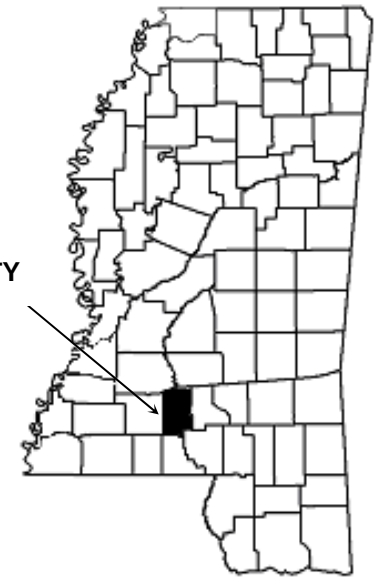
FLOOD INSURANCE STUDY

LAWRENCE COUNTY, MISSISSIPPI
AND INCORPORATED AREAS



COMMUNITY NAME	COMMUNITY NUMBER
LAWRENCE COUNTY (UNINCORPORATED AREAS)	280272
MONTICELLO, TOWN OF	280225
NEW HEBRON, TOWN OF	280317
SILVER CREEK, TOWN OF	280226

EFFECTIVE:

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
28077CV000A

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 separately 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	New Zone
C	X

Initial Countywide FIS Report Effective Date:

Revised Countywide FIS Report Dates:

TABLE OF CONTENTS

TABLE OF CONTENTS - continued

FLOOD INSURANCE STUDY
LAWRENCE 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 Lawrence County, Mississippi, including the Towns of Monticello, New Hebron, and Silver Creek, and unincorporated areas of Lawrence County (hereinafter referred to collectively as Lawrence 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 Lawrence 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.

September 15, 1989, Lawrence County (Unincorporated Areas) FIS

The hydrologic and hydraulic analyses for the study were performed by Neel-Schaffer, Inc., (the Study Contractor) for the Federal Emergency Management Agency (FEMA), under Contract No. EMW-86-C-2246. This study was completed in February 1987.

September 17, 2003, Town of Monticello FIS

For the FIRM dated April 2, 1986, only approximate analyses were conducted.

The hydrologic and hydraulic analyses for the FIS were prepared by the U.S. Army Corps of Engineers (USACE), Vicksburg District, for FEMA. This work was completed in December 2000. Base map information shown on the September, 17, 2003, FIRM was derived from U.S. Geological Survey (USGS) Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1996 or later. The digital FIRMS were produced in Universal Transverse Mercator (UTM), Zone 15, coordinates referenced to the North American Datum of 1983 and the GRS80 spheroid.

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-2007-CA-5774. This study was completed in August 2009.

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. The digital orthophotography was acquired in March 2006, with the imagery processed to a 2-foot pixel resolution that has been compiled at a scale of 1:400.

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.

September 15, 1989, Lawrence County (Unincorporated Areas) FIS

On February 12, 1986, a coordination meeting was held at the Lawrence County Courthouse to identify the streams requiring detailed study. The meeting was attended by representatives of Neel-Schaffer, Inc., FEMA, Lawrence County officials, and interested local residents.

Federal, State, and regional agencies and community officials were contacted for information pertaining to floodplain regulation, available community maps, flood history, and other hydrologic data. The Lawrence Board of Supervisors, the USACE, the U.S. Soil Conservation Service, and the USGS were contacted for information on flooding, high-water marks, and other streamflow data. The Mississippi Research and Development Center was also contacted for additional data used in this study.

On October 19, 1988, the results of the Flood Insurance Study were reviewed and accepted at a final coordination meeting attended by representatives of the Study Contractor, FEMA, and the community.

September 17, 2003, Town of Monticello FIS

An initial CCO meeting was held on March 4, 1997, and was attended by representatives of the Town of Monticello. Prior to this meeting, the FEMA Regional Office in Atlanta, Georgia, was contacted to coordinate the proposed work effort with any schedules of that agency.

A final CCO meeting was held on September 12, 2002, and was attended by representatives of the community, the State, and FEMA.

This Countywide FIS

For this countywide FIS, the Project Scoping Meeting was held on March 18, 2008 in Monticello, MS. Attendees for these meetings included representatives from the Mississippi Department of Environmental Quality, Mississippi Emergency Management Agency, FEMA National Service Provider, Lawrence County, the Towns of Silver Creek and Monticello, 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 Lawrence 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.

September 15, 1989, Lawrence County (Unincorporated Areas) FIS

The Flood Insurance Study covered the unincorporated areas of Lawrence County, Mississippi. The incorporated areas within the county were excluded from the study.

Flooding caused by the overflow of the Pearl River was studied in detail. Areas having low development potential or minimal flood hazards were previously studied using approximate analyses. The areas studied were selected with priority given to all known flood hazard areas and areas of projected development or proposed construction through February 1992.

September 17, 2003, Town of Monticello FIS

The following streams were restudied by detailed methods: Runnels Creek, Runnels Creek Tributary A, Runnels Creek Tributary B, and Runnels Creek Tributary C. The areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development and proposed construction.

The following streams were studied by approximate methods: Halls Creek, Pearl River, and Town Branch Creek. Approximate analyses were used to study those areas having a low development potential or minimal flood hazards.

