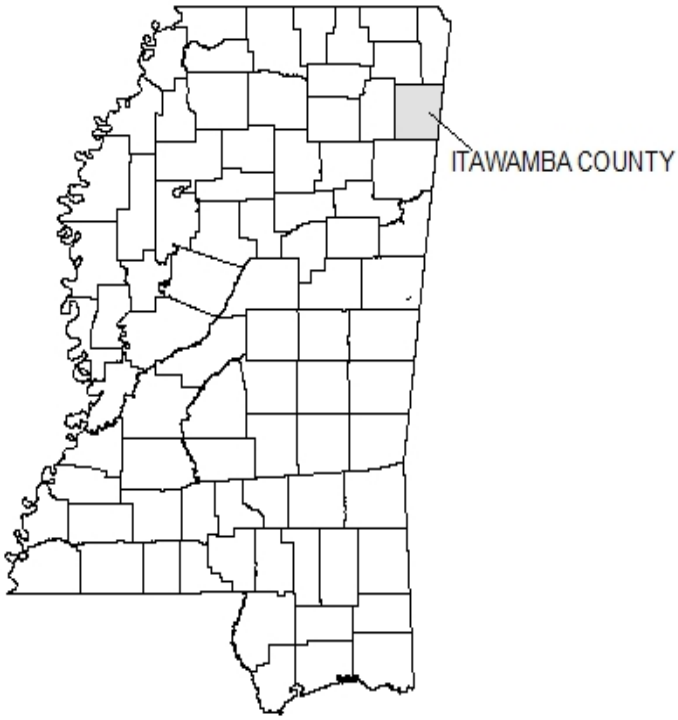
FLOOD INSURANCE STUDY

ITAWAMBA COUNTY, MISSISSIPPI
AND INCORPORATED AREAS

COMMUNITY NAME	**COMMUNITY NUMBER**
FULTON, CITY OF	280081
ITAWAMBA COUNTY (UNINCORPORATED AREAS)	280290
MANTACHIE, TOWN OF	280082
TREMONT, TOWN OF	280242



EFFECTIVE: Month, Day, 2016

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
28057CV000A

NOTICE TO
FLOOD INSURANCE STUDY USERS

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

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

This preliminary Flood Insurance Study contains profiles presented at a reduced scale to minimize reproduction costs. All profiles will be included and printed at full scale in the final published report.

Initial Countywide FIS Effective: TBD

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FLOOD INSURANCE STUDY
ITAWAMBA COUNTY, MISSISSIPPI AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and updates information on the existence and severity of flood hazards in the geographic area of Itawamba County, Mississippi, including the City of Fulton; the Towns of Mantachie and Tremont; and the unincorporated areas of Itawamba County (referred to collectively herein as Itawamba County), and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood-risk data for various areas of the community that will be used to establish actuarial flood insurance rates and to assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (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 Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

This FIS was prepared to include the unincorporated areas of, and incorporated communities within Itawamba County in a countywide FIS. Information on the authority and acknowledgements for each jurisdiction is included in this countywide FIS, as compiled from their previously printed FIS reports. The Towns of Mantachie and Tremont had no previously printed FIS reports.

The hydrologic and hydraulic analyses for Twentymile Creek were performed by Neel-Schaffer, Inc., (the Study Contractor) for FEMA under Contract No. EMW-87-C-2457. This study was completed in 1988. The analyses for the Tombigbee River and the Tennessee-Tombigbee Waterway were performed by the U.S. Army Corps of Engineers (USACE) (Reference 1).

For this countywide FIS, new hydrologic and hydraulic analyses for new enhanced approximate streams were prepared by AECOM for FEMA under Contract No. EMA-2007-CA-5774. This study was completed in December 2009. New hydrologic and hydraulic analyses along the Tombigbee River and new approximate streams were prepared by AECOM under FEMA Contract No. EMW-2014-CA-00187-S01. This study was completed in December 2015.

Base map information shown on this FIRM was provided in digital format by the State of Mississippi and the U.S. Census Bureau. This information was photogrammetrically compiled at a scale of 1:400 from aerial photography dated March 2006.

The coordinate system used for the production of this FIRM is Mississippi State Plane East FIPS 2301. Corner coordinates shown on the FIRM are in latitude and longitude referenced to the UTM projection, North American Datum of 1983 (NAD 83) and the GRS80. Differences in the datum and spheroid used in the production of the FIRMs for adjacent counties may result in slight positional differences in map features at the county boundaries. These differences do not affect the accuracy of information shown on the FIRM.

1.3 Coordination

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

The dates of the initial and final CCO meetings held for the jurisdictions within Itawamba County are shown in the following tabulation:

Community Name	Initial CCO Date	Final CCO Date
City of Fulton	*	March 5, 1991
Itawamba County (Unincorporated Areas)	October 16, 1986	August 6, 1990

*Data not available

For this countywide FIS, an initial CCO meeting was held with the representatives from FEMA, the impacted communities, and the study contractor on May 1, 2008. A final meeting, the Preliminary DFIRM Community Coordination (PDCC), was held on Month DD, YEAR, to review the results of this study.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the geographic area of Itawamba County, Mississippi, including the incorporated communities listed in Section 1.1.

A new detailed study was performed along the Tombigbee River.

An enhanced approximate study was performed along Cumming Creek, Unnamed Trib 4, Tishtony Creek, and Tombigbee River Tributary 6.

For this countywide study, limits of detailed and enhanced approximate streams are shown in Table 1, "Scope of Study."

Table 1. Scope of Study

Stream	Limits of New Enhanced Approximate Study
Cummings Creek	From confluence with Tennessee-Tombigbee Waterway to approximately 11 miles upstream of confluence with Tennessee-Tombigbee Waterway
Unnamed Trib 4	Approximately 1,700 feet downstream of South Access Road to approximately 1,000 feet upstream of Main Street
Tombigbee River Tributary 6	The confluence with Tombigbee River to approximately 1,300 feet upstream of River Road
Tishtony Creek	From confluence with Mantachie Creek to approximately 4 miles upstream of confluence with Mantachie Creek
Stream	**Limits of New Detailed Study**
Tombigbee River	From the Tishomingo/Itawamba County boundary to the Itawamba/Monroe County boundary

Approximate analyses were 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, Itawamba County, and the Study Contractor.

No Letters of Map Change (LOMCs) were recorded for this countywide study.

2.2 Community Description

Itawamba County is located in north-east Mississippi, about 170 miles northeast of Jackson. The county is bordered on the south by Monroe County, on the west by Lee County, on the north by Prentiss and Tishomingo Counties, and on the east by Franklin and Marion Counties, Alabama. U.S. Highway 78; State Highways 23, 25, 363, 370, 371, and 379; along with the Mississippi Export Railway are the primary transportation routes serving the county.

The population of Itawamba County is 23,609 based on the 2015 estimate of the U.S. Census Bureau. The land area of Itawamba County covers approximately 532 square miles (Reference 2).

The climate of Itawamba County is characterized by hot and humid summers, and short, mild winters. Temperatures average 41.2 degrees Fahrenheit (^{O}F) in January and 79.6°F in July. Annual precipitation over the study area averages 58 inches (Reference 3).

2.3 Principal Flood Problems

The principal flood problems in Itawamba County result from the overflow of the Tombigbee River and Twentymile Creek.

Historical flood problems in Itawamba County have been due to overbank flooding on the Tombigbee River and Twentymile Creek. Major floods on the Tombigbee River, listed in order of decreasing magnitude, occurred in March 1955, December 1982, and March 1973 (References 1 and 6). Major floods causing overbank flooding and erosion along Twentymile Creek, also listed in order of decreasing magnitude, occurred in May 1983, December 1982, and March 1973 (Reference 4).

2.4 Flood Protection Measures

A flood control project along Twentymile Creek was completed in December 1966, and is operated and maintained by the Tombigbee River Valley Management (Reference 4). This project does not protect the community against the 1-percent-annual chance flood.

Levee systems along the Tennessee Tombigbee waterway are non-accredited levee. A non-accredited levee system is a levee system that does not meet the requirements of Section 65.10 of the National Flood Insurance. Therefore, even though non-accredited levees are physically shown on a FIRM, the areas behind the levee still show Special Flood Hazard Area (SFHA) and do not protect the 1-percent-annual-chance flood.

3.0 ENGINEERING METHODS

For the flooding sources studied by detailed methods in the community, standard hydrologic and hydraulic study methods were used to determine the flood-hazard data required for this study. Flood events of a magnitude that 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 100-year flood (1-percent chance of annual 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

3.1.1 Methods for Flooding Sources with New or Revised Analyses in Current Study

For this countywide study, hydrologic analyses were carried out to establish peak discharge-frequency relationships for each flooding source studied by detail, enhanced approximate, and approximate methods affecting the community.

Data from USGS gage stations are used to calculate the 10-, 4-, 2-, 1-, and 0.2-percent-annual-chance peak discharge. For this revision, all of the gages are located on Tombigbee River based on the scope of study.

No weighted discharges were calculated for the ungaged locations between the gages because the gages are located fairly close and there is an increase in flow due to the tributaries in between.

The 10-, 25-, 50-, 100-, and 500-year peak flow values for gages (02430500 and 02431500) with no data recorded past the year 1988 are retrieved from the Table 1 of WRIR 91-4037 (Reference 9).

For those gages with data more recent than 1988, new peak flow values are calculated using the Bulletin 17B method. Bulletin 17B codifies the standard methodology for conducting flood-frequency studies in the United States; annual peak flow data are fit to a log-Pearson Type III distribution. This process is automated through the PeakFQ software (Reference 22).

Discharges for the 1-percent-annual-chance recurrence interval for all new enhanced approximate study streams in Itawamba County were determined using the Rural-East Region USGS regression equations for Mississippi as described in the USGS Water-Resources Investigations report 91-4037 (Reference 9). Discharge estimates are calculated for all streams which drain greater than one square mile or to the extent of the effective Zone A study limits, whichever is less.

3.1.2 Methods for Flooding Sources Incorporated from Previous Studies

For the study on the Unincorporated Areas of Itawamba County dated 1991, peak discharges along Twentymile Creek were developed using a Log Pearson Type III analysis (Reference 5) of stream gage data (Reference 6). For verification, discharges were also calculated using USGS regression equations (Reference 24) and the HEC-1 computer model (Reference 7), which was calibrated based on data from the flood of May 1983 (Reference 8). All of these methods compared favorably.

Drainage areas along new enhanced approximate streams were determined using a flow accumulation grid developed from the USGS 10 meter digital elevation models and corrected National Hydrologic Data (NHD) stream coverage. Flow points along stream centerlines were calculated using the regression equations in conjunction with accumulated area for every 10 percent increase in flow along a particular stream.

Table 2. Summary of Discharges

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (Square miles)	PEAK DISCHARGES (cfs) 10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
TENNESSEE-TOMBIGBEE WATERWAY	*	*	*	*	*	*

*Data not Available

Table 2: Summary of Discharges (continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (Square miles)	PEAK DISCHARGES (cfs) 10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
TOMBIGBEE RIVER						
Approximately 2,745 feet downstream of Barrs Ferry Road	666	41,300	38,400	56,000	83,500	130,000
Approximately 1.98 miles upstream of Beans Ferry Road	556	38,820	63,310	52,330	75,030	105,400
Approximately 1,165 feet upstream of Boat Ramp Road	306	27,300	52,500	41,000	64,500	100,000
TWENTYMILE CREEK						
At mouth	179	30,000	39,200	*	43,900	52,600
At State Highway 371	171	28,800	37,700	*	42,200	50,600
Approximately 2.1 miles upstream of State Highway 371	157	26,800	35,000	*	39,000	46,800
At Natchez Trace Parkway	147	25,200	33,000	*	36,900	44,200

*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 tables 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 in conjunction with the data shown on the FIRM.

3.2.1 Methods for Flooding Sources with New or Revised Analyses in Current Study

Analyses of the hydraulic characteristics of flooding from the sources studied by enhanced approximate and approximate methods were carried out to provide estimates of the elevations of floods of the selected recurrence intervals.

Cross section data for streams in the study area were obtained by field survey. The cross sections are located according to established river miles. The distance between

river miles is only approximate. All roads and bridges were field surveyed to obtain elevation and structural geometry data.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles and on the Flood Insurance Rate Map.

Water surface profiles were computed for new enhanced approximate study streams through the use of the USACE Hydraulic Engineering Center River Analysis System (HEC-RAS), version 4.1.0 (Reference 12). Water surface profiles were produced for the 1-percent-annual-chance storms for enhanced approximate studies.

The enhanced approximate study methodology used Watershed Information System (WISE) (Reference 14) as a preprocessor to HEC-RAS. Tools within WISE allowed the engineer to verify that the cross section data was acceptable. The WISE program was used to generate the input data file for HEC-RAS. Then HEC-RAS was used to determine the flood elevation at each cross section of the modeled stream. No floodway was calculated for streams studied by approximate methods.

For the new detailed study along the Tombigbee River, HEC-RAS 4.1.0 was used for all hydraulic analyses performed in this study. For detailed studies, HEC-RAS models are developed for the 10-, 4-, 2-, 1-, and 0.2-percent-annual-chance flood events. These models are used to generate flood elevations which will be mapped on the newly available topographic data.

The hydraulic analyses for this study are based only on the effect on unobstructed flow. The flood elevations as shown on the profiles are thus considered valid only if hydraulic structures in general remain unobstructed and do not fail.

Floodplains were mapped to include backwater effects that govern each flooding source near its downstream extent. Floodplains were reviewed for accuracy and adjusted as necessary.

Roughness coefficients (Manning's "n") for the computations on new detailed streams were chosen by engineering judgment and based on field observation. These roughness coefficients ranged from 0.030 to 0.055 on the channel and 0.06 to 0.15 on the overbank areas. The roughness coefficients for enhanced approximate streams is 0.045 on the channel and 0.08-0.15

3.2.2 Methods for Flooding Sources Incorporated from Previous Studies

For the Itawamba County Unincorporated Areas study dated 1991 and the City of Fulton study dated 1993, 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.

Water surface elevations for the detail studies on Twentymile Creek were calculated using the HEC-2 step-backwater computer program (Reference 10).

Roughness coefficients (Manning's "n") for the computations at Twentymile Creek were estimated on the basis of field inspection. These roughness coefficients ranged from 0.035 to 0.038 in the channel and from 0.08 to 0.10 for the overbank areas.

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

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 (NGVD 29). With the finalization of the North American Vertical Datum of 1988 (NAVD 88), many FIS reports and FIRMs are being prepared using NAVD 88 as the referenced vertical datum. Flood elevations shown in this FIS report and on the FIRM are referenced to NAVD 88. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. It is important to note that adjacent counties may be referenced to NGVD 29. This may result in differences in base flood elevations across county lines.

The elevations shown in the FIS report and on the FIRM for Itawamba County are referenced to NAVD88. Ground, structure, and flood elevations may be compared and/or referenced to NGVD29, add 0.21 feet to the NAVD88 elevation. The 0.21 feet value is an average for the entire county. The BFEs shown on the FIRM represent whole-foot rounded values. For example, a BFE of 12.4 feet will appear as 12 feet on the FIRM and 12.6 feet as 13 feet. Users who wish to convert the elevations in this FIS report to NGVD29 should apply the stated conversion factor to elevations shown on the Flood Profiles and supporting data tables in the FIS report, which are shown at a minimum to the nearest 0.1 foot.

For information regarding conversion between the NGVD and NAVD, visit the National Geodetic Survey website at www.ngs.noaa.gov, or contact the National Geodetic Survey at the following address:

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

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. Therefore, each FIS report provides 1-percent-annual-chance floodplain data, which may include a combination of the following: 10-, 2-, 1-, and 0.2-percent-annual-chance flood elevations; delineations of the 1- and 0.2-percent-annual-chance floodplains; and a 1-percent-annual-chance floodway. This information is presented on the FIRM and in many components of the FIS report, including Flood Profiles, Floodway Data tables, and Summary of Stillwater Elevation tables. Users should reference the data presented in the FIS report as well as additional information that may be available at the local community 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-percent-annual-chance floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using LiDAR from 2012 at a 3.2 foot Nominal Point Spacing Value (Reference 23).

For each stream studied by approximate methods, the 1-percent-annual-chance floodplain boundaries have been delineated using LiDAR from 2012 at a 3.2 foot Nominal Point Spacing Value (Reference 23).

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, AE, and X) and 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 approximate methods, only the 1-percent-annual-chance floodplain boundary is shown on the Flood Insurance Rate Map (Exhibit 2).

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.

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. To reduce the risk of property damage in areas where the stream velocities are high, the community may wish to restrict development in areas outside the floodway.

Near the mouths of streams studied in detail, floodway computations are made without regard to flood elevations on the receiving water body.

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 a 1.0-foot increase in the BFEs at any point within the community.

The area between the floodway and 1-percent-annual-chance floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 1-percent-annual-chance flood 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, "Floodway Schematic."

No floodways were computed for streams studied by approximate methods because of limitations in the approximate study methodology.

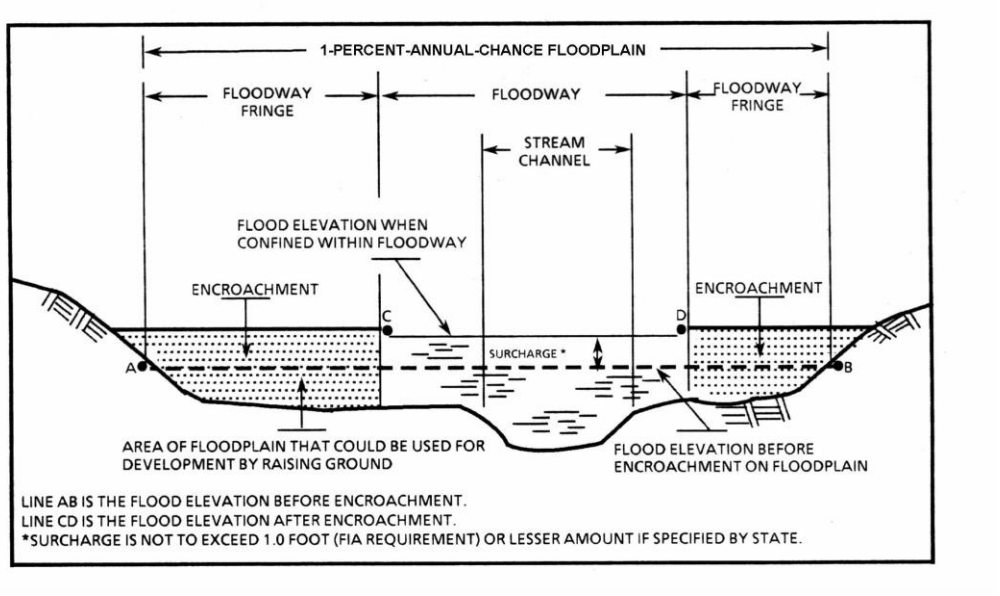

Figure 1. Floodway Schematic

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 rate 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 depths are shown within this zone.

Zone AE

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

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 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 (sq. mi.), and areas protected from the 1-percent-annual-chance flood by levees. No BFEs or depths are shown within this zone.

6.0 FLOOD INSURANCE RATE MAP

The Flood Insurance Rate Map (FIRM) is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 1-percent-annual-chance floodplains that were studied by detailed methods, show 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 computation. The countywide Flood Insurance Rate Map presents flooding information for the entire geographic area of Itawamba County. Previously, Flood Insurance Rate Maps were prepared for each incorporated community and the unincorporated areas of the County identified as flood-prone. This countywide Flood Insurance Rate Map also includes flood-hazard information that was presented separately on Flood Boundary and Floodway Maps, where applicable. Historical data relating to the maps prepared for each community are presented in Table 3, "Community Map History."

[insert community map history: table 6]

7.0 OTHER STUDIES

The Flood Insurance Studies published for Marion and Franklin Counties, Alabama, and Lee and Monroe Counties, Mississippi (References 15-18), and the City of Fulton, Mississippi (Reference 19), agree with this study. The Flood Insurance Rate Maps for the City of Red Bay, Alabama, and the Town of Mantachie, Mississippi (References 20 and 21), agree with this study.

Information pertaining to revised and unrevised flood hazards for each jurisdiction within Itawamba County has been compiled into this FIS. Therefore, this FIS report supersedes or is compatible with all previously printed FIS reports, FIRMs, and Flood Hazard Boundary Maps (FBFMs) for all jurisdictions within Itawamba County, and should be considered authoritative for the purposed of the NFIP.

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this FIS can be obtained by contacting FEMA, Federal Insurance and Mitigation Administration, Koger Center - Rutgers Building, 3003 Chamblee Tucker Road, Atlanta, Georgia 30341.

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

9.0 BIBLIOGRAPHY AND REFERENCES

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20. Federal Emergency Management Agency, Flood Insurance Rate Map, City of Red Bay, Franklin County, Alabama, January 1982.

21. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Mantachie, Itawamba County, Mississippi, September 1985.

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NOTICE TO
FLOOD INSURANCE STUDY USERS

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

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

This preliminary Flood Insurance Study contains profiles presented at a reduced scale to minimize reproduction costs. All profiles will be included and printed at full scale in the final published report.

Initial Countywide FIS Effective: TBD

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FLOOD INSURANCE STUDY
ITAWAMBA COUNTY, MISSISSIPPI AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and updates information on the existence and severity of flood hazards in the geographic area of Itawamba County, Mississippi, including the City of Fulton; the Towns of Mantachie and Tremont; and the unincorporated areas of Itawamba County (referred to collectively herein as Itawamba County), and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood-risk data for various areas of the community that will be used to establish actuarial flood insurance rates and to assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (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 Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

This FIS was prepared to include the unincorporated areas of, and incorporated communities within Itawamba County in a countywide FIS. Information on the authority and acknowledgements for each jurisdiction is included in this countywide FIS, as compiled from their previously printed FIS reports. The Towns of Mantachie and Tremont had no previously printed FIS reports.

The hydrologic and hydraulic analyses for Twentymile Creek were performed by Neel-Schaffer, Inc., (the Study Contractor) for FEMA under Contract No. EMW-87-C-2457. This study was completed in 1988. The analyses for the Tombigbee River and the Tennessee-Tombigbee Waterway were performed by the U.S. Army Corps of Engineers (USACE) (Reference 1).

For this countywide FIS, new hydrologic and hydraulic analyses for new enhanced approximate streams were prepared by AECOM for FEMA under Contract No. EMA-2007-CA-5774. This study was completed in December 2009. New hydrologic and hydraulic analyses along the Tombigbee River and new approximate streams were prepared by AECOM under FEMA Contract No. EMW-2014-CA-00187-S01. This study was completed in December 2015.

Base map information shown on this FIRM was provided in digital format by the State of Mississippi and the U.S. Census Bureau. This information was photogrammetrically compiled at a scale of 1:400 from aerial photography dated March 2006.

The coordinate system used for the production of this FIRM is Mississippi State Plane East FIPS 2301. Corner coordinates shown on the FIRM are in latitude and longitude referenced to the UTM projection, North American Datum of 1983 (NAD 83) and the GRS80. Differences in the datum and spheroid used in the production of the FIRMs for adjacent counties may result in slight positional differences in map features at the county boundaries. These differences do not affect the accuracy of information shown on the FIRM.

1.3 Coordination

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

The dates of the initial and final CCO meetings held for the jurisdictions within Itawamba County are shown in the following tabulation:

Community Name	Initial CCO Date	Final CCO Date
City of Fulton	*	March 5, 1991
Itawamba County (Unincorporated Areas)	October 16, 1986	August 6, 1990

*Data not available

For this countywide FIS, an initial CCO meeting was held with the representatives from FEMA, the impacted communities, and the study contractor on May 1, 2008. A final meeting, the Preliminary DFIRM Community Coordination (PDCC), was held on Month DD, YEAR, to review the results of this study.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the geographic area of Itawamba County, Mississippi, including the incorporated communities listed in Section 1.1.

A new detailed study was performed along the Tombigbee River.

An enhanced approximate study was performed along Cumming Creek, Unnamed Trib 4, Tishtony Creek, and Tombigbee River Tributary 6.

For this countywide study, limits of detailed and enhanced approximate streams are shown in Table 1, "Scope of Study."

Table 1. Scope of Study

Stream	Limits of New Enhanced Approximate Study
Cummings Creek	From confluence with Tennessee-Tombigbee Waterway to approximately 11 miles upstream of confluence with Tennessee-Tombigbee Waterway
Unnamed Trib 4	Approximately 1,700 feet downstream of South Access Road to approximately 1,000 feet upstream of Main Street
Tombigbee River Tributary 6	The confluence with Tombigbee River to approximately 1,300 feet upstream of River Road
Tishtony Creek	From confluence with Mantachie Creek to approximately 4 miles upstream of confluence with Mantachie Creek
Stream	**Limits of New Detailed Study**
Tombigbee River	From the Tishomingo/Itawamba County boundary to the Itawamba/Monroe County boundary

Approximate analyses were 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, Itawamba County, and the Study Contractor.

No Letters of Map Change (LOMCs) were recorded for this countywide study.

2.2 Community Description

Itawamba County is located in north-east Mississippi, about 170 miles northeast of Jackson. The county is bordered on the south by Monroe County, on the west by Lee County, on the north by Prentiss and Tishomingo Counties, and on the east by Franklin and Marion Counties, Alabama. U.S. Highway 78; State Highways 23, 25, 363, 370, 371, and 379; along with the Mississippi Export Railway are the primary transportation routes serving the county.

The population of Itawamba County is 23,609 based on the 2015 estimate of the U.S. Census Bureau. The land area of Itawamba County covers approximately 532 square miles (Reference 2).

The climate of Itawamba County is characterized by hot and humid summers, and short, mild winters. Temperatures average 41.2 degrees Fahrenheit (^{O}F) in January and 79.6°F in July. Annual precipitation over the study area averages 58 inches (Reference 3).

2.3 Principal Flood Problems

The principal flood problems in Itawamba County result from the overflow of the Tombigbee River and Twentymile Creek.

Historical flood problems in Itawamba County have been due to overbank flooding on the Tombigbee River and Twentymile Creek. Major floods on the Tombigbee River, listed in order of decreasing magnitude, occurred in March 1955, December 1982, and March 1973 (References 1 and 6). Major floods causing overbank flooding and erosion along Twentymile Creek, also listed in order of decreasing magnitude, occurred in May 1983, December 1982, and March 1973 (Reference 4).

2.4 Flood Protection Measures

A flood control project along Twentymile Creek was completed in December 1966, and is operated and maintained by the Tombigbee River Valley Management (Reference 4). This project does not protect the community against the 1-percent-annual chance flood.

Levee systems along the Tennessee Tombigbee waterway are non-accredited levee. A non-accredited levee system is a levee system that does not meet the requirements of Section 65.10 of the National Flood Insurance. Therefore, even though non-accredited levees are physically shown on a FIRM, the areas behind the levee still show Special Flood Hazard Area (SFHA) and do not protect the 1-percent-annual-chance flood.

3.0 ENGINEERING METHODS

For the flooding sources studied by detailed methods in the community, standard hydrologic and hydraulic study methods were used to determine the flood-hazard data required for this study. Flood events of a magnitude that 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 100-year flood (1-percent chance of annual 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

3.1.1 Methods for Flooding Sources with New or Revised Analyses in Current Study

For this countywide study, hydrologic analyses were carried out to establish peak discharge-frequency relationships for each flooding source studied by detail, enhanced approximate, and approximate methods affecting the community.

Data from USGS gage stations are used to calculate the 10-, 4-, 2-, 1-, and 0.2-percent-annual-chance peak discharge. For this revision, all of the gages are located on Tombigbee River based on the scope of study.

No weighted discharges were calculated for the ungaged locations between the gages because the gages are located fairly close and there is an increase in flow due to the tributaries in between.

The 10-, 25-, 50-, 100-, and 500-year peak flow values for gages (02430500 and 02431500) with no data recorded past the year 1988 are retrieved from the Table 1 of WRIR 91-4037 (Reference 9).

For those gages with data more recent than 1988, new peak flow values are calculated using the Bulletin 17B method. Bulletin 17B codifies the standard methodology for conducting flood-frequency studies in the United States; annual peak flow data are fit to a log-Pearson Type III distribution. This process is automated through the PeakFQ software (Reference 22).

Discharges for the 1-percent-annual-chance recurrence interval for all new enhanced approximate study streams in Itawamba County were determined using the Rural-East Region USGS regression equations for Mississippi as described in the USGS Water-Resources Investigations report 91-4037 (Reference 9). Discharge estimates are calculated for all streams which drain greater than one square mile or to the extent of the effective Zone A study limits, whichever is less.

3.1.2 Methods for Flooding Sources Incorporated from Previous Studies

For the study on the Unincorporated Areas of Itawamba County dated 1991, peak discharges along Twentymile Creek were developed using a Log Pearson Type III analysis (Reference 5) of stream gage data (Reference 6). For verification, discharges were also calculated using USGS regression equations (Reference 24) and the HEC-1 computer model (Reference 7), which was calibrated based on data from the flood of May 1983 (Reference 8). All of these methods compared favorably.

Drainage areas along new enhanced approximate streams were determined using a flow accumulation grid developed from the USGS 10 meter digital elevation models and corrected National Hydrologic Data (NHD) stream coverage. Flow points along stream centerlines were calculated using the regression equations in conjunction with accumulated area for every 10 percent increase in flow along a particular stream.

Table 2. Summary of Discharges

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (Square miles)	PEAK DISCHARGES (cfs) 10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
TENNESSEE-TOMBIGBEE WATERWAY	*	*	*	*	*	*

*Data not Available

Table 2: Summary of Discharges (continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (Square miles)	PEAK DISCHARGES (cfs) 10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
TOMBIGBEE RIVER						
Approximately 2,745 feet downstream of Barrs Ferry Road	666	41,300	38,400	56,000	83,500	130,000
Approximately 1.98 miles upstream of Beans Ferry Road	556	38,820	63,310	52,330	75,030	105,400
Approximately 1,165 feet upstream of Boat Ramp Road	306	27,300	52,500	41,000	64,500	100,000
TWENTYMILE CREEK						
At mouth	179	30,000	39,200	*	43,900	52,600
At State Highway 371	171	28,800	37,700	*	42,200	50,600
Approximately 2.1 miles upstream of State Highway 371	157	26,800	35,000	*	39,000	46,800
At Natchez Trace Parkway	147	25,200	33,000	*	36,900	44,200

*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 tables 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 in conjunction with the data shown on the FIRM.

3.2.1 Methods for Flooding Sources with New or Revised Analyses in Current Study

Analyses of the hydraulic characteristics of flooding from the sources studied by enhanced approximate and approximate methods were carried out to provide estimates of the elevations of floods of the selected recurrence intervals.

Cross section data for streams in the study area were obtained by field survey. The cross sections are located according to established river miles. The distance between

river miles is only approximate. All roads and bridges were field surveyed to obtain elevation and structural geometry data.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles and on the Flood Insurance Rate Map.

Water surface profiles were computed for new enhanced approximate study streams through the use of the USACE Hydraulic Engineering Center River Analysis System (HEC-RAS), version 4.1.0 (Reference 12). Water surface profiles were produced for the 1-percent-annual-chance storms for enhanced approximate studies.

The enhanced approximate study methodology used Watershed Information System (WISE) (Reference 14) as a preprocessor to HEC-RAS. Tools within WISE allowed the engineer to verify that the cross section data was acceptable. The WISE program was used to generate the input data file for HEC-RAS. Then HEC-RAS was used to determine the flood elevation at each cross section of the modeled stream. No floodway was calculated for streams studied by approximate methods.

For the new detailed study along the Tombigbee River, HEC-RAS 4.1.0 was used for all hydraulic analyses performed in this study. For detailed studies, HEC-RAS models are developed for the 10-, 4-, 2-, 1-, and 0.2-percent-annual-chance flood events. These models are used to generate flood elevations which will be mapped on the newly available topographic data.

The hydraulic analyses for this study are based only on the effect on unobstructed flow. The flood elevations as shown on the profiles are thus considered valid only if hydraulic structures in general remain unobