FLOOD INSURANCE STUDY

YAZOO COUNTY, MISSISSIPPI
AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
BENTONIA, VILLAGE OF	280361
EDEN, VILLAGE OF	280188
SATARTIA, TOWN OF	280205
YAZOO CITY, CITY OF	280189
YAZOO COUNTY (UNINCORPORATED AREAS)	280199

EFFECTIVE:

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
28163CV000A

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) report 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 report may be revised and republished at any time. In addition, part of this FIS report 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 report components.

Selected Flood Insurance Rate Map panels for this community contain information that was previously shown on the corresponding Flood Boundary and Floodway Map panels (e.g., floodways, cross sections). In addition, former flood hazard zone designations have been changed as follows:

Old Zone(s)	New Zone
A1 – A30	AE
B	X
C	X

Initial Countywide FIS Report Effective Date:

Revised Countywide FIS Report Dates:

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FLOOD INSURANCE STUDY
YAZOO 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 Yazoo County, Mississippi, including the Village of Eden, the Towns of Bentonia and Satartia, the City of Yazoo City, and unincorporated areas of Yazoo County (hereinafter referred to collectively as Yazoo 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 Yazoo 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.

May 1979, FIS Town of Satartia

The hydrologic and hydraulic analyses for this study were performed by the U.S. Army Corps of Engineers (USACE), Vicksburg District, for the Federal Insurance Administration under Interagency Agreement Number 1AA-H-76, Project Order Number 6. This work, which was completed in January 1978, covered all significant flooding sources in the Town of Satartia.

October 1979, FIS City of Yazoo City

The hydrologic and hydraulic analyses for this study were performed by the USACE, Vicksburg District for the Federal Insurance Administration under Interagency Agreement Number 1AA-H-16-75, Project Order Number 21. This study was completed in May 1978.

March 1979, FIS Yazoo County (Unincorporated Areas)

The hydrologic and hydraulic analyses for this study were performed by the USACE, Vicksburg District for the Federal Insurance Administration under Interagency Agreement Number 1AA-H-76, Project Order Number 6. This work, which was completed in October 1977, covered all significant flooding sources in the Unincorporated Areas of Yazoo County.

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-2008-CA-5883. This study was completed in July 2010.

The digital base map information files were provided by the State of Mississippi. 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, FIPS ZONE 2302. The horizontal datum was the North American Datum of 1983, GRS 1980 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.

May 1979, FIS Town of Satartia

The identification of streams requiring detailed study was accomplished in a meeting attended by personnel of the USACE, Vicksburg District, Yazoo County Officials, Central Mississippi Planning and Development District, and officials of the Town of Satartia, Mississippi, on April 2, 1975. Community officials and residents provided information regarding flooding problems, historical data on past floods, and other information concerning the community.

The results of the work were coordinated with pertinent records and studies performed by the USGS, the USACE, and other state and local agencies.

On September 13, 1978, the results of the studies performed by the COE were reviewed at a final coordination meeting attended by representatives of the USACE, the FIA, and officials of the Town of Satartia.

October 1979, FIS City of Yazoo City

Community base map selection and the identification of streams requiring detailed study were accomplished during a meeting on January 14, 1975, attended by personnel of the USACE, Vicksburg District, FIA, Central Mississippi Planning and Development District,

officials of Yazoo County, and officials of the City of Yazoo City, Mississippi. Community officials and residents provided information regarding flooding problems, historical data on past floods, and other information concerning the community.

The results of the work were coordinated with pertinent records and studies performed by the USGS, the USACE, Vicksburg District, and the South Delta Planning and Development District, Inc.

On April 10, 1979, the results of the work by the USACE, Vicksburg District, were reviewed at a final coordination meeting attended by personnel of the USACE, the FIA, and the officials of Yazoo City, Mississippi.

March 1979, FIS Yazoo County (Unincorporated Areas)

Identification of past flooding problems and areas of potential flood hazard for approximate study and the designation of streams requiring detailed study were done in meetings attended by personnel of the USACE, Vicksburg District, the FIA, the Central Mississippi Planning and Development District, the South Delta Planning and Development District and officials of Yazoo County, Mississippi in April 1975.

Community officials and residents provided information regarding flooding problems, historical data on past floods, and other information concerning the study area.

The results of the work were coordinated with pertinent records and studies performed by the U.S. Geological Survey (USGS), the USACE, Vicksburg District, the South Delta Planning and Development District, Inc., and officials of Yazoo County, Mississippi.

On June 26, 1978, the results of the work by the USACE were reviewed at a final coordination meeting attended by personnel of the USACE, the FIA, and the officials of Yazoo County, Mississippi.

This Countywide FIS

For this countywide FIS, the Project Scoping Meeting was held on September 9, 2008 in Yazoo City, MS. Attendees for these meetings included representatives from the Mississippi Department of Environmental Quality, Mississippi Emergency Management Agency, FEMA National Service Provider, Yazoo County, the Town of Satartia, the City of Yazoo City, 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 Yazoo 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.

May 1979, FIS Town of Satartia

The May 1979, FIS for the Town of Satartia covered the incorporated area of the Town of Satartia, Mississippi. Officials determined that Satartia Creek located riverside of the Satartia ring levee, along the north edge of town be studied in detail. Since the major source of flooding to the area is from the Yazoo River and Mississippi River backwater, a detailed analysis of the Yazoo River was also made based on existing data. Flooding landside of the levee was not studied in detail. In determining which areas were to be studied in detail, consideration was given to developments expected to occur through 1982.

Satartia Creek was surveyed and evaluated from its confluence with the Yazoo River north of town, to the town corporate limits at the Satartia Consolidated School, Southeast.

October 1979, FIS City of Yazoo City

The October 1979, Yazoo City FIS covered the incorporated area of Yazoo City, Mississippi. Flooding caused by Willis Creek, City Ditch, Lintonia Avenue Canal, Town Creek, Town Creek Lateral, the storm drain at Fifteenth Street, and the storm drain at Ninth Street were studied in detail. All of the drainage facilities studied in detail were within the corporate limits of Yazoo City. Also, three tributaries of Willis Creek in north Yazoo City between the railroad and Highway 3 were identified. Flooding along these tributaries was studied by the approximate method.

March 1979, Yazoo County (Unincorporated Areas) FIS

The March 1979, Yazoo County FIS covered the unincorporated areas of Yazoo County, Mississippi. Flooding caused by the overflow of a selected reach of Piney Creek and Piney Creek Tributary, north of Yazoo City, was studied in detail. Flooding problems caused by the overflow of the Big Sunflower, Yazoo, and Big Black Rivers were studied by approximate methods.

All information derived from this study is based on hydrologic and hydraulic conditions that existed in the county at the time of study and that remained in effect until 1982.

This Countywide FIS

For this countywide FIS, 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 Steele Bayou Control Structure 1.0-percent annual chance flood elevation and the 10-, 2.0-, 1.0-, and 0.2-percent annual chance stillwater elevations for Collins Creek were also computed (Dept. of Homeland Security, 2008). The Big Black River study was taken from the Hinds County Flood Insurance Study. The study covers the Big Black River from the county boundary to a point approximately 3.5 miles upstream of the confluence of Bogue Falia Creek (Dept. of Homeland Security, 2009).

The scope and methods of study were proposed to, and agreed upon, by FEMA and the State of Mississippi.

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

2.2 Community Description

Yazoo County is located in west central Mississippi and is bordered on the west by Isssaquena and Sharkey Counties, Mississippi; on the south by Hinds and Warren Counties, Mississippi; on the north by Holmes and Humphreys Counties, Mississippi; and on the east by Madison County, Mississippi. Yazoo County is served by U.S. U.S. Interstate 55, U.S. Highway 49; State Highways 3, 16, 432, and 433; and the Canadian National Railroad. The 2009 population was reported to be 27,981 (U.S. Census Bureau, 2010).

The climate of Yazoo County is influenced mainly by its subtropical latitude, the huge landmass to the north, its proximity to the warm waters of the Gulf of Mexico, and the prevailing southerly winds. The minimum mean temperature is 44.9 ^{o}F in January, and the maximum mean temperature is 82.1 ^{o}F in July. Moisture is ample throughout the year, often with prolonged rainfall in the winter and spring due to warm air from the Gulf of Mexico overriding cooler air masses near the ground surface. The mean annual precipitation is 60 inches (NOAA, 2010). Yazoo County consists of approximately 934 square miles

2.3 Principal Flood Problems

The western one-third of Yazoo County is part of the Mississippi Delta and is bordered by the Sunflower and Yazoo Rivers on the west and east, respectively. During periods of high water on the Big Sunflower and Yazoo Rivers, much of the delta area of Yazoo County will be inundated. The flood waters are mainly backwater from the Big Sunflower and Yazoo Rivers.

2.4 Flood Protection Measures

The Yazoo Headwater project implemented by the USACE consists of four lakes: Arkabutla, Enid, Grenada, and Sardis; about 800 miles of stream channel improvements; and about 600 miles of levees. Channel enlargement, dredging, and cutoffs lowered flood stages by increasing carrying capacity of the Yazoo River, and levees provide additional protection against overflows.

As features of the Yazoo Headwater Project, flood control measures were constructed in the vicinity of Yazoo City to protect the low-lying lands of the city form headwater floods of the Yazoo River. Additional improvements completed in Yazoo City under authority of the Flood Control Act and its amendments have included construction of two Yazoo River cutoffs, levees on each side of the new channels, an alteration and extension of the sanitary sewer system, a sewerage pumping plant, and a storm water pumping plant.

The Yazoo Basin Backwater Project, providing protection to approximately 1,550 square miles in the lower Mississippi Delta, prevents backwater flooding from the Mississippi

River except during rare floods. The Backwater Project basically consists of approximately 100 miles of levees, a connecting channel between the Sunflower River and Steele Bayou, and appurtenant drainage works. Overtopping of the backwater levees would occur during the Mississippi River Project Flood, which is used in lieu of the 0.2-percent annual chance flood for this study. The overtopping section of the backwater levees, constructed to a grade of approximately 106.7 feet NAVD, will be overtopped during the Mississippi Project Flood. The levee is designed to be overtopped during rare floods as part of the Mississippi River Valley flood protection system. Protection is contingent on the use of storage in the backwater system to reduce flood peaks and ensure the integrity of the Mississippi Levee System.

In Satartia, a ring levee system has been constructed around the area. This levee system is designed to protect against the 1-percent annual chance flood. This levee system is a part of the Yazoo Basin Backwater Project.

A locally built levee exists along Willis Creek from a point near Grand Avenue westward to approximately the extension of Gordon Street. This levee serves to contain low to moderate flood flows along Willis Creek; however, this levee system is not sufficient to contain the 10-percent annual chance flood.