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 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

Lawrence County is in south-central Mississippi, 40 miles south of the City of Jackson, Mississippi, and 72 miles east of the Mississippi River at the City of Natchez. It is bordered by Copiah and Simpson Counties on the north, Jefferson Davis County on the east, Walthall and Marion Counties on the south, and Lincoln County on the west. Lawrence is served by U.S. Highway 84, State Highways 27, 43, and 44, and the Canadian National Railroad. The population of Lawrence County was estimated by the U.S. Census Bureau to be 13,341 in 2007 (U.S. Census Bureau, 2009). The major industries in Lawrence County are retail trade, health care, and food services (U.S. Census Bureau, 2009). The mean monthly low temperature is 46°F in January, and the mean monthly high temperature is 81°F in July. The average yearly precipitation for Lawrence County is 62 inches (Mississippi State University, 2009).

2.3 Principal Flood Problems

Low-lying areas along the Pearl River in Lawrence County are subject to flooding from overflow of the river. The most severe flooding generally occurs in early spring as a result of heavy rainfall from large frontal systems. The smaller streams draining Lawrence County generally flood during periods of intense thunderstorms. Extreme flooding occurred in April 1979 when the flood considered to be approximately a 0.2-percent-annual-chance event occurred on the Pearl River. On April 20, the Pearl River crested at 34.1 feet near the Town of Monticello.

2.4 Flood Protection Measures

There are no levees within Lawrence County that are accredited to protect against the 1-percent annual chance flood. The criteria used to evaluate protection against the 1-percent-annual-chance flood are 1) adequate design, including freeboard, 2) structural stability, and 3) proper operation and maintenance. Levees that do not protect against the 1-percent-annual-chance flood are not considered in the hydraulic analysis of the 1-percent-annual-chance flood zone.

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.

September 15, 1989, Lawrence County (Unincorporated Areas) FIS Analyses

A USGS gaging station located on the Pearl River, 1 mile east of Monticello at the U.S. Highway 84 bridge, was the principal source of data for defining the discharge-frequency and stage-discharge relationship for the river. The stream gage has been operated continuously since 1938. Values of peak discharges were determined from a log-Pearson Type III distribution of annual peak flow data from 1938-1984 (U.S. Department of the Interior, 1982 and 1986). Results of the analyses were coordinated with the USGS and USACE.

These discharges were used for the complete reach of the detailed study area after reviewing the USGS methodology of stream-gage data transfer (US. Dept. of Interior, 1976) and other information on flooding from the USGS (U.S. Dept. of Interior, 1961 and 1980).

September 17, 2003, Town of Monticello FIS

The purpose of the hydrologic analysis was to establish a peak discharge frequency relationship for the 1-percent annual chance flood event. A numerical model was developed using the Hydrologic Modeling System, version 1.0, released in March 1998, by the Hydrologic Engineering Center in Davis California (USACE, March 1998). The 1-percent annual chance synthetic rainfall amounts were selected from National Weather Service Technical Paper 40 (U.S. Department of Commerce, 1961). The 24-hour rainfall was distributed into 5-minute increments. Hydrographs were developed by applying Snyder's Unit Hydrograph parameters to the synthetic rainfall.

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.

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
PEARL RIVER					
At U.S. Highway 84	5,040	60,800	85,800	97,100	125,000
RUNNELS CREEK					
Downstream of the confluence of Runnels Tributary A	0.40	*	*	657	*
Upstream of the confluence of Runnels Tributary A	0.34	*	*	700	*
RUNNELS CREEK TRIBUTARY A					
Downstream of Graham Avenue	0.19	*	*	317	*
Upstream of Graham Avenue	0.12	*	*	250	*
RUNNELS CREEK TRIBUTARY B					
Upstream of Highway 27	0.51	*	*	1,064	*
Upstream of the confluence of Runnels Creek Tributary C to Highway 27	0.34	*	*	645	*
Downstream of the confluence of Runnels Creek Tributary C	0.24	*	*	508	*
Downstream of Graham Avenue	0.19	*	*	317	*
Upstream of Graham Avenue to the confluence of Runnels Creek Tributary C	0.04	*	*	27	*
RUNNELS CREEK TIRBUTARY C					
At confluence with Runnels Creek Tributary B	0.14	*	*	284	*

*Data not available

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Users should be aware that flood elevations shown on the 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.

September 15, 1989, Lawrence County (Unincorporated Areas) FIS Analyses

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

The water-surface elevations were developed using the HEC-2 step-backwater computer model (USACE, 1984).

Roughness coefficients (Manning's "n") for the Pearl River were estimated on the basis of field inspection but were adjusted based on gage information and water-surface profile data from the April 1979 flood (U.S. Department of the Interior, 1986). The roughness coefficients ranged from 0.03 to 0.045 for the main channel and 0.06 to 0.22 for the overbank areas. The starting water-surface elevations were obtained by the slope-conveyance method.

September 17, 2003, Town of Monticello FIS

Cross sections for Runnels Creek, and Runnels Creek Tributaries A, B, and C were obtained from field surveys. All bridges, dams, and culverts were field surveyed to obtain elevation data and structural geometry.

River Analysis System, developed by HEC, was used to generate the 1-percent annual chance profile for Runnels Creek and its tributaries (USACE, September 1998). The hydrologic data from Table 1 were conveyed through a model built with surveyed cross sections. Overbank data for the cross sections were obtained from 1:24,000 scale USGS quadrangle maps. Flow resistances were estimated by Manning's roughness coefficients that ranged from 0.045 to 0.07 for the channels and from 0.07 to 0.25 for the overbanks. For delineating the flood area along the Pearl River, elevations were taken from the Jackson Metropolitan Area Feasibility Report, January 1996 (USACE, 1996).

