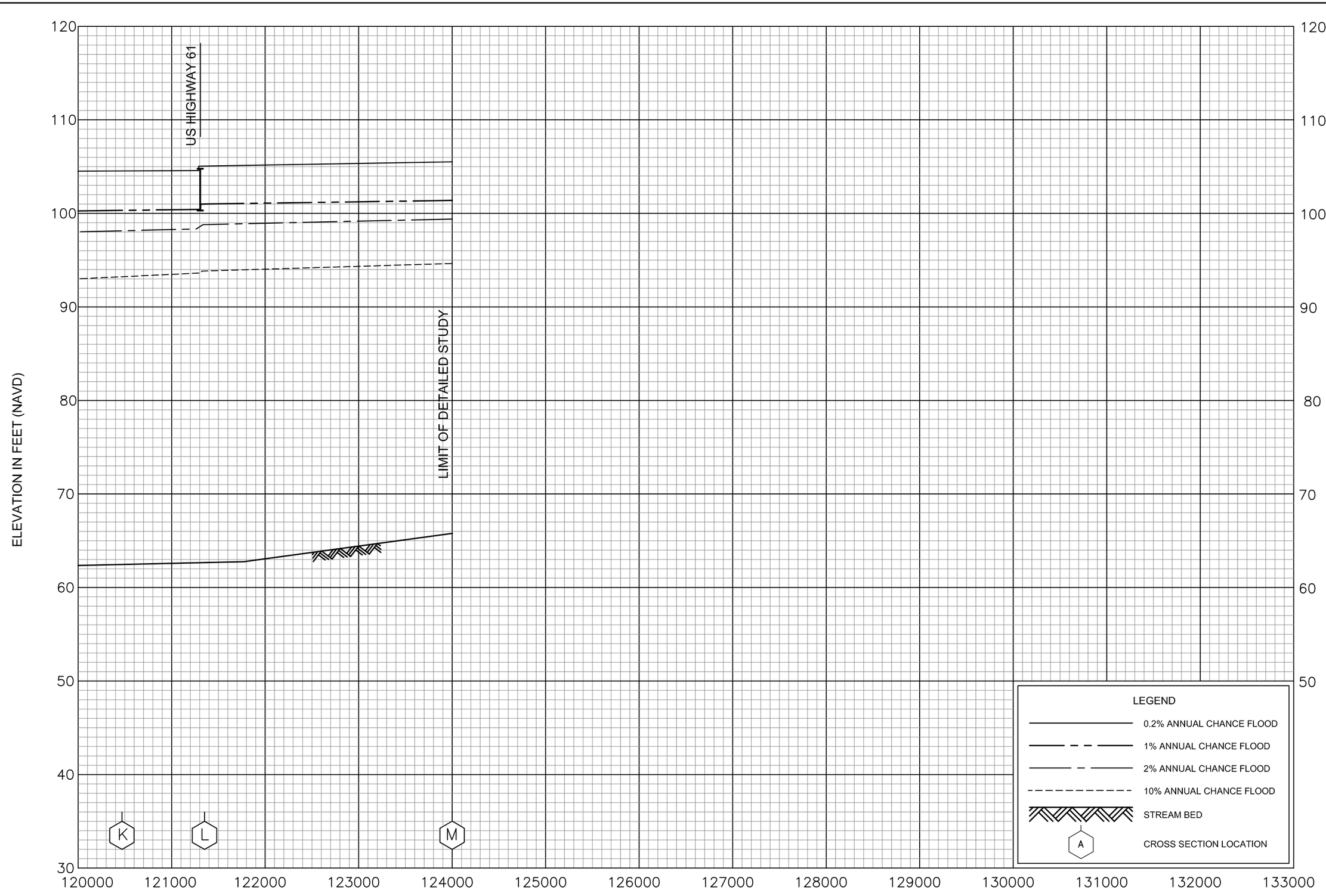
FLOOD PROFILES

BAYOU PIERRE

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLAIBORNE COUNTY, MS
AND INCORPORATED AREAS

05P



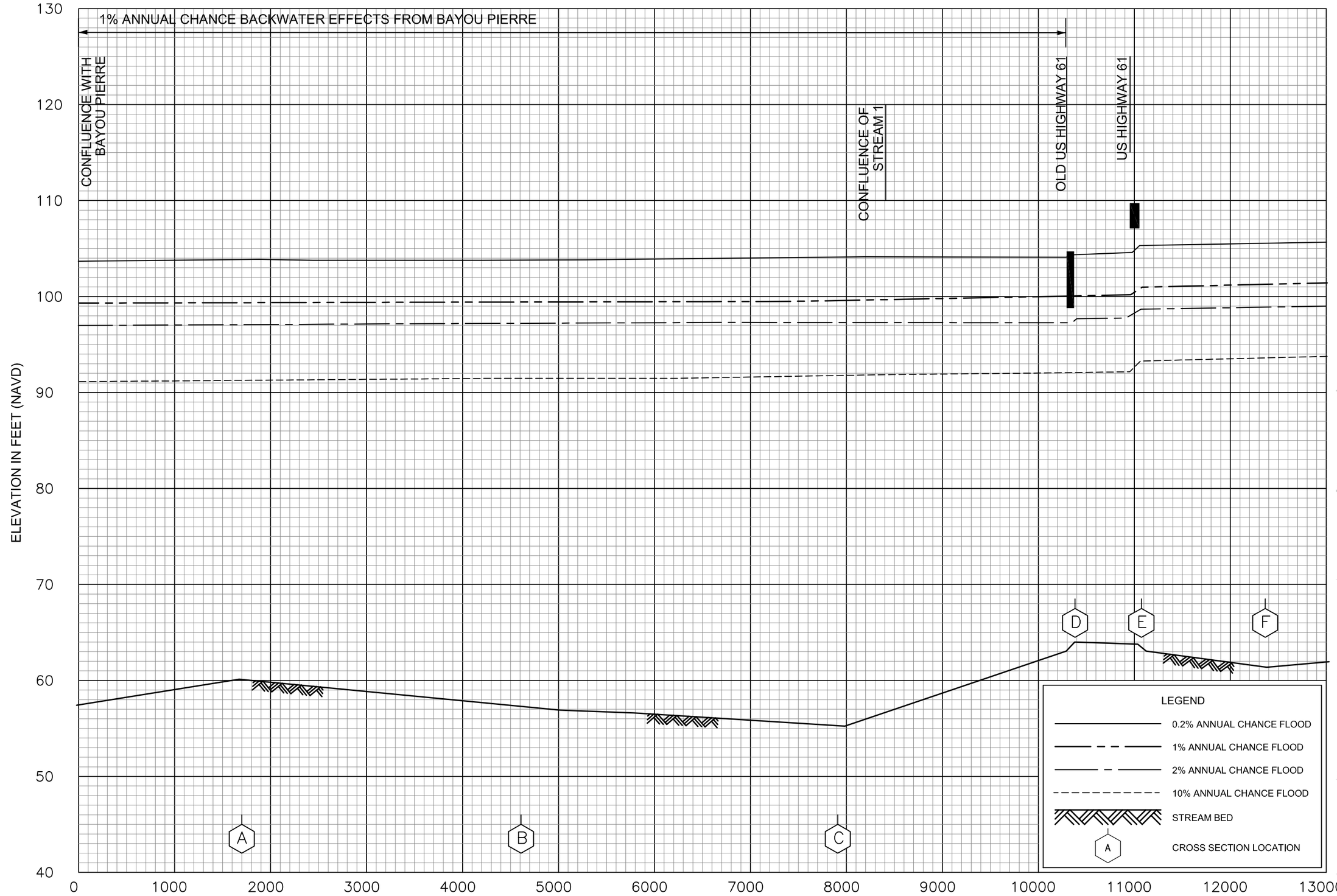
FLOOD PROFILES