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.

May 1979, FIS Town of Satartia Analyses

The discharge-frequency relationships for Satartia Creek were determined by relating the discharge from similar watersheds, and by relating known precipitation-frequency relationships for hydrologic. Known relationships for hydrologic characteristics for similar watersheds were compiled to determine a regionalized runoff-frequency relationship for those watersheds as provided by the USGS (Dept. of Interior, 1976).

Based upon the determined runoff-frequency relationship for the watershed, Snyder unit hydrograph coefficients for the Satartia Creek Watershed were determined using the relationships expressed in USACE's "Flood – Hydrograph Analyses and Computations" and "HEC-1, Flood Hydrograph Package" (USACE, 1959 and 1973).

The discharges for the 10-, 2.0-, 1.0-, and 0.2-percent annual chance floods were then computed utilizing precipitation-frequency relationships from Technical Paper No. 40 (Dept. of Commerce, 1961), and the HEC-1 computer program (USACE, 1973).

A comparison of the results of this method was made with the relationships determined by the methods described in "Floods in Mississippi, Magnitude & Frequency" (Dept. of the Interior, 1976). This comparison substantiates the results of the analyses.

The discharges for the 10-, 2.0-, 1.0-, and 0.2-percent annual chance floods on the Yazoo River at Satartia were derived form the computed flow frequencies at Belzoni, Mississippi. Peak discharges for the Yazoo River at Belzoni, Mississippi for the 10-, 2.0-, 1.0-, and 0.2-percent annual chance recurrence intervals were determined from a Log Pearson Type III frequency analysis as recommended in "Guidelines for Determining Flood Flow Frequencies," U.S. Water Resources Council Bulletin No. 17 (Water Resources Council, 1976). The period of Record used in this analysis was 1932-1975; however, the period 1932-1954 was adjusted to consider the four Yazoo Basin headwater lakes in operation. These flows were adjusted, based on observed and recorded historical flows.

October 1979, FIS City of Yazoo City Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for floods of the selected recurrence intervals for Willis Creek, City Ditch, Lintonia Avenue Canal, Town Creek, Town Creek Lateral, Storm Drain at 15th and the Storm Drain at Ninth Street.

The discharge-frequency relationships for the streams in Yazoo City were determined by relating the discharges from similar watersheds, and by relating known precipitation-frequency relationships to a synthetic unit hydrograph. Known relationships for hydrologic characteristics for similar watersheds were compiled to determine a regionalized runoff-frequency relationship for those watersheds (Dept of the Interior, 1965) provided by the USGS. Based upon the determined runoff-frequency relationship for the various watersheds, Snyder unit hydrograph coefficients for the City Ditch, Willis Creek, Ninth Street Drain, Storm Drain at 15th, Lintonia Canal, Town Creek, and Town Creek Lateral watersheds were determined using the relationships (USACE, 1959 and Chow, 1964) and were modified for urbanization (USACE, 1970).

The discharges for the 10-, 2.0-, 1.0-, and 0.2-percent annual chance floods were then computed utilizing precipitation-frequency relationships form Technical Paper No. 40 (Dept. of Commerce, 1961) using the HEC-1 computer program (USACE, 1973).

A comparison of the results of this method was made with the relationships determined by the USGS regionalized method (Dept. of the Interior, 1965). This comparison substantiates the results of the analyses.

The Yazoo City Pumping Station, located near the downstream end of the Jonestown cutoff about two miles southwest of Yazoo City, was completed in January 1957 as a component of the Yazoo City Protection Works. The pumping station consists of three 8 by 8 foot conduits which provide water passage between the intake structure, the pump house (three 180 cubic feet per second pumps), and an outlet basin. The pump station provides storm drainage for 6,230 acres consisting of agricultural, residential, and industrial lands.

The upper and lower sumps, located north of the Yazoo City Pumping Station, were designated as a ponding area and the floodwaters resulting form a 12-hour duration (1.0 percent annual chance rainfall with 90 percent runoff inundates the area to elevations varying between 98 and 99 feet NAVD). This considers the pumping station in operation with about 535 acre-feet pumped during the 12-hour storm. The floodgates were considered closed during operation of the pumps with a high Yazoo River.

March 1979, Yazoo County (Unincorporated Areas) FIS

The discharge-frequency relationships for Piney Creek and its tributary were determined by a log-Pearson Type III statistical analysis of gage data and by relating the discharge from similar watersheds. A statistical analysis was made of records form 1953 to 1970 from a gaging station located on Piney Creek (Dept. of Interior, 1975). Based upon the flow-frequency determination, Snyder coefficients for the Piney Creek watershed were determined using the relationships expressed in the USCE report "Flood-Hydrograph Analyses and Computation" (USACE, 1959), and in Chow's "Handbook of Applied Hydrology" (Chow, 1964).

The discharges for the 10-, 2.0-, 1.0-, and 0.2-percent annual chance floods were then computed utilizing precipitation-frequency relationships from Technical Paper No. 40 (Dept. of Commerce, 1961), and using the HEC-1 computer program (USACE, 1973).

The Mississippi River levee provides protection to the Lower Yazoo Basin for major headwater floods as the mainline levee ties into the Yazoo backwater levee just north of Vicksburg. The levee is designed to overtop at the Yazoo Backwater Fuseplug and flood to an elevation of 114.2 feet NAVD. The Project Flood elevation is used in lieu of a 0.2-percent annual chance elevation.

A comparison of the results of this method was made by the Rational Method described in Handbook of Applied Hydrology, (Chow, 1964) and flow-frequency relationships described in the USGS report, "Floods in Mississippi, Magnitude & Frequency" (Dept. of the Interior, 1976) determined by the HEC-1 computer program (USACE, 1973). This comparison substantiates the results of the analyses.

This Countywide FIS Analysis

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.

For the Big Black River, the discharges were calculated based on regional regression equations with modifications made to reflect stream gage weighting, flood control, and urbanization as necessary (Dept. of Homeland Security, 2009).

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
BIG BLACK RIVER					
At a point approximately 6 miles upstream of the confluence of Porter Creek	252.60	*	*	55,733	*
At a point approximately 7.8 miles upstream of the confluence of Porter Creek	244.38	*	*	52,365	*
CITY DITCH					
At mouth	7.34	2,876	3,791	4,169	*
At Jefferson Street	6.95	2,361	3,112	3,423	*
At Lintonia Avenue	6.03	1,875	2,472	2,718	*
At Ninth Street	3.50	1,372	1,808	1,989	*
FIFTEENTH STREET DITCH					
At confluence with City Ditch	0.25	300	376	427	519
LINTONIA CANAL					
At confluence with City Ditch	0.92	1,631	2,007	2,279	2,765
Above Champlin Avenue	0.61	973	1,217	1,379	1,673
NINTH STREET DITCH					
At confluence with City Ditch	0.48	930	1,145	1,300	1,576
At Lamar Avenue	0.39	780	964	1,094	1,327
PINEY CREEK					
At confluence with Yazoo River	76.4	20,013	29,796	34,513	46,215
At Railroad Bridge	68.8	17,853	26,620	30,875	41,383
PINEY CREEK TRIBUTARY					
At confluence with Piney Creek	7.52	3,983	6,062	7,294	9,751
SATARTIA CREEK					
At Satartia	3.98	2,410	3,324	3,772	4,600

*Data not available

TABLE 1. SUMMARY OF DISCHARGES (continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. mi.)	PEAK DISCHARGES (cfs) 10-percent	2-percent	1-percent	0.2-percent
TOWN CREEK					
At mouth	0.65	1,067	1,312	1,491	1,809
At Washington Street	0.52	1,040	1,286	1,459	1,770
Above Town Creek Lateral	0.25	552	675	766	929
TOWN CREEK LATERAL					
At confluence with Town Creek	0.14	272	335	380	461
WILLIS CREEK					
At mouth	4.19	2,220	2,864	3,190	3,982
At wooden bridge	3.27	2,474	3,125	3,563	4,377
At U.S. Highway 49	2.18	2,252	2,841	3,231	3,946
YAZOO RIVER					
At Yazoo City**	8,900	39,800	48,200	51,000	54,600
At Belzoni	7,830	36,000	43,000	46,000	53,000

** Flows at Yazoo City are total latitude and include Will M. Whittington channel flow.

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.

May 1979, FIS Town of Satartia Analyses

Cross section data for the streams in the study area were obtained by field measurement. All bridges and culverts were field surveyed to obtain elevation data and structural geometry. Cross sections were located at close intervals upstream and downstream of bridges and culverts to compute significant backwater effects of these structures.

Roughness coefficients (Manning's "n") were estimated by field inspection at each cross section. Manning's "n"-values for Satartia Creek ranged from 0.040 to 0.060 for the channel itself as well as the overbank areas. Actual backwater computations were made using the computer program HEC-2 (USACE, 1972). Starting water-surface elevations on Satartia Creek were calculated flood elevations on the Yazoo River for floods having the same recurrence interval.

October 1979, City of Yazoo City FIS Analyses

Cross section data for waterways in Yazoo City were obtained by field measurement. All bridges and culverts were surveyed to obtain elevation data and structural geometry.

Roughness coefficients (Manning's "n") were estimated by field inspection at each cross section. The range of "n"-values for each stream in Yazoo City is as follows:

Stream	Channel	Overbank
Willis Creek	0.016-0.075	0.035-0.075
Town Creek	0.010-0.075	0.020-0.100
Town Creek Lateral	0.045-0.100	0.070
Lintonia Avenue Canal	0.016-0.040	0.030-0.120
Storm Drain at 15th St.	0.080	0.050
Ninth Street Ditch	0.033	0.035-0.050
City Ditch	0.020-0.045	0.030-0.070

Backwater computations were made using the computer program HEC-2 (USACE, 1972). Flood profiles were drawn showing computed water-surface elevation to an accuracy of 0.5 foot for floods of the selected recurrence intervals. Starting elevations were developed form known flood elevations in the Yazoo City sump area.

The water-surface elevations presented in this report differ in some locations form those shown in the USACE Report, "Interior Ponding at Yazoo City" (USACE, 1972). The reason for these changes is because of consideration of the peak flows occurring along streams which were not studied in detail in the previous reports.

In this report the Mississippi River Project Flood (MRPF) elevation has been used in lieu of the 0.2-percent annual chance flood elevation in some circumstances. The elevation of the MRPF at Yazoo City is 114.2 feet NAVD; the 0.2-percent annual chance flood elevation was used when it was found to be higher.