This Countywide FIS Analysis

Cross section geometries were obtained from terrain data. 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 approximate studies.

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 0.04 feet to the NAVD88 elevation. The 0.04 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.

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, then refined using detailed hydrographic data (Dept. of Interior, 1970).

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.

No floodways were calculated for Lawrence County. Along streams where floodways have not been computed, the community must ensure that the cumulative effect of development in the floodplain will not cause more than 1.0-foot increase in the base flood elevations at any point within the community.

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, and the locations of selected cross sections used in the hydraulic analyses.

The countywide FIRM presents flooding information for the entire geographic area of Lawrence 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 2, "Community Map History."

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
Lawrence County (Unincorporated Areas)	September 16, 1977	--	September 15, 1989	--
Monticello, Town of	December 27, 1974	--	April 2, 1986	September 17, 2003
New Hebron, Town of	November 3, 1978	--	August 5, 1985	--
Silver Creek, Town of	July 11, 1975	--	--	--

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

LAWRENCE COUNTY, MS
AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

7.0 OTHER STUDIES

Information pertaining to revised and unrevised flood hazards for each jurisdiction within Lawrence 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 Lawrence 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

Mississippi State Climatologist (2009), Website, Starkville, Mississippi, http://www.msstate.edu/dept/GeoSciences/climate/

U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, Computer Program 723-X6-L202A, Davis, California, April 1984.

U.S. Army Corps of Engineers, Vicksburg District, Flood Control, Pearl River Basin, Mississippi, Jackson Metropolitan Area, Mississippi, Feasibility Report, Volume II, Appendix 4.

U.S. Army Corps of Engineers, Hydrologic Engineering Center, HMS, Hydrologic Modeling System, Version 1.0, Davis California, March 1998.

U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-RAS, River Analysis System, Version 2.2, Davis California, September 1998.

U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-RAS River Analysis System, User's Manual, version 3.1.3, Davis, California, May 2003.

U.S. Army Corps of Engineers, Topographic Engineering Center, Corpscon Version 6.0.1, Alexandria, Virginia, August 2004.

U.S. Census Bureau, Website–2007 Population Estimate, February 26, 2009.

U.S. Census Bureau, Website- Lawrence County Economic Factsheet, February 26, 2009

U.S. Department of Commerce, Weather Bureau, Rainfall Frequency Atlas of the United States, Technical Paper No. 40, Washington D.C., 1961.

U.S. Department of the Interior, Geological Survey, Flood Frequency of Mississippi Streams, B.E. Colson and J.W. Hudson, Jackson, Mississippi, 1976.

U.S. Department of the Interior, Geological Survey, 7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 10 feet: Darbun, Mississippi, 1970; Georgetown, Mississippi, 1971;

Jayess, Mississippi, 1970; Monticello, Mississippi, 1970; Monticello NE, 1971; New Hebron, Mississippi, 1970; Nola, Mississippi, 1970; Oma, Mississippi, 1971; Prentiss West, Mississippi, 1970; Oak Vale, Mississippi, 1970; Schley, Mississippi, 1971; Shivers, Mississippi, 1971; Tilton, Mississippi, 1970; Topeka, Mississippi, 1970.

U.S. Department of the Interior, Geological Survey, Interagency Advisory Committee on Water Data, Office of Water Data Coordination, Hydrology Subcommittee, Bulletin No. 17B, Guidelines for Determining Flood Flow Frequency, September, 1981, revised March, 1982.

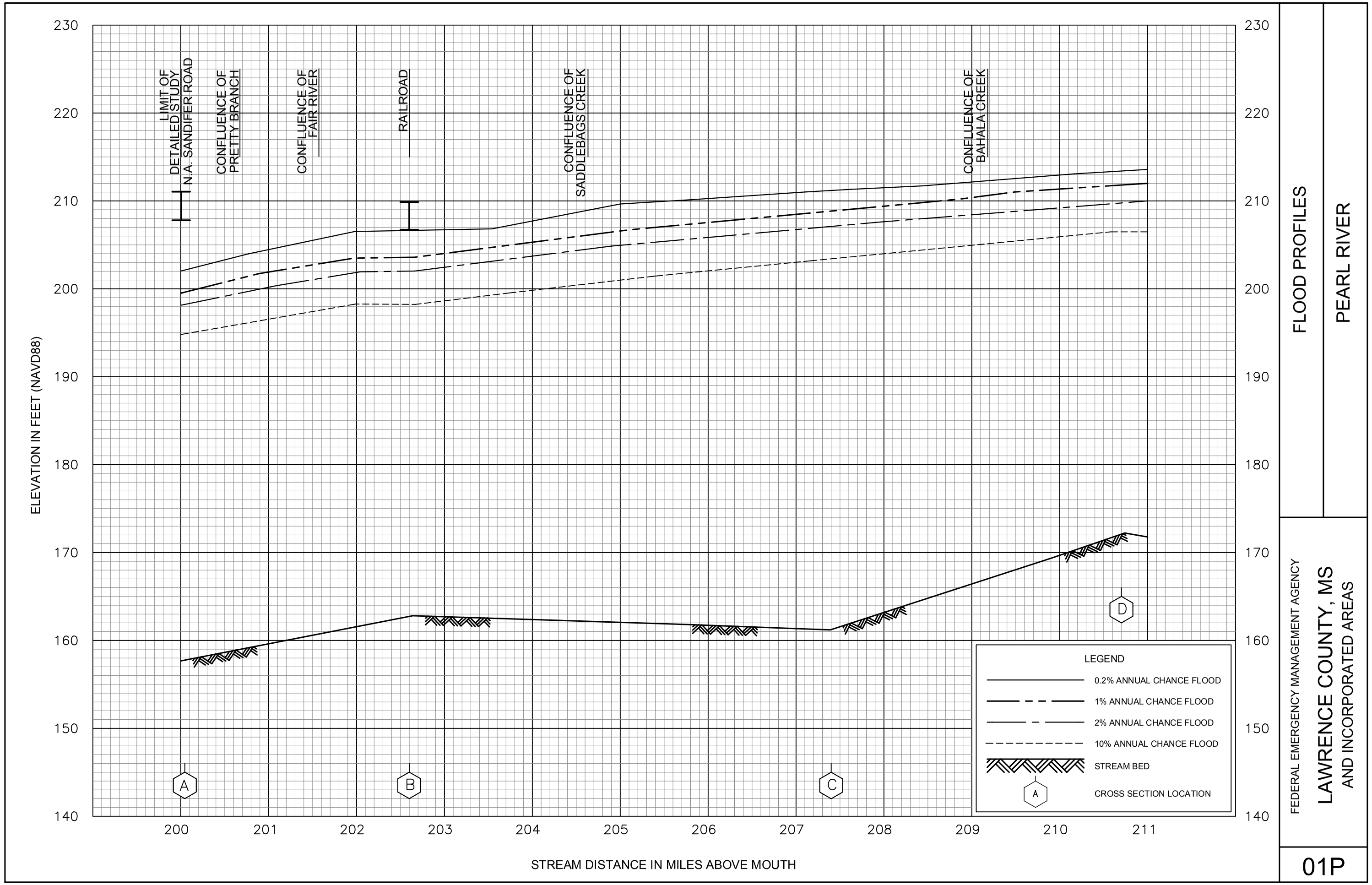
U.S. Department of the Interior, Geological Survey, Flood Characteristics of Mississippi Streams, Water-Resources Investigations Report 91-4037, Jackson, MS, 1991.