BAYOU PIERRE

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLAIBORNE COUNTY, MS
AND INCORPORATED AREAS

06P



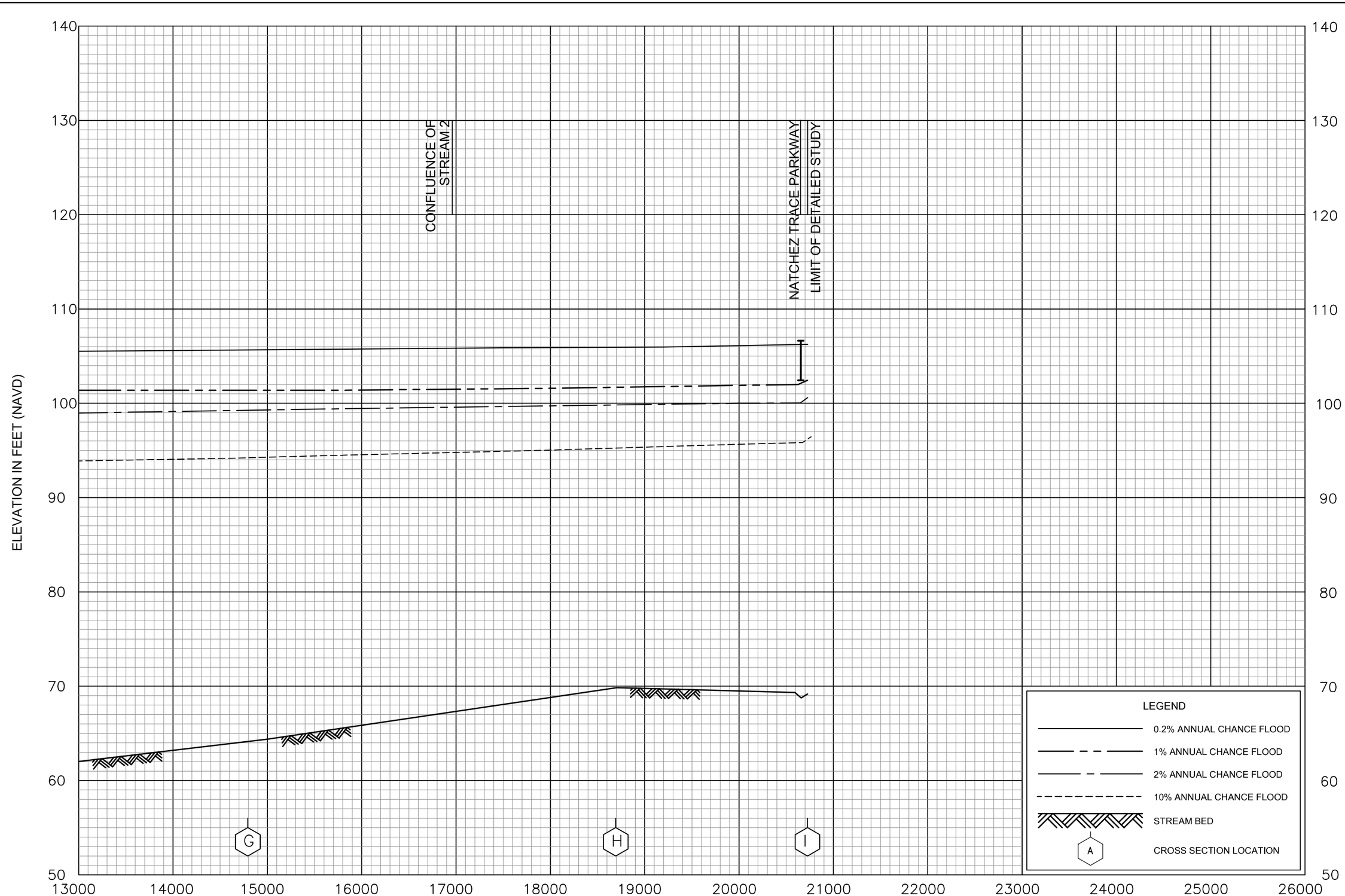
FLOOD PROFILES

LITTLE BAYOU PIERRE

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLAIBORNE COUNTY, MS
AND INCORPORATED AREAS

07P



FLOOD PROFILES

LITTLE BAYOU PIERRE

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLAIBORNE COUNTY, MS
AND INCORPORATED AREAS

08P

ELEVATION IN FEET (NAVD)