A locally constructed levee is located along portions of Willis Creek. To take into account the flow capacity at the Willis Creek Levee System, a series of backwater profiles were computed along Willis Creek. The capacity of Willis Creek was then subtracted from the 10-, 2.0-, and 1.0-percent annual chance flood flows and the resulting flow was used in the computation of an overbank backwater profile for each frequency.

March 1979, Yazoo County (Unincorporated Areas) FIS Analyses

Cross section data for the streams in the study area were obtained by field measurement. All bridges and culverts were field surveyed to obtain elevation data and structural geometry. Cross sections were located at close intervals upstream and downstream of bridges and culverts to compute significant backwater effects of these structures.

Roughness coefficients (Manning's "n") for the computations were estimated on the basis of field inspection at each cross section. The roughness coefficients ranged from 0.025 to 0.040 for the main channel and 0.025 to 0.100 for the overbank areas.

Flood profiles were drawn showing computed water-surface elevations to an accuracy of 0.5 foot for floods of the selected recurrence intervals (Exhibit 1). Water-surface

elevations of floods of the selected recurrence intervals were developed using the USACE HEC-2 computer step-backwater model (USACE, 1972). The starting water-surface elevations were determined form known elevations of the Yazoo River backwater at the confluence with Piney Creek. The Mississippi River Project Flood elevation was used for the 0.2-percent annual chance starting water surface elevation.

Areas studied by approximate methods were analyzed using known high water marks, aerial mapping of previous floods, and historical flood reports.

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 4.0.0 computer program (USACE, 2008). The model was run for the 1-percent-annual-chance storm for the limited detail and approximate studies.

The water surface elevations for Collins Creek were derived from hydrologic routings of interior runoff through ponding areas and floodgates, taking into consideration Mississippi River and Yazoo River stages. These areas are controlled by floodgates that regulate inflow and outflow, creating a ponding situation since the topography is typical of low-lying and sump areas. Stage elevations for Collins Creek were determined using historical flood records data (Dept. of Homeland Security, 2008).

The 1.0-percent annual-chance flood elevation for the Steele Bayou Control Structure was determined by analysis of historical gage records. Much of the county north of the Control Structure is below the computed flood elevation.

The frequency-elevation relationships for the shallow flooding areas in the community are presented in Table 2, "Summary of Elevations."

TABLE 2 – SUMMARY OF ELEVATIONS

FLOODING SOURCE AND LOCATION	PEAK STAGE (cfs)			
	10-percent	2-percent	1-percent	0.2-percent
Collins Creek	90.9	92.2	92.9	114.4
Steele Bayou At Control Structure	*	*	100.1	*
Lake Yazoo shoreline in the vicinity of Yazoo City Corporate limits	94.2	95.7	97.7	114.2

* Data Not Available

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.

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 0.26 feet to the NAVD88 elevation. The -0.26 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, 1963). The BFE's 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. Between cross sections, the boundaries were interpolated using 5-foot contour intervals developed from the March 2006 2-foot digital orthophotography provided by the State of Mississippi.

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 the 5-foot contours developed from the March 2006 2-foot digital orthophotography from the State of Mississippi, 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 2). 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.

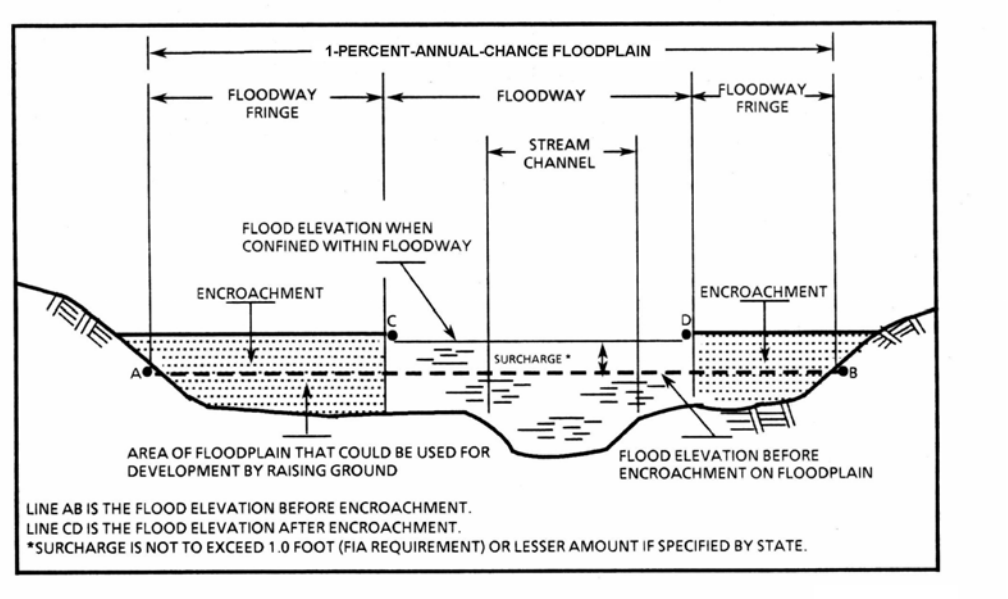
Near the mouths of streams studied in detail, floodway computations are made without regard to flood elevations on the receiving water body. Therefore, “Without Floodway” elevations presented in Table 3, “Floodway Data,” for certain downstream cross sections are lower than the regulatory flood elevations 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 1.

Floodways were calculated for Lintonia Avenue Canal, Piney Creek, Piney Creek Tributary, Satartia Creek, and Willis Creek.



FLOODWAY SCHEMATIC Figure 1

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
LINTONIA AVENUE CANAL								
A-H[2]	*	*	*	*	*	*	*	*
I	4,170	29	150	9.2	125.7	125.7	126.5	0.8
J	5,490	113	393	3.5	128.6	128.6	128.6	0.0
K	6,650	29	119	11.6	135.2	135.2	135.5	0.3
L	7,100	34	124	11.1	150.2	150.2	150.2	0.0
PINEY CREEK								
A	0	4,284	17,430	2.0	108.0	103.8[3]	104.8	1.0
B	5,150	4,697	23,125	1.5	108.0	105.0[3]	105.9	0.9
C	8,650	4,237	8,482	4.1	108.0	106.9[3]	106.9	0.0
D	11,750	3,359	17,987	1.9	109.9	109.9	109.9	0.0
E	15,800	1,453	8,270	3.7	114.2	114.2	115.0	0.8
F	16,500	1,488	13,095	2.4	119.5	119.5	119.5	0.0
G	17,200	868	7,603	4.1	120.6	120.6	120.6	0.0
H	18,300	778	7,004	4.4	121.1	121.1	121.3	0.2

[1] FEET ABOVE MOUTH
[2] FLOODWAYS NOT COMPUTED, AREA ADJACENT TO THESE STREAMS IS FULLY DEVELOPED.
[3] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM YAZOO RIVER

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

YAZOO COUNTY, MS AND INCORPORATED AREAS

FLOODWAY DATA

LINTONIA AVENUE CANAL – PINEY CREEK

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
PINEY CREEK TRIBUTARY								
A	1,400	300	1,475	4.9	113.3	113.3	113.7	0.4
B	2,600	133	1,048	7.0	116.3	116.3	117.1	0.8
C	4,200	67	649	11.2	120.9	120.9	120.9	0.0
SATARTIA CREEK								
A	260	53	404	9.3	105.1	81.8[3]	82.8	1.0
B	2,025	30	317	11.9	105.1	94.4[3]	95.2	0.8
C	2,580	54	577	6.5	105.1	98.2[3]	98.9	0.7
WILLIS CREEK								
A-L[2]	*	*	*	*	*	*	*	*
M	18,700	378	2,201	1.5	127.2	127.2	128.2	1.0
N	20,095	73	599	5.4	132.0	132.0	132.9	0.9
O	20,795	39	443	7.3	133.3	133.2	133.8	0.6

[1] FEET ABOVE MOUTH
[2] FLOODWAYS NOT COMPUTED, LARGE UNCONFINED FLOW AREAS LOCATED ADJACENT TO THE STREAM.
[3] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM YAZOO RIVER

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

YAZOO COUNTY, MS AND INCORPORATED AREAS

FLOODWAY DATA

PINEY CREEK TRIBUTARY – STARTIA CREEK – WILLIS CREEK

5.0 INSURANCE APPLICATION

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 Yazoo 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
Bentonia, Town of	--	--	--	--
Eden, Town of	July 19, 1974	--	--	--
Satartia, Town of	August 23, 1974	June 25, 1976	November 1, 1979	--
Yazoo City, City of	June 21, 1974	June 25, 1976	April 15, 1980	--
Yazoo County (Unincorporated Areas)	September 13, 1974	March 3, 1978	September 28, 1979	--

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

YAZOO COUNTY, MS

AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

7.0 OTHER STUDIES

Information pertaining to revised and unrevised flood hazards for each jurisdiction within Yazoo 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 Yazoo County 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 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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ELEVATION IN FEET (NAVD)

180
170
160
150
140
130
120
110
100
90

COUNTY BOUNDARY

CONFLUENCE OF GRANTS CREEK

0 2,000 4,000 6,000 8,000 10,000 12,000 14,000 16,000 18,000 20,000 22,000 24,000 26,000