U.S. Department of the Interior, Geological Survey, Open-File Report, Floods in Mississippi, Magnitude and Frequency, K.V. Wilson and I.L. Trotter, 1961.

U.S. Department of the Interior, Geological Survey, Flood Frequency Data on the Pearl River at Monticello, Mississippi, July 1980.

U.S. Department of the Interior, Geological Survey, Stream Gage Records on the Pearl River at Monticello, Mississippi, December 1986.

U.S. Department of the Interior, Geological Survey, Professional Paper 1319, Floods of April 1979, Mississippi, Alabama, and Georgia, 1986.



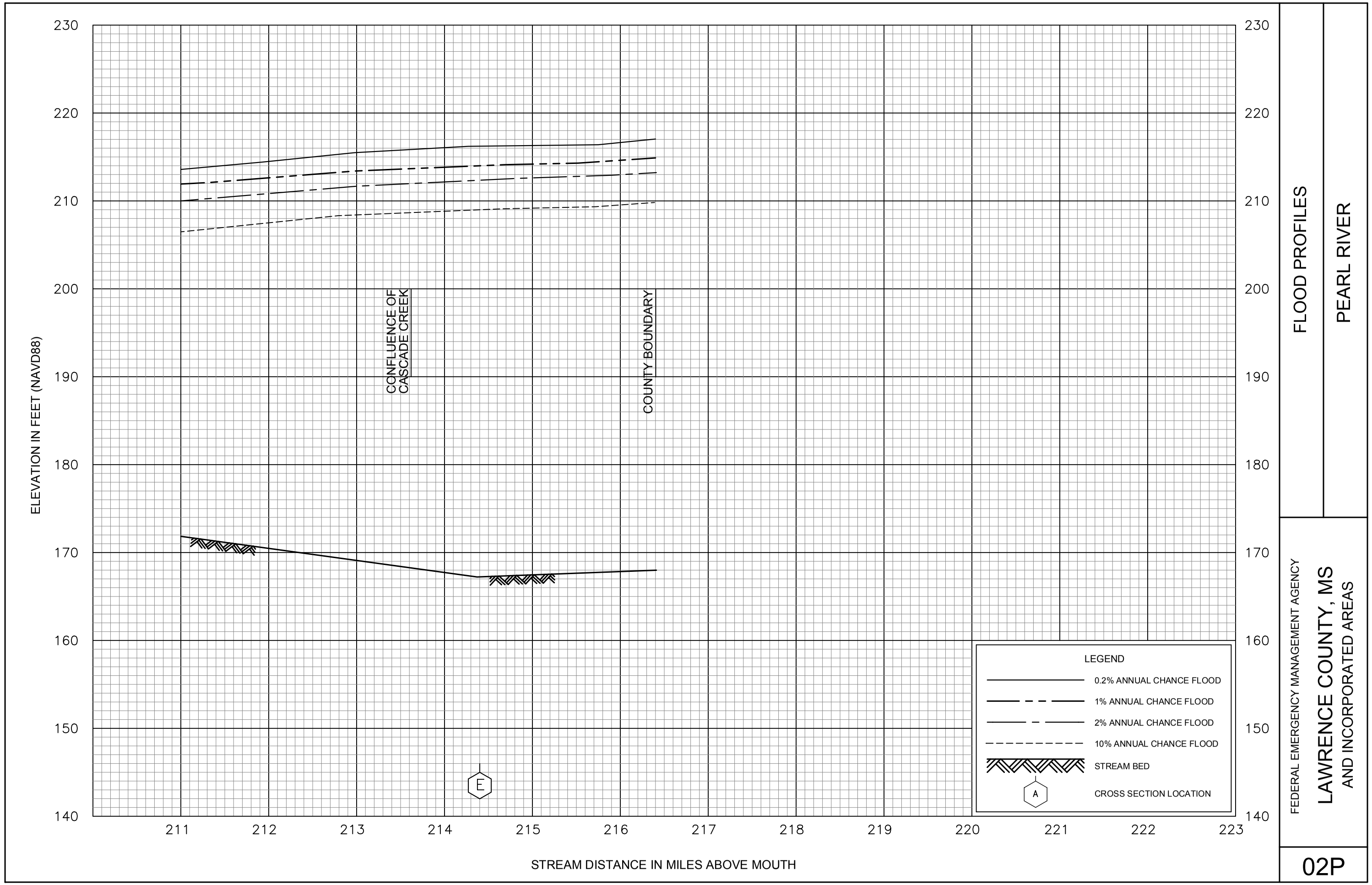
FLOOD PROFILES

PEARL RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LAWRENCE COUNTY, MS