120
100
80
60
20
0
−20
−40
−60
−80

COUNTY BOUNDARY

0 1 2 3 4 5 6 7 8 9 10 11 12 13

STREAM DISTANCE IN MILES ABOVE COUNTY BOUNDARY

LEGEND

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

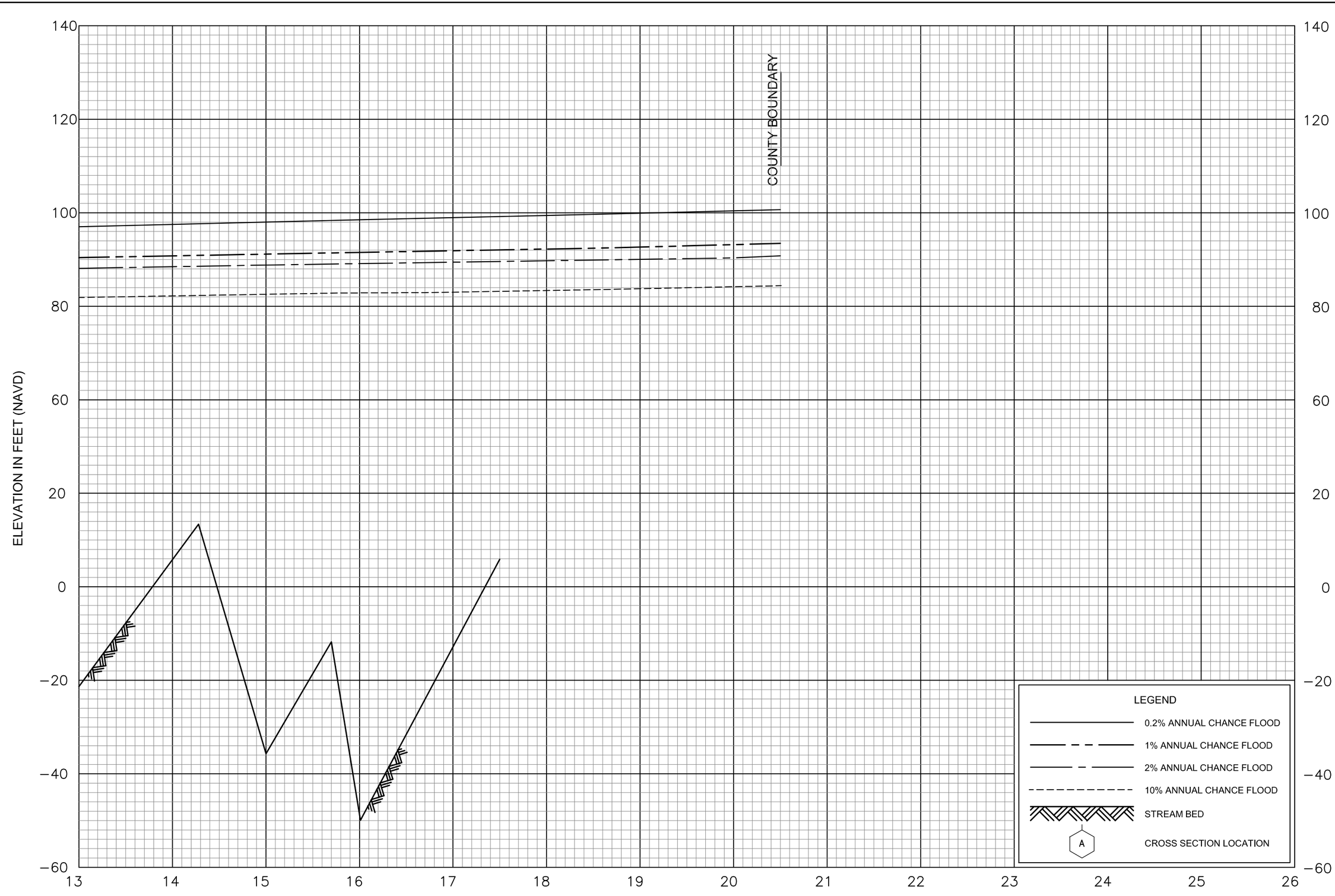
FLOOD PROFILES

MISSISSIPPI RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLAIBORNE COUNTY, MS