STREAM DISTANCE IN FEET ABOVE COUNTY BOUNDARY

A

LEGEND

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

* DATA NOT AVAILABLE

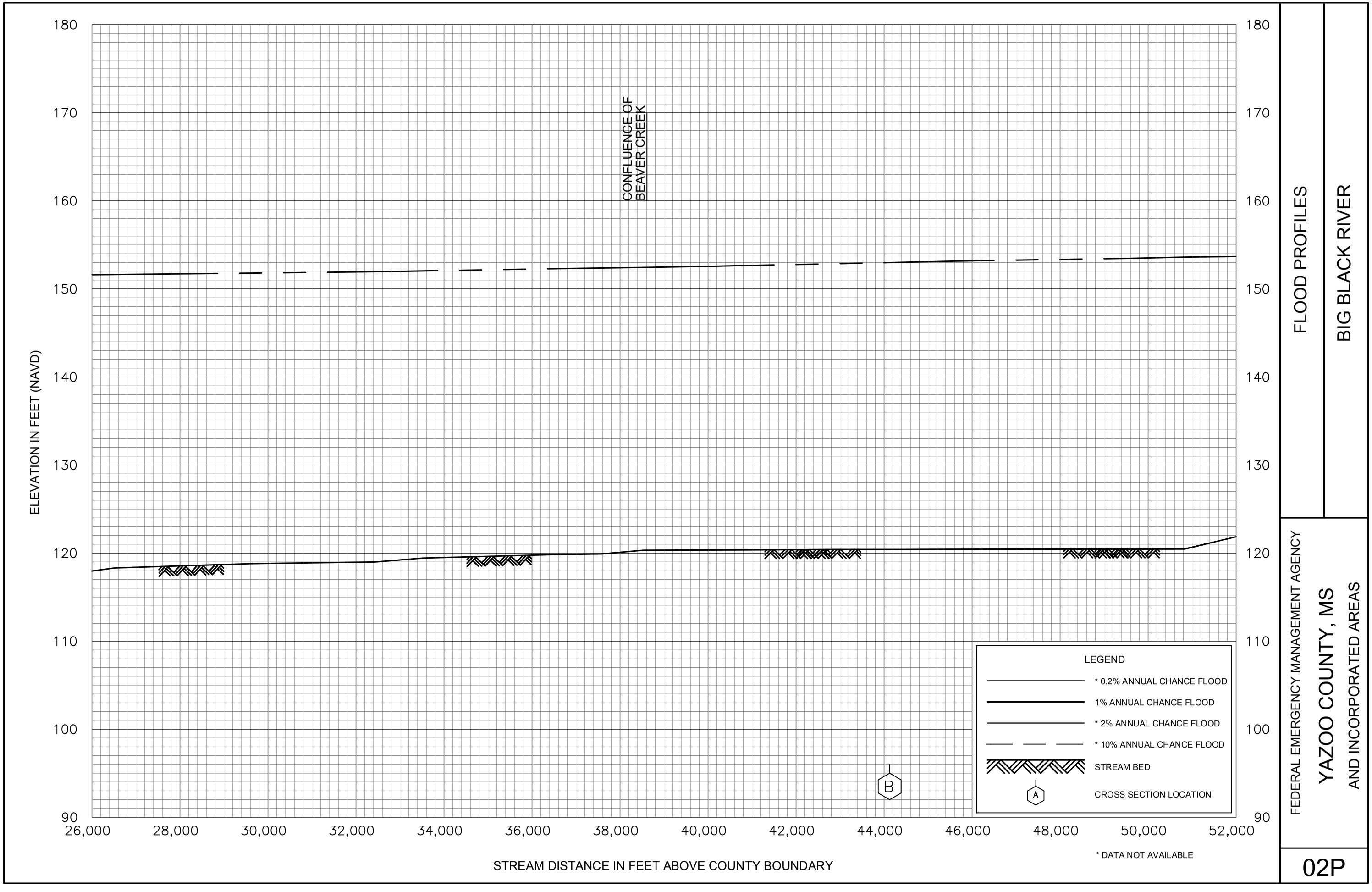
FLOOD PROFILES

BIG BLACK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YAZOO COUNTY, MS
AND INCORPORATED AREAS

01P



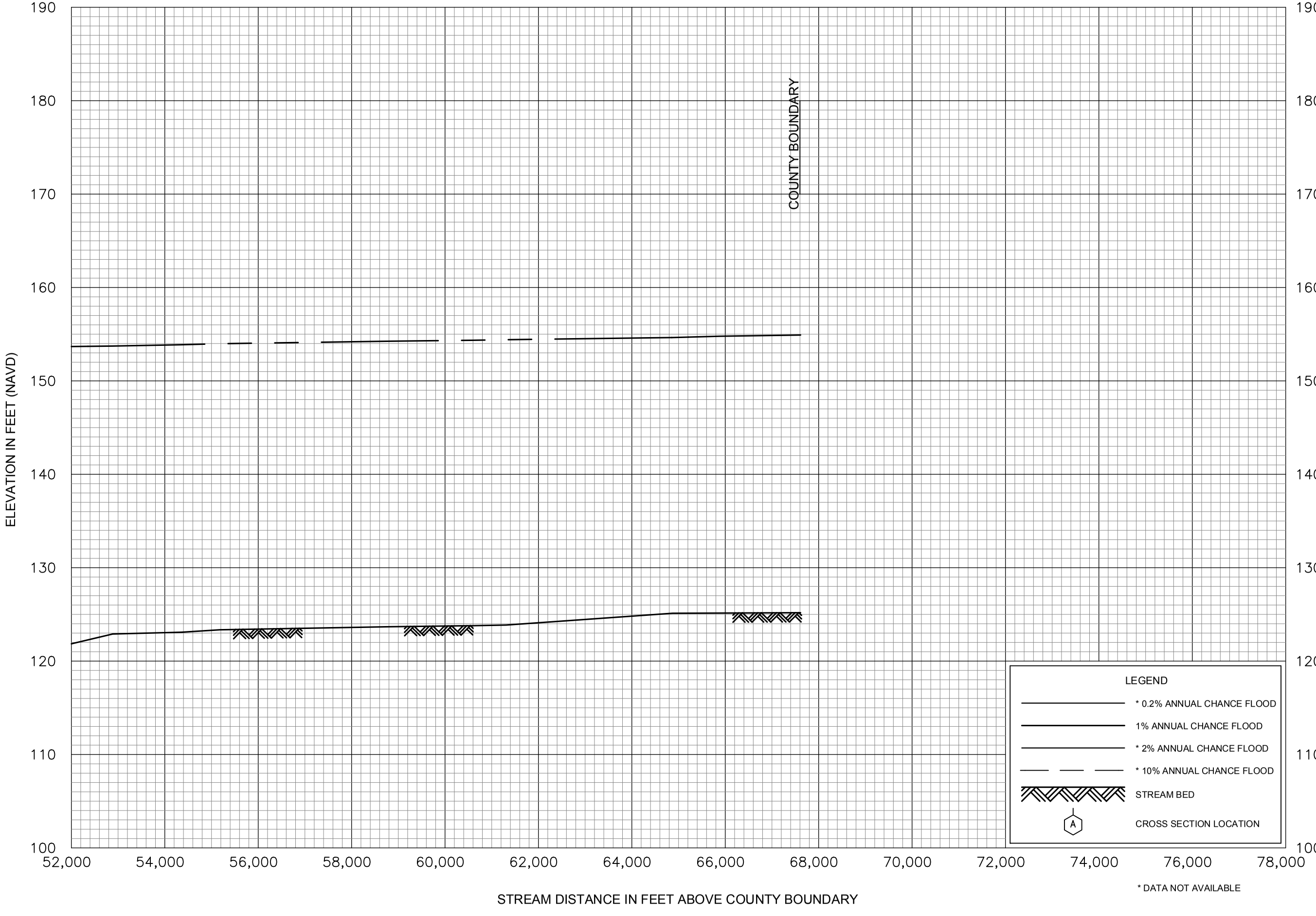
FLOOD PROFILES

BIG BLACK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YAZOO COUNTY, MS
AND INCORPORATED AREAS

02P



FLOOD PROFILES

BIG BLACK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YAZOO COUNTY, MS
AND INCORPORATED AREAS

03P

ELEVATION IN FEET (NAVD)

60 70 80 90 100 110 120 130 140 150

STREAM DISTANCE IN FEET ABOVE MOUTH

0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 8,000 9,000 10,000 11,000 12,000

A B C D E F G H I J K L M N O P

BRIDGE STREET

JEFFERSON STREET

BROADWAY STREET

MADISON STREET

CONFLUENCE OF
LINTONIA AVENUE CANAL

2ND STREET

CONFLUENCE WITH
NINTH ST. DITCH
DR. MARTIN LUTHER
KING JR. DRIVE
AND NINTH STREET

ELEVENTH STREET

CONFLUENCE OF
STORM DRAIN AT
FIFTEENTH ST.