AND INCORPORATED AREAS

01P



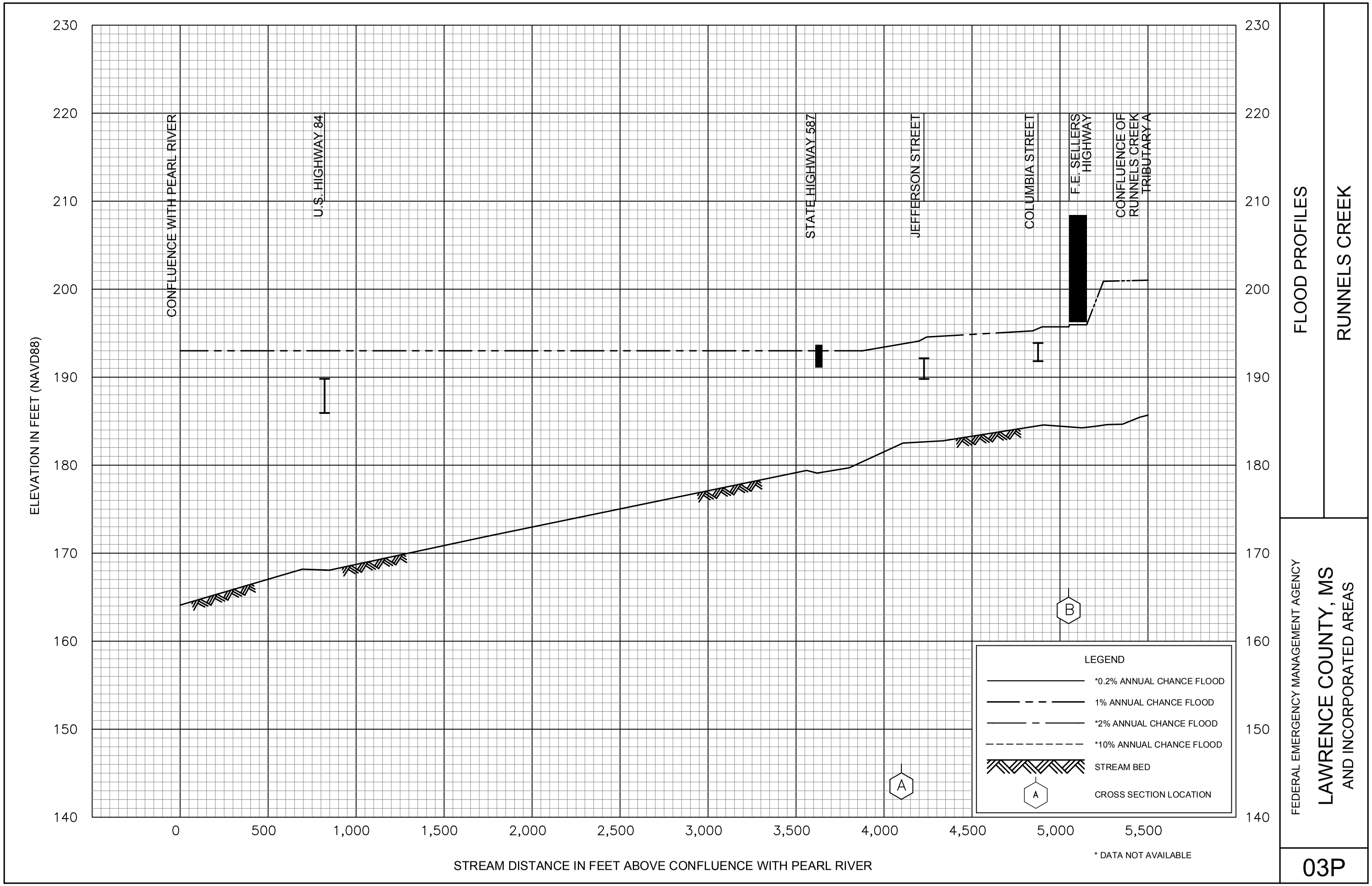
FLOOD PROFILES

PEARL RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LAWRENCE COUNTY, MS
AND INCORPORATED AREAS

02P



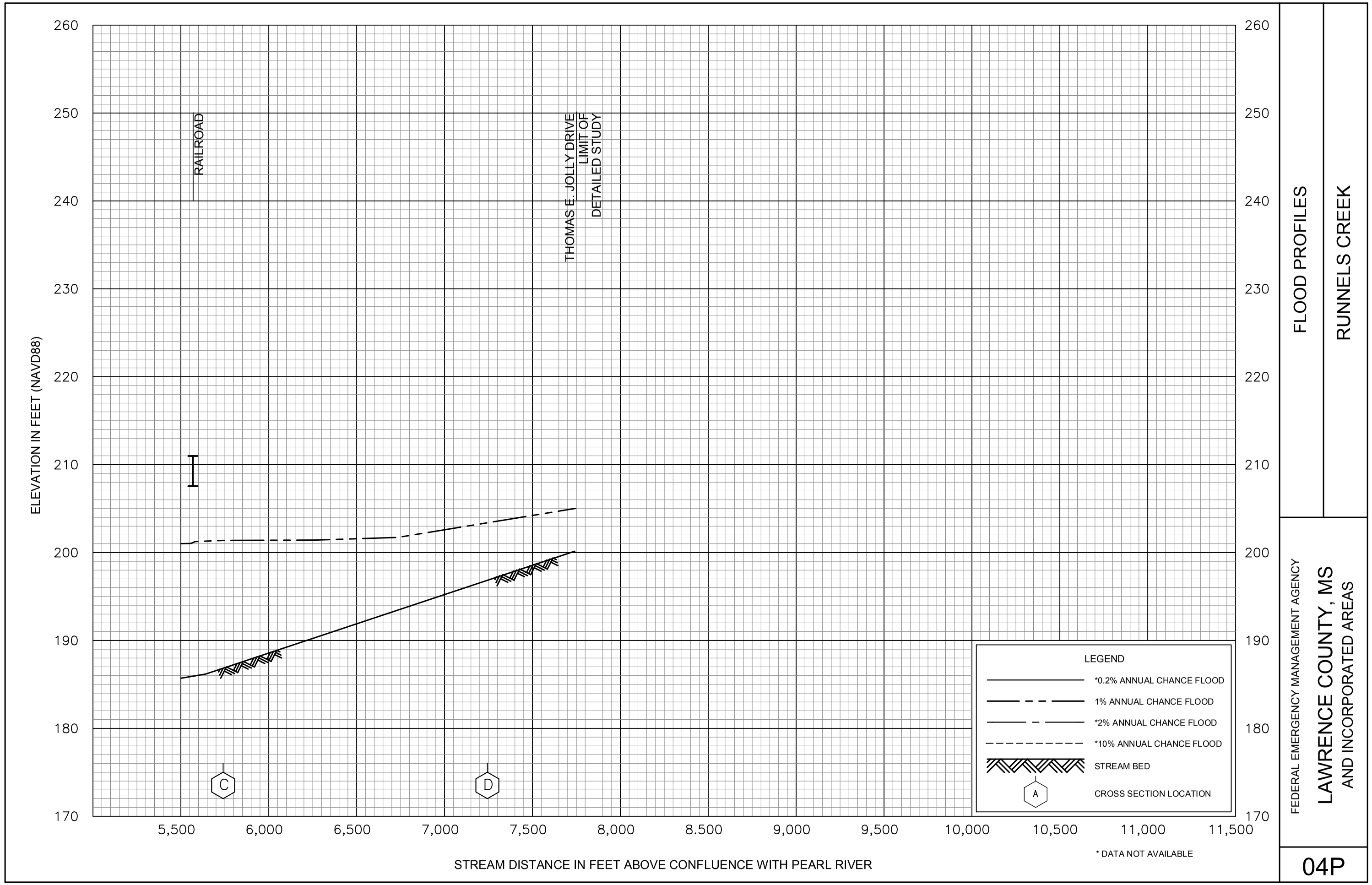
FLOOD PROFILES

RUNNELS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