AND INCORPORATED AREAS

09P



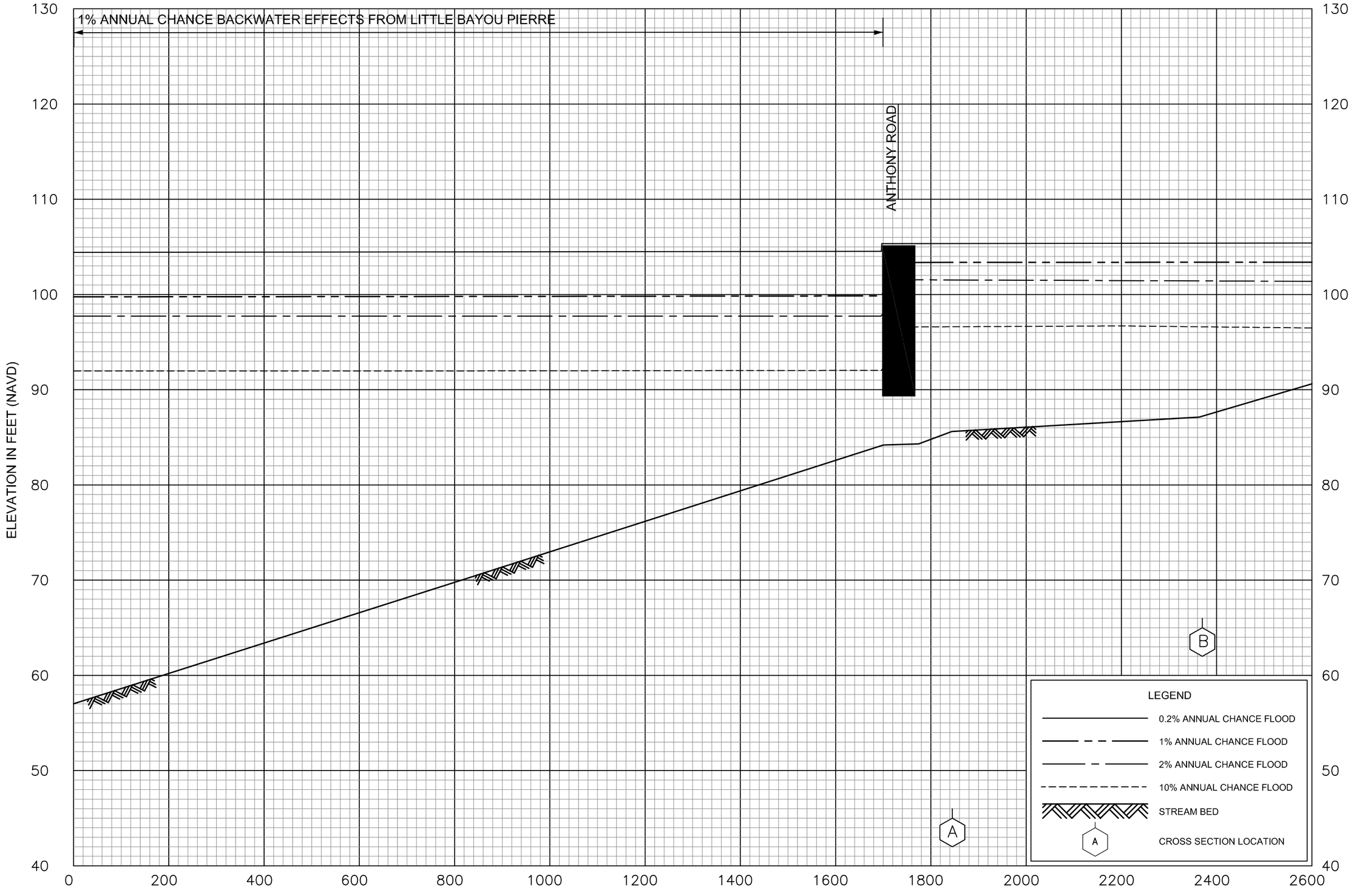
FLOOD PROFILES

MISSISSIPPI RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLAIBORNE COUNTY, MS
AND INCORPORATED AREAS

10P



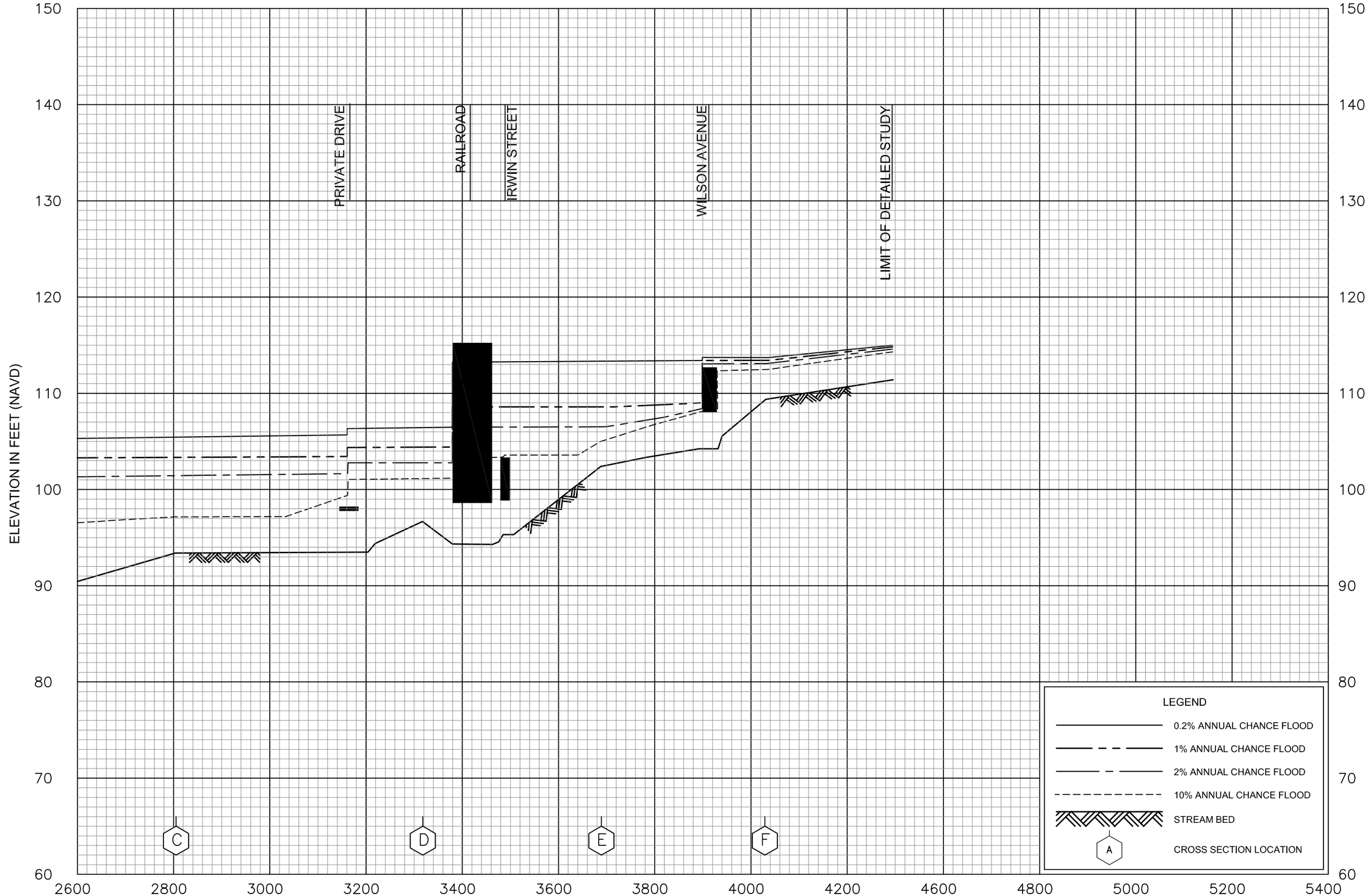
FLOOD PROFILES

STREAM 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLAIBORNE COUNTY, MS
AND INCORPORATED AREAS

11P



FLOOD PROFILES

STREAM 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLAIBORNE COUNTY, MS
AND INCORPORATED AREAS

1% ANNUAL CHANCE BACKWATER EFFECTS FROM LITTLE BAYOU PIERRE

CHINQUEPIN STREET

GREENWOOD STREET

ELEVATION IN FEET (NAVD)