LIMIT OF DETAILED STUDY

LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

A CROSS SECTION LOCATION

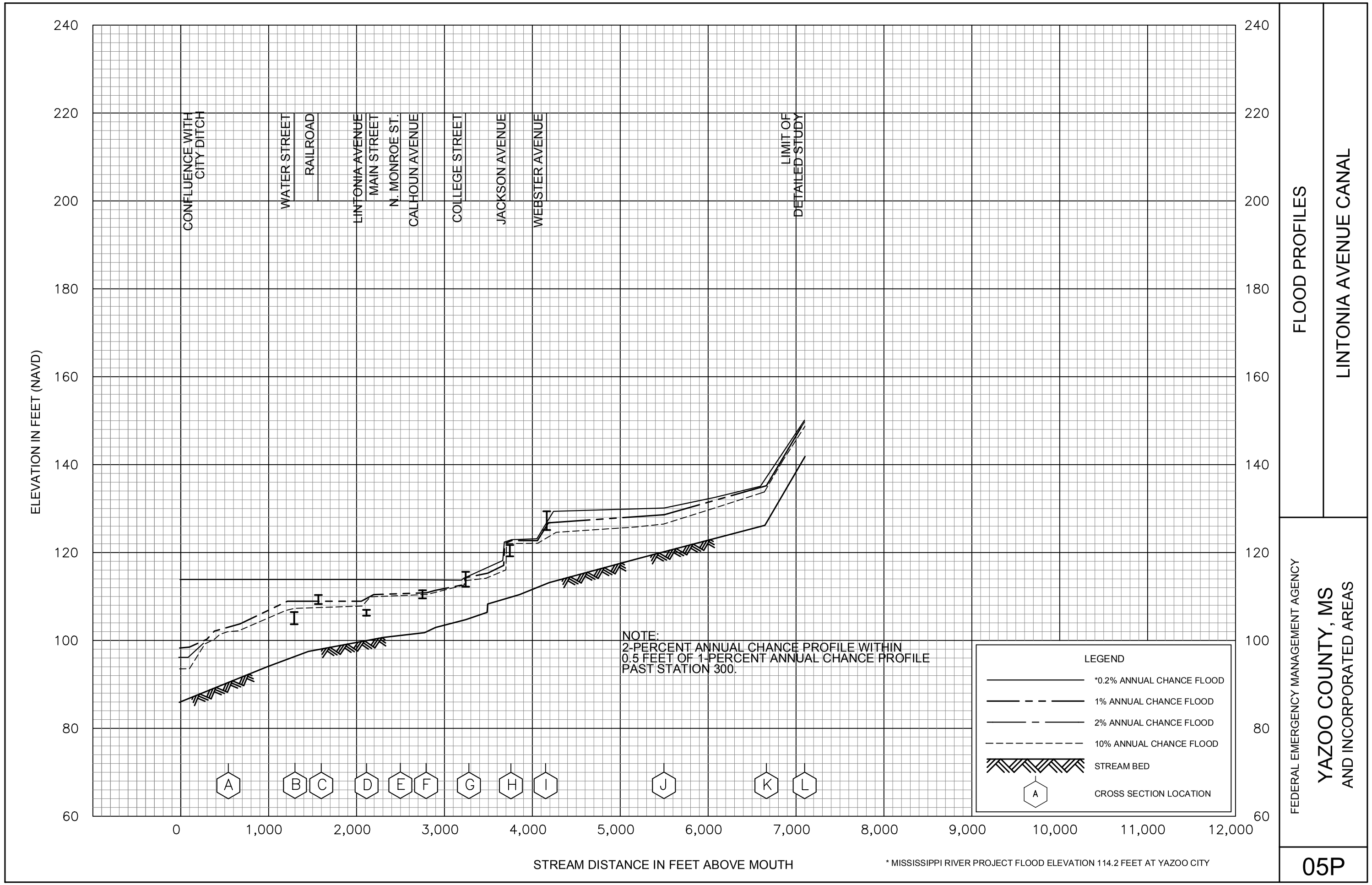
FEDERAL EMERGENCY MANAGEMENT AGENCY

YAZOO COUNTY, MS
AND INCORPORATED AREAS

FLOOD PROFILES

CITY DITCH

04P



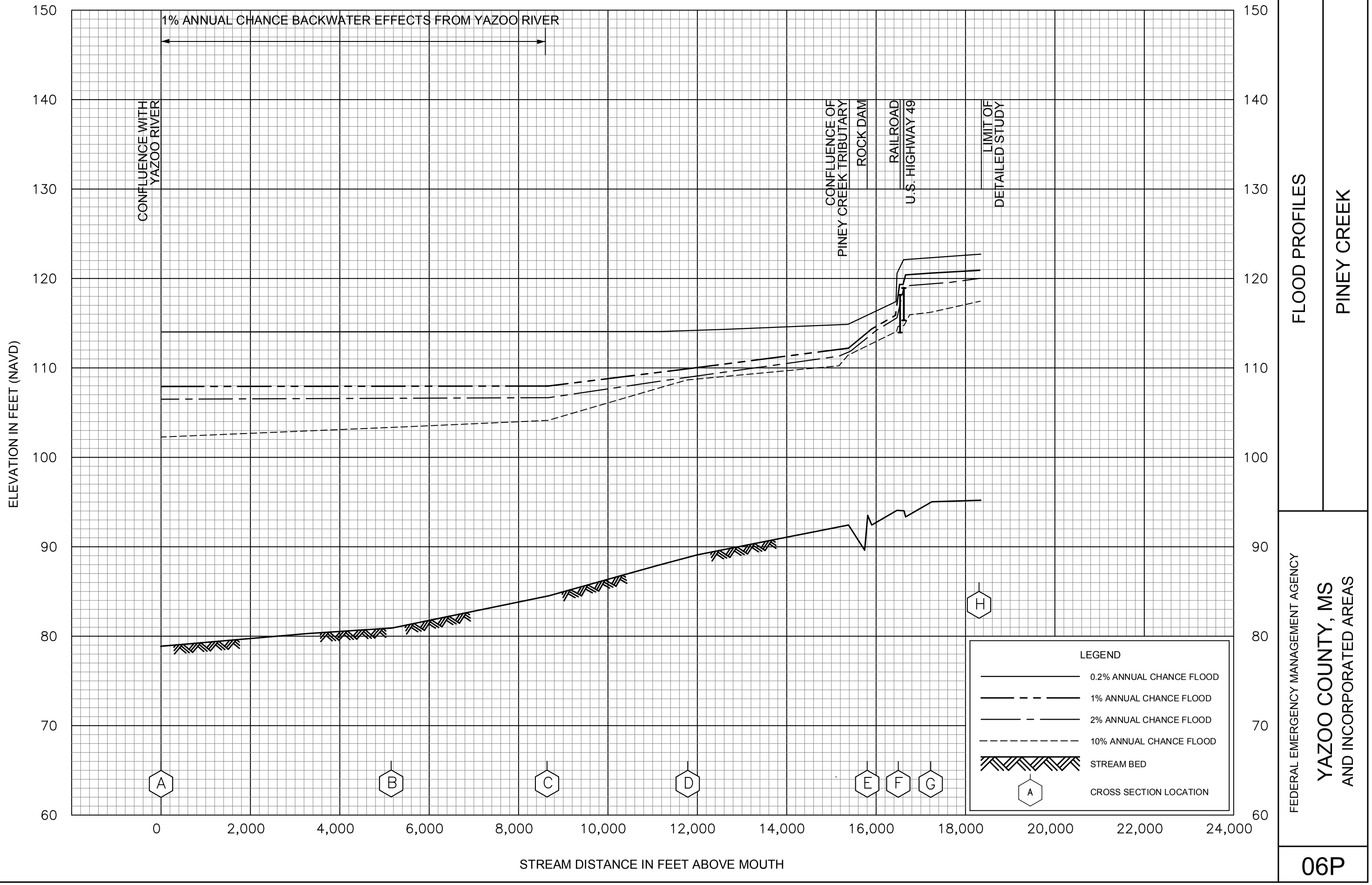
FLOOD PROFILES

LINTONIA AVENUE CANAL

FEDERAL EMERGENCY MANAGEMENT AGENCY

YAZOO COUNTY, MS
AND INCORPORATED AREAS

05P



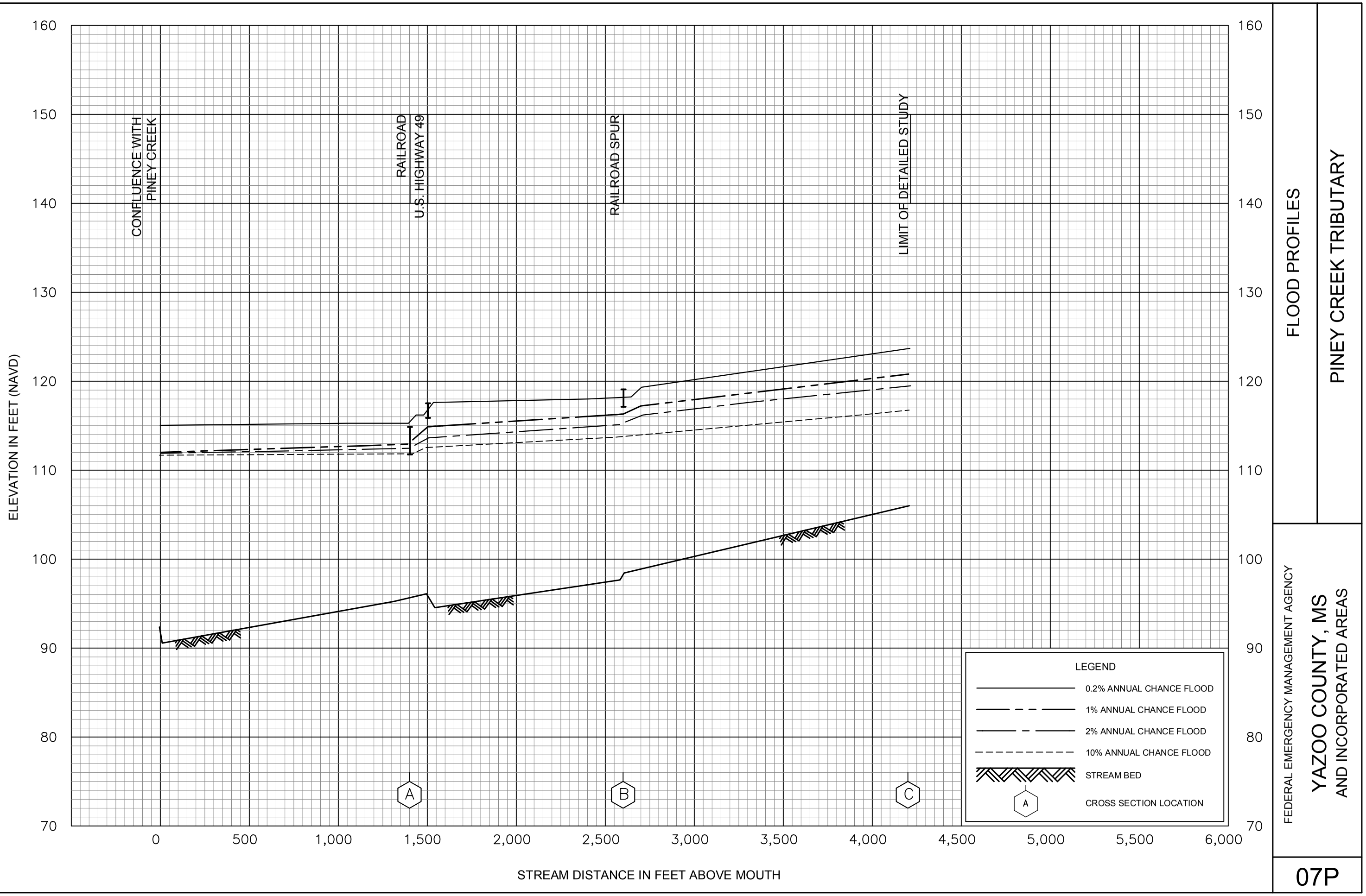
FLOOD PROFILES

PINEY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YAZOO COUNTY, MS
AND INCORPORATED AREAS

06P



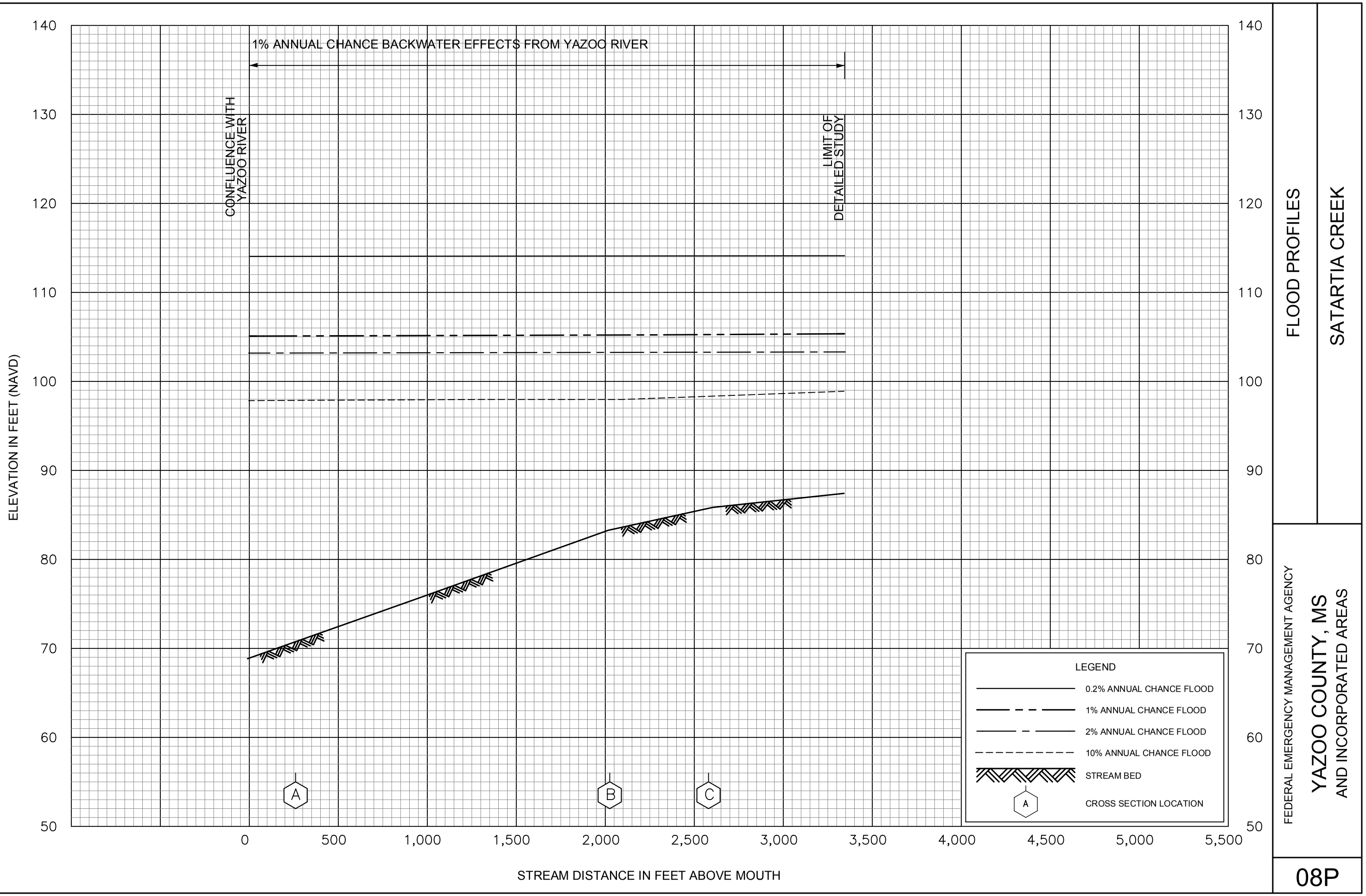
FLOOD PROFILES