LAWRENCE COUNTY, MS
AND INCORPORATED AREAS

03P



FLOOD PROFILES

RUNNELS CREEK

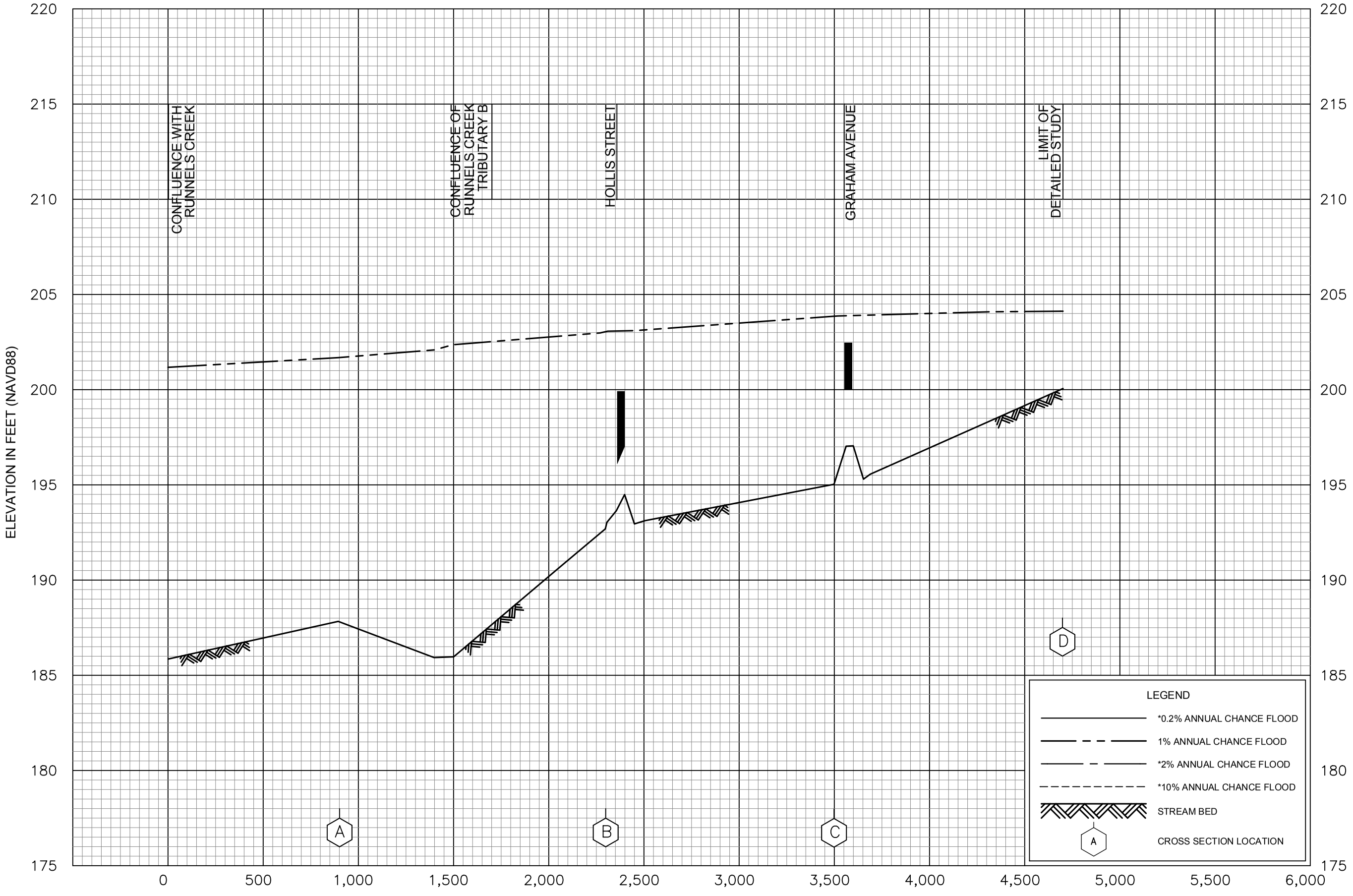
FEDERAL EMERGENCY MANAGEMENT AGENCY

LAWRENCE COUNTY, MS
AND INCORPORATED AREAS

04P

RUNNELS CREEK TRIBUTARY A

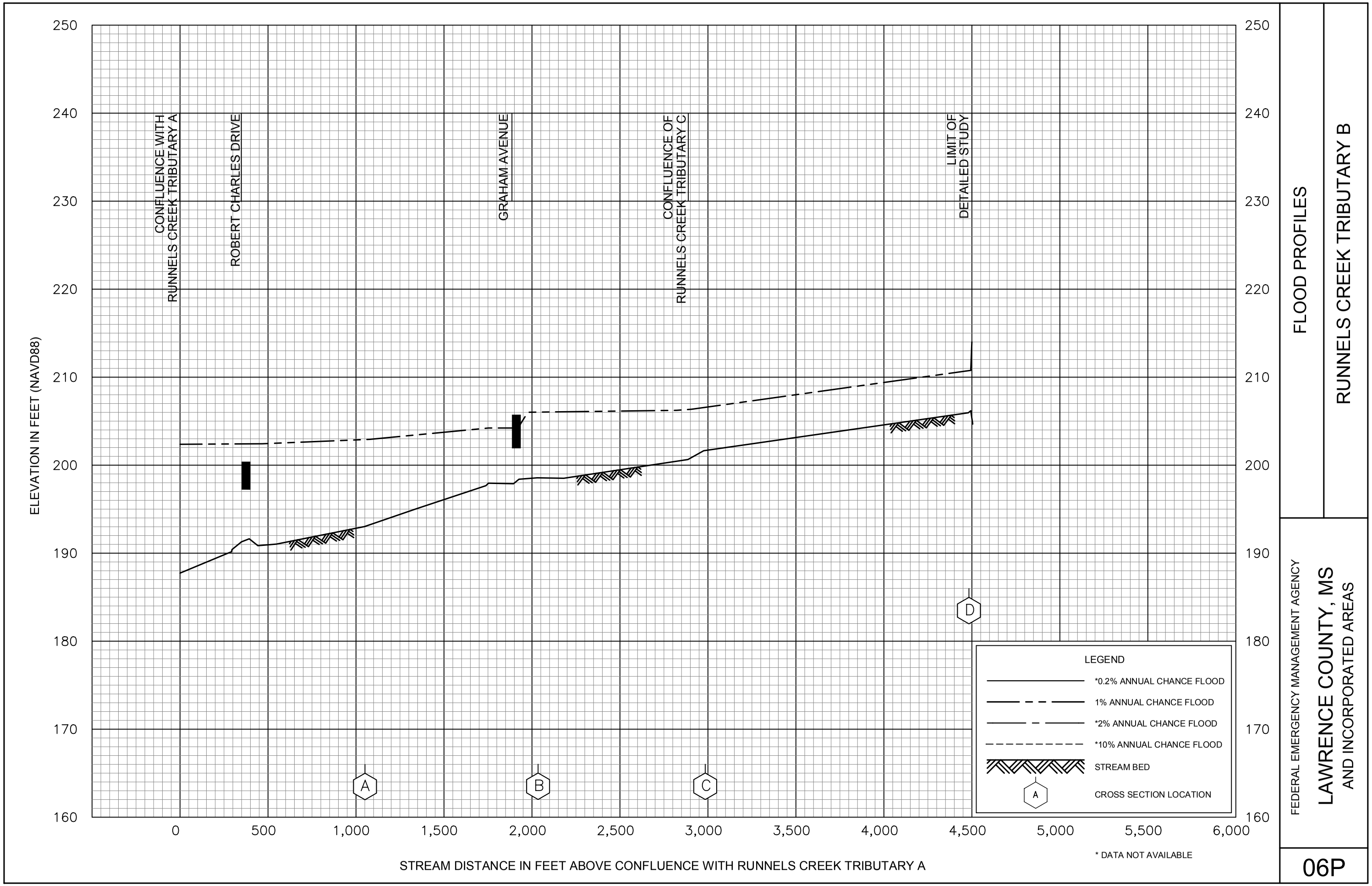
FLOOD PROFILES



FEDERAL EMERGENCY MANAGEMENT AGENCY

LAWRENCE COUNTY, MS
AND INCORPORATED AREAS

05P



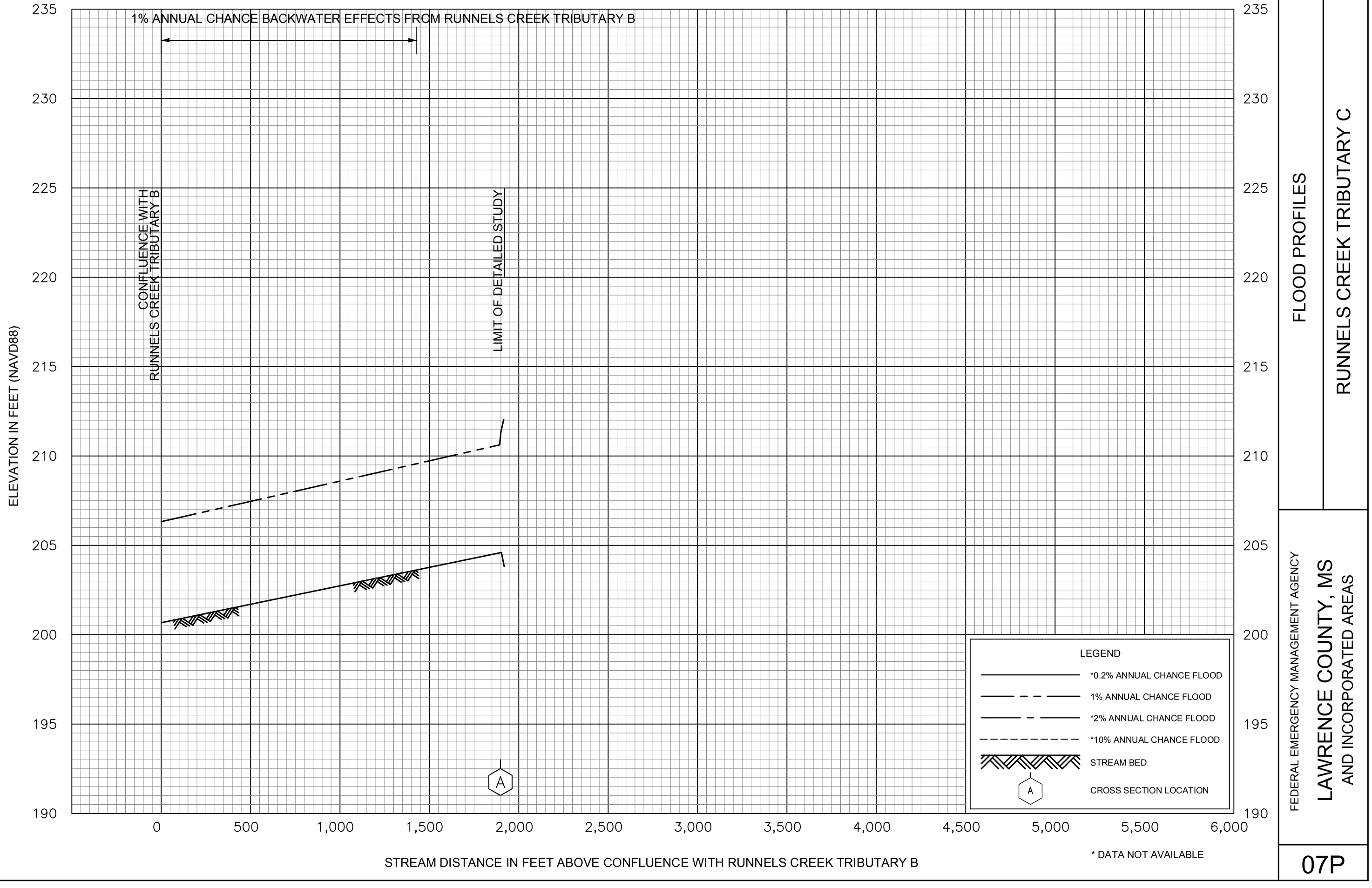
FLOOD PROFILES

RUNNELS CREEK TRIBUTARY B

FEDERAL EMERGENCY MANAGEMENT AGENCY

LAWRENCE COUNTY, MS
AND INCORPORATED AREAS

06P



FLOOD PROFILES

RUNNELS CREEK TRIBUTARY C

FEDERAL EMERGENCY MANAGEMENT AGENCY

LAWRENCE COUNTY, MS
AND INCORPORATED AREAS

07P