150
140
130
120
110
100
90
80
70
60

0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500

STREAM DISTANCE IN FEET ABOVE CORPORATE LIMITS

A
B
C
D

LEGEND

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

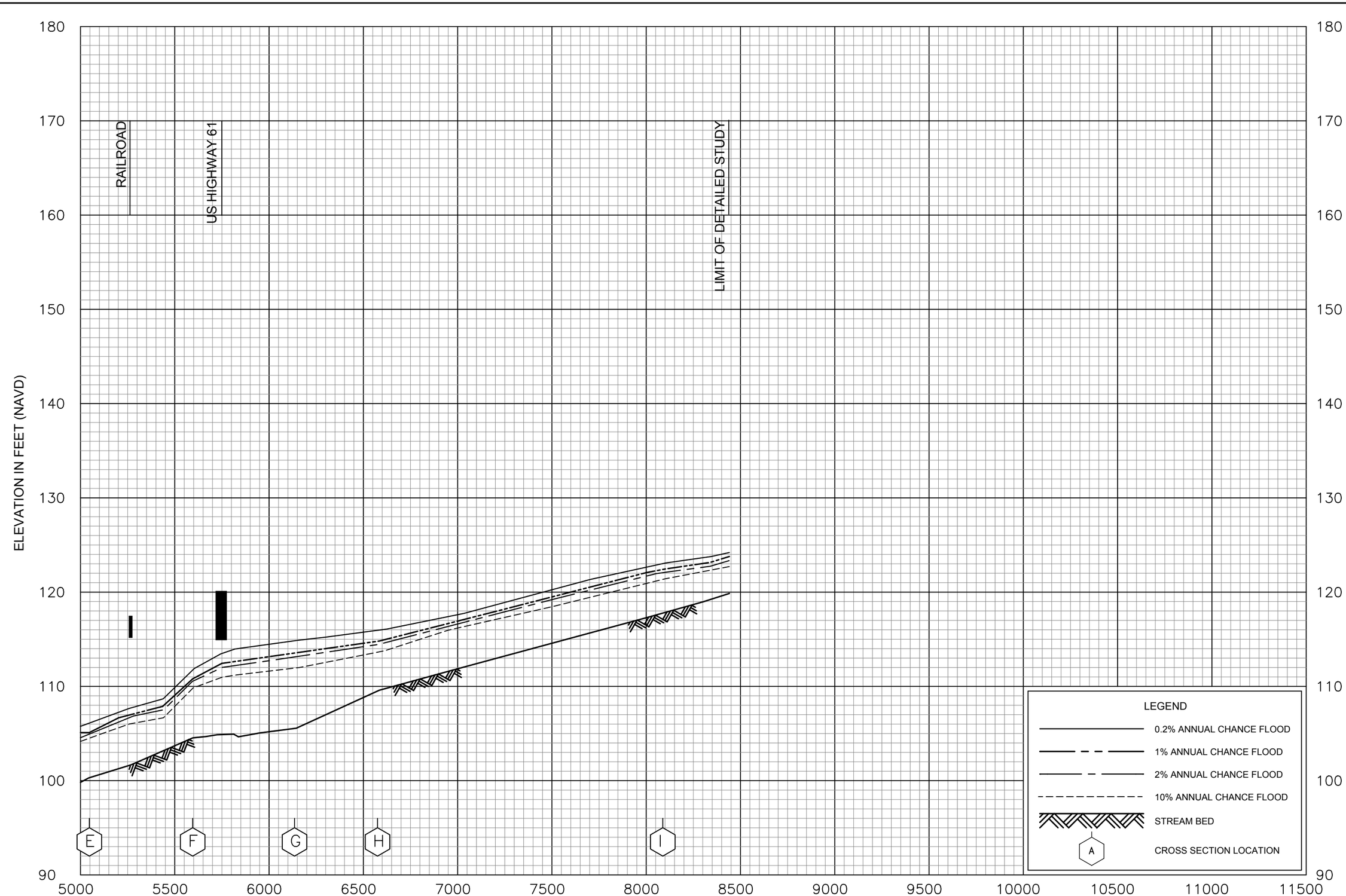
FLOOD PROFILES

STREAM 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLAIBORNE COUNTY, MS
AND INCORPORATED AREAS

13P



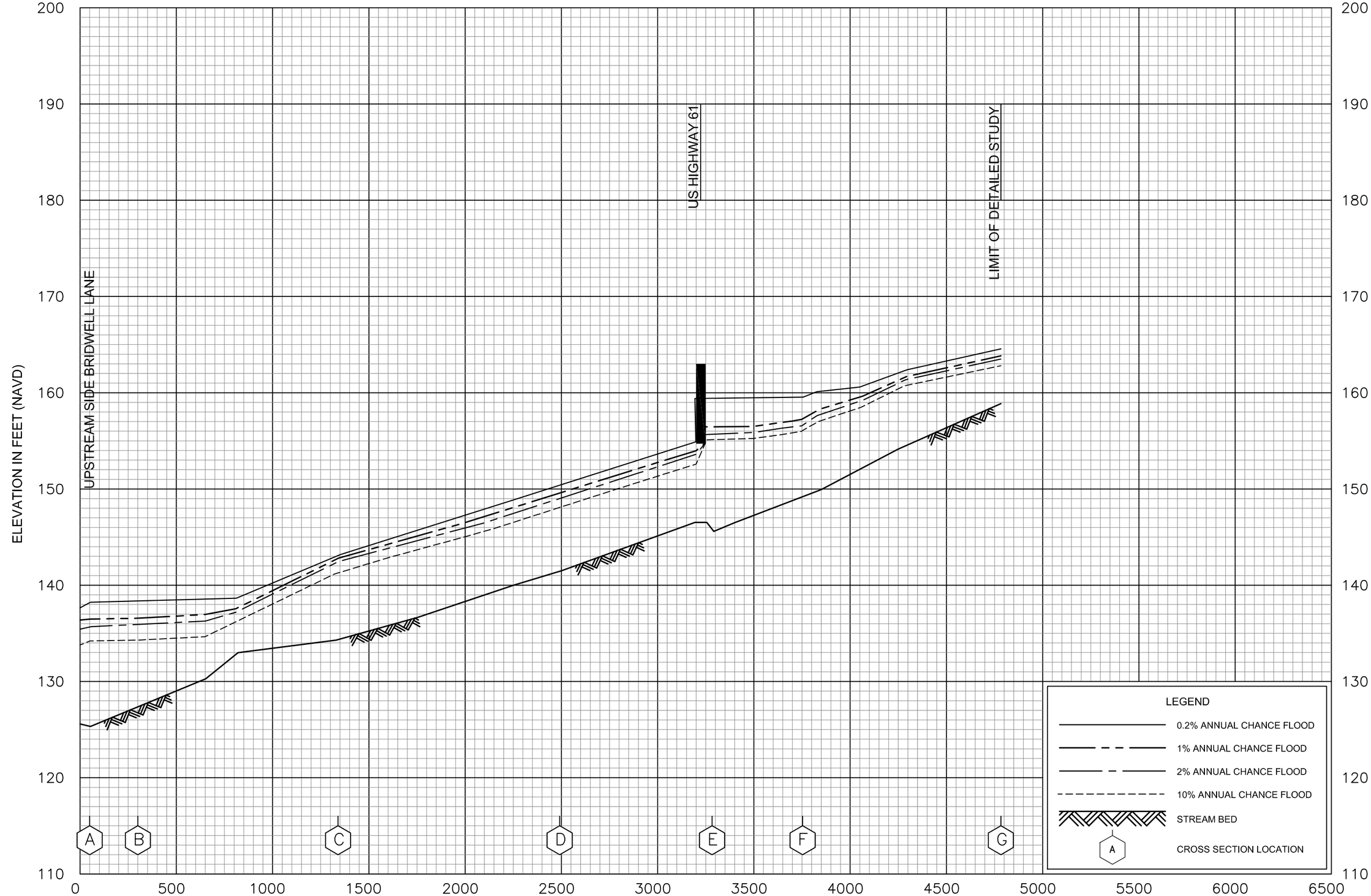
FLOOD PROFILES

STREAM 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLAIBORNE COUNTY, MS
AND INCORPORATED AREAS

14P



FLOOD PROFILES

STREAM 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLAIBORNE COUNTY, MS
AND INCORPORATED AREAS

15P