PINEY CREEK TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

YAZOO COUNTY, MS
AND INCORPORATED AREAS

07P



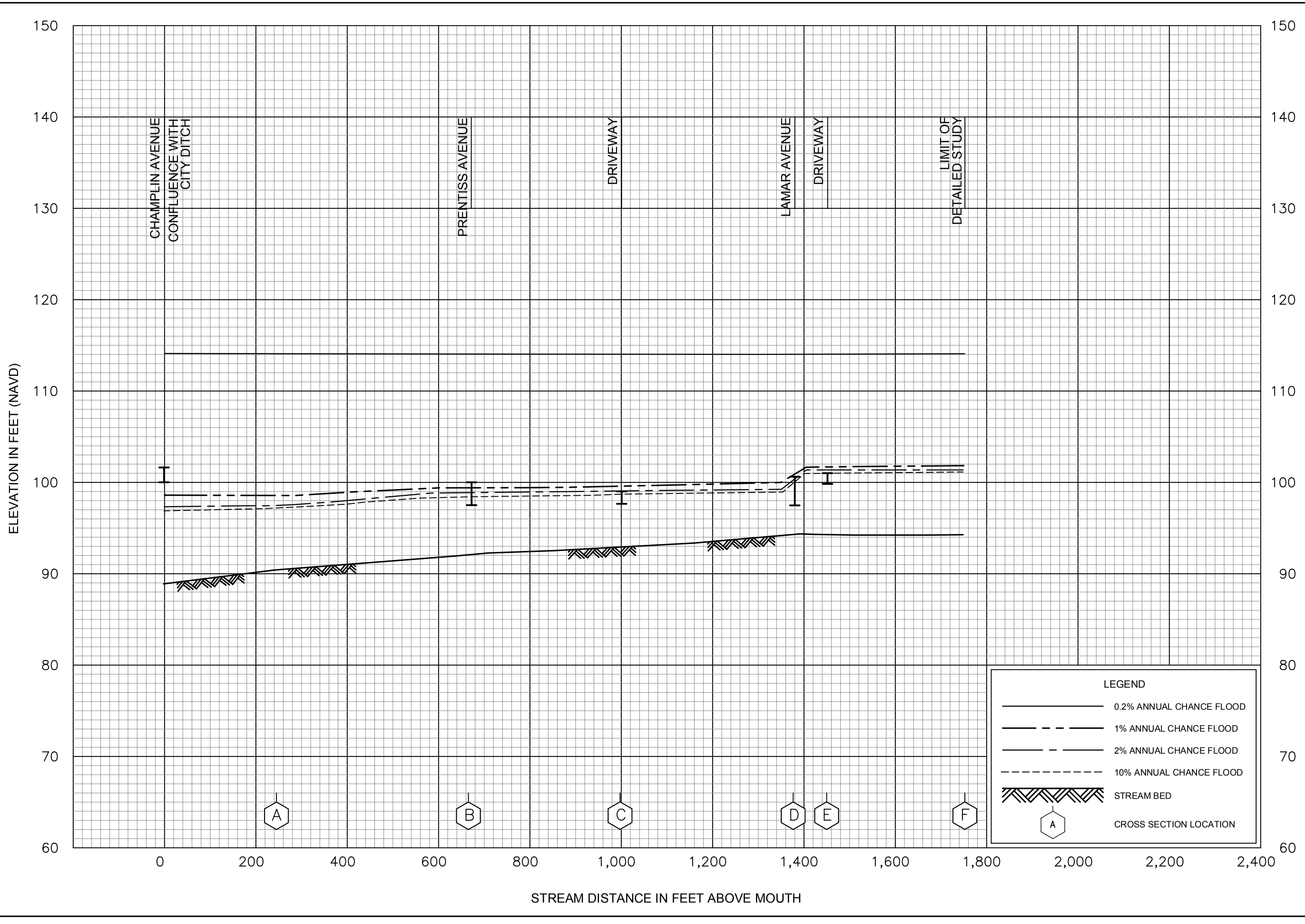
FLOOD PROFILES

SATARTIA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YAZOO COUNTY, MS
AND INCORPORATED AREAS

08P



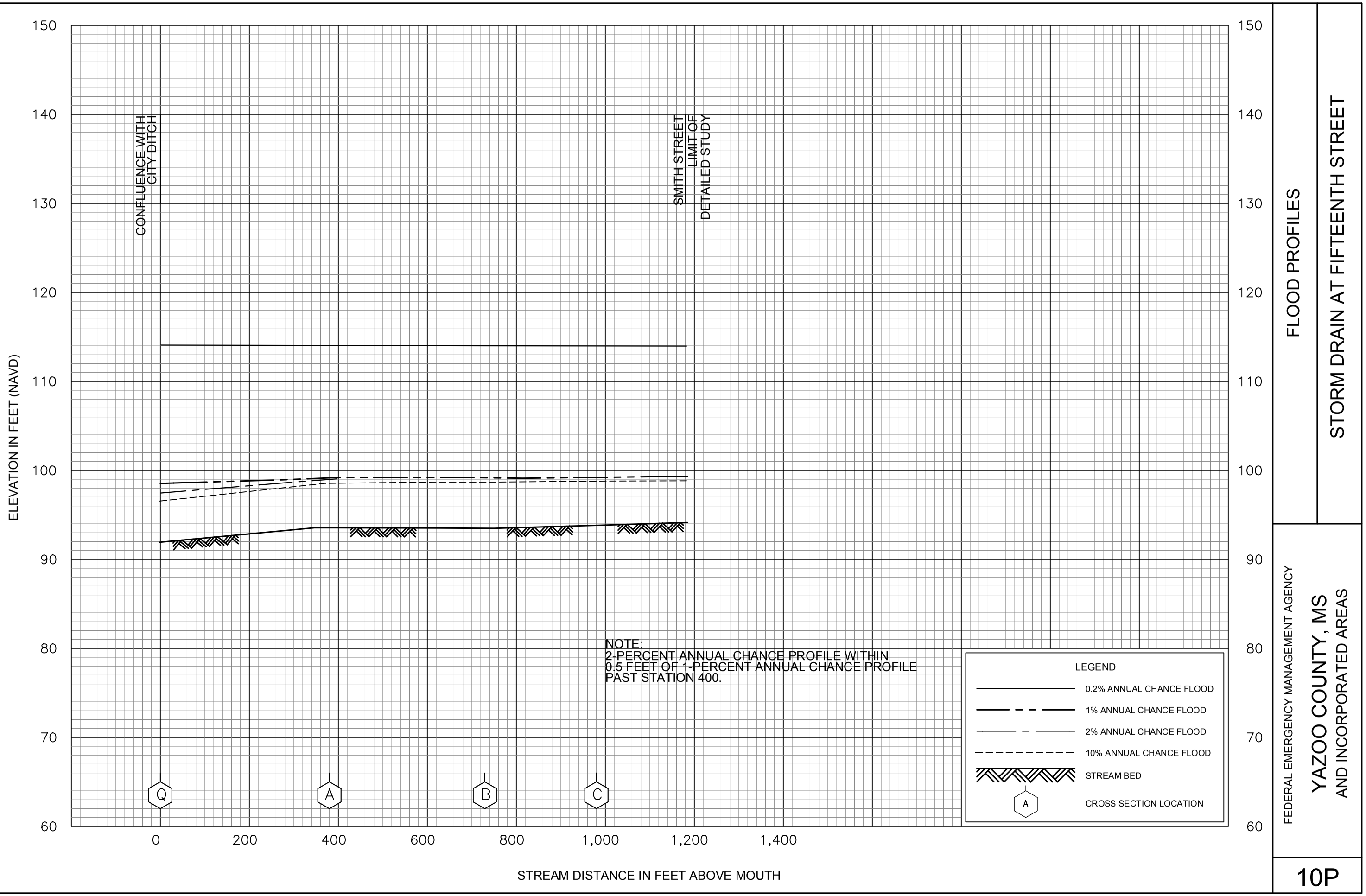
FLOOD PROFILES

STORM DRAIN AT NINTH STREET

FEDERAL EMERGENCY MANAGEMENT AGENCY

YAZOO COUNTY, MS
AND INCORPORATED AREAS

09P



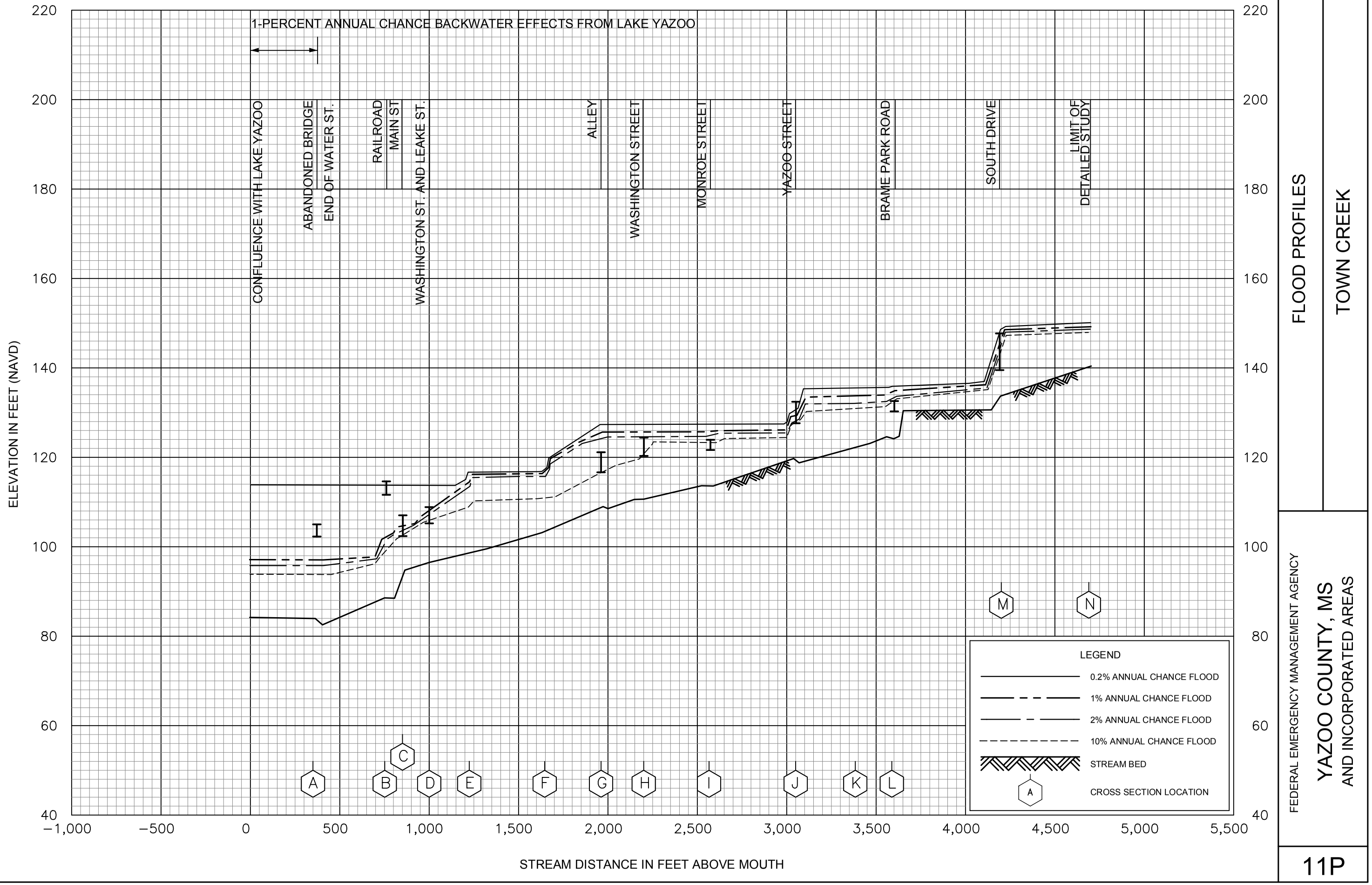
FLOOD PROFILES

STORM DRAIN AT FIFTEENTH STREET

FEDERAL EMERGENCY MANAGEMENT AGENCY

YAZOO COUNTY, MS
AND INCORPORATED AREAS

10P



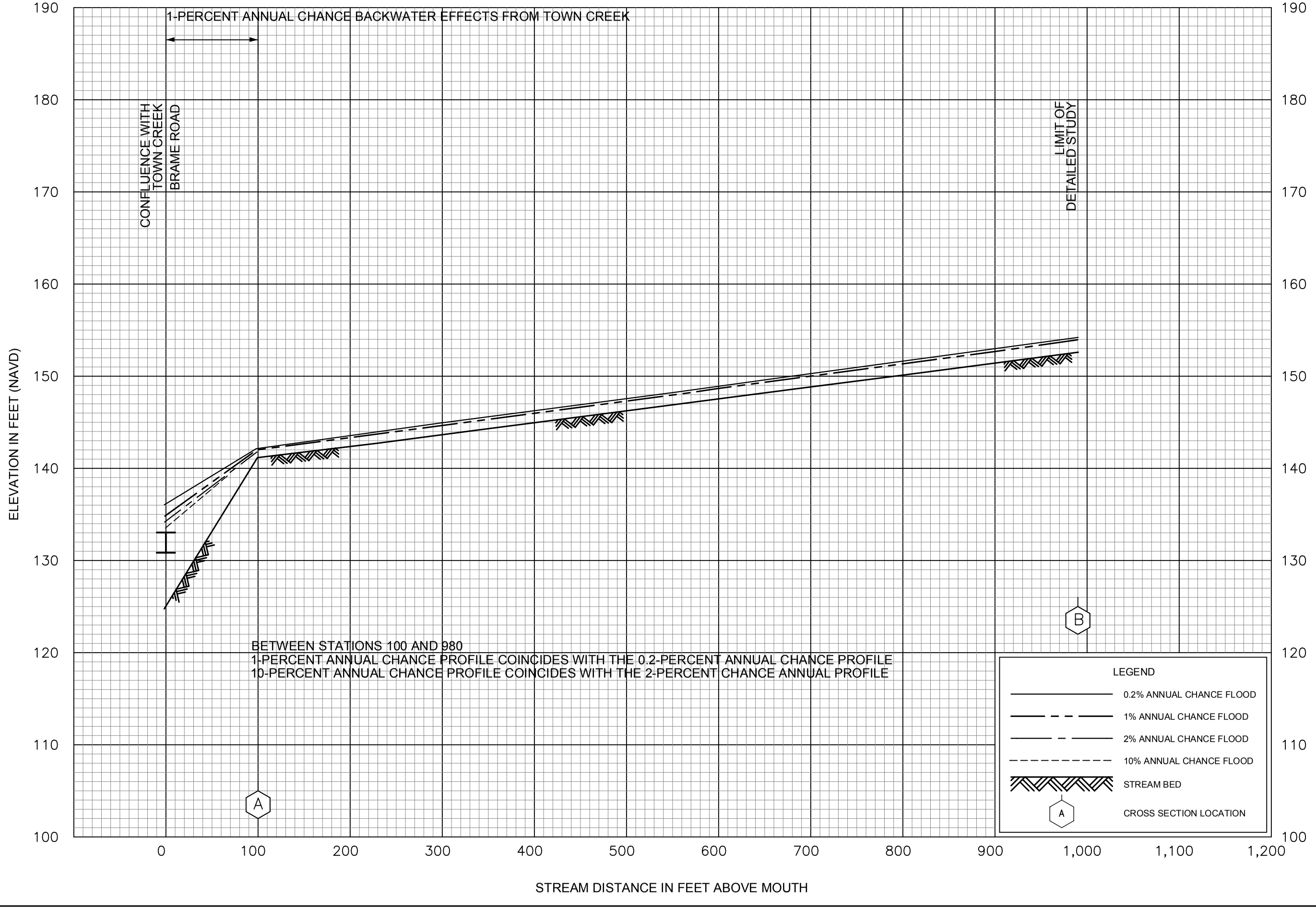
FLOOD PROFILES

TOWN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YAZOO COUNTY, MS
AND INCORPORATED AREAS

11P



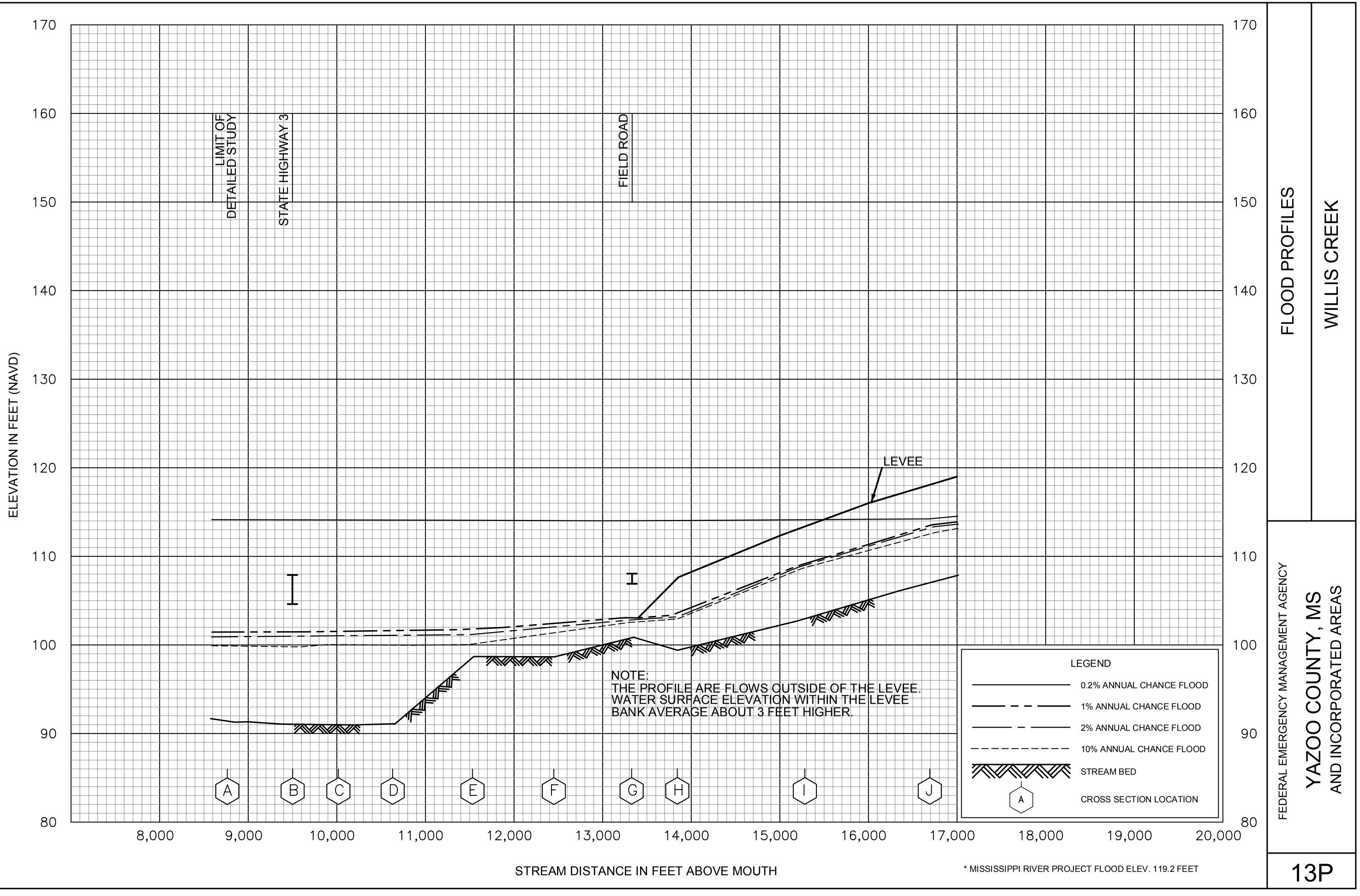
FLOOD PROFILES

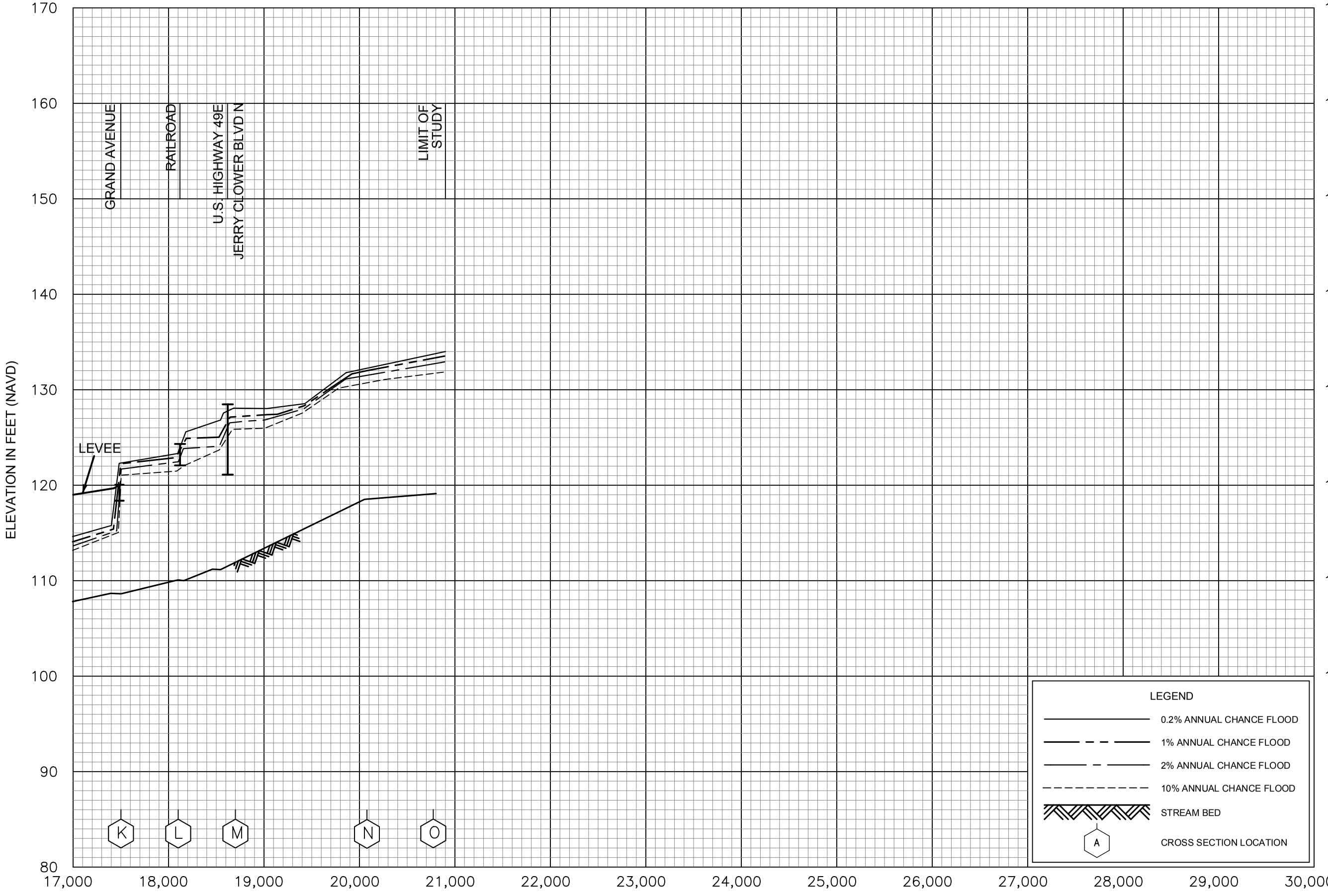
TOWN CREEK LATERAL

FEDERAL EMERGENCY MANAGEMENT AGENCY

YAZOO COUNTY, MS
AND INCORPORATED AREAS

12P


ELEVATION IN FEET (NAVD)
170
160
150
140
130
120
110
100
90
80
LIMIT OF DETAILED STUDY
STATE HIGHWAY 3
FIELD ROAD
LEVEE
NOTE:
THE PROFILE ARE FLOWS OUTSIDE OF THE LEVEE. WATER SURFACE ELEVATION WITHIN THE LEVEE BANK AVERAGE ABOUT 3 FEET HIGHER.
A
B
C
D
E
F
G
H
I
J
8,000
9,000
10,000
11,000
12,000
13,000
14,000
15,000
16,000
17,000
18,000
19,000
20,000
STREAM DISTANCE IN FEET ABOVE MOUTH
LEGEND
0.2% ANNUAL CHANCE FLOOD
1% ANNUAL CHANCE FLOOD
2% ANNUAL CHANCE FLOOD
10% ANNUAL CHANCE FLOOD
STREAM BED
CROSS SECTION LOCATION
* MISSISSIPPI RIVER PROJECT FLOOD ELEV. 119.2 FEET
FLOOD PROFILES
WILLIS CREEK
FEDERAL EMERGENCY MANAGEMENT AGENCY
YAZOO COUNTY, MS
AND INCORPORATED AREAS
13P



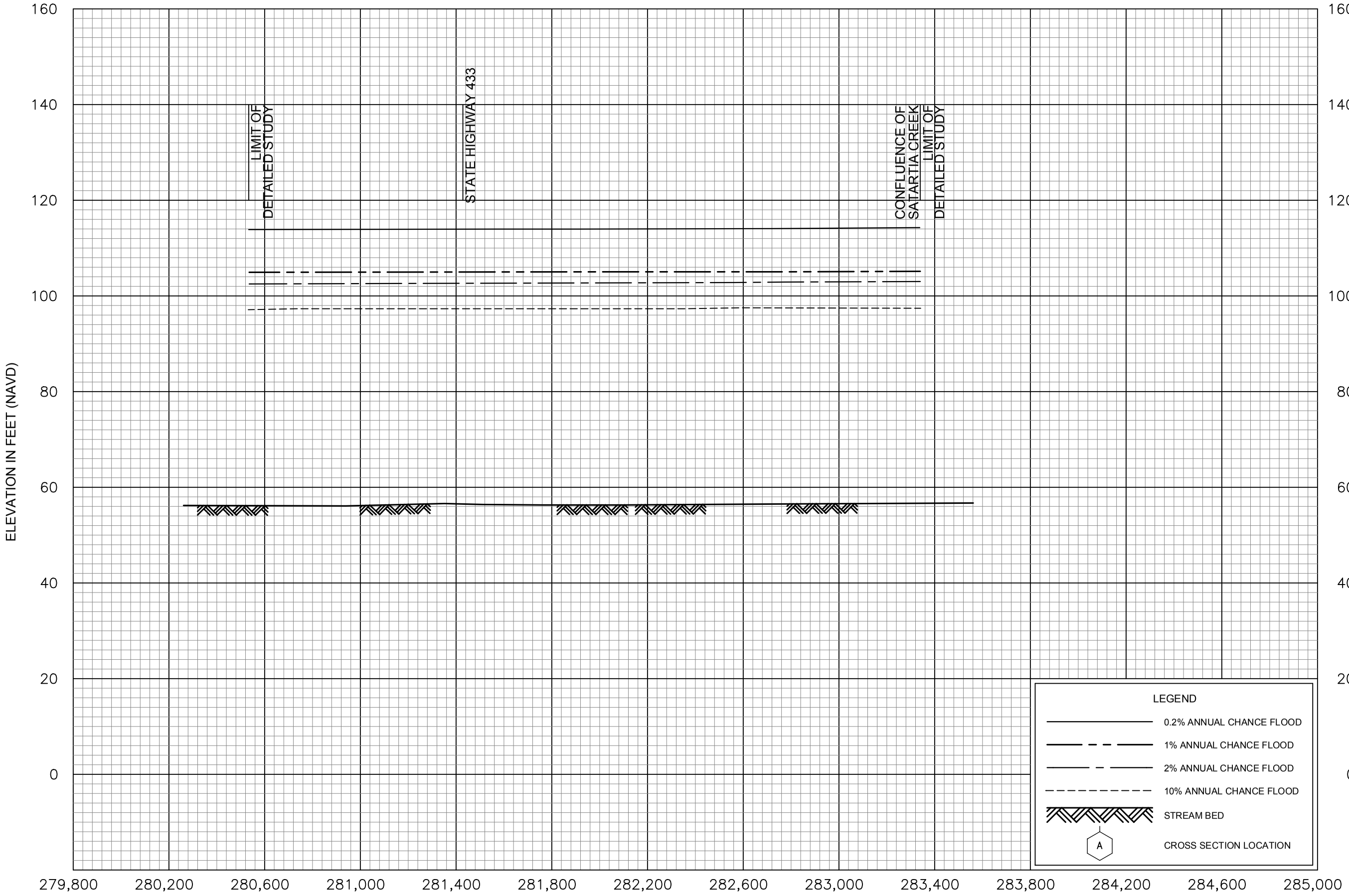
FLOOD PROFILES

WILLIS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YAZOO COUNTY, MS
AND INCORPORATED AREAS

14P



FLOOD PROFILES

YAZOO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YAZOO COUNTY, MS
AND INCORPORATED AREAS

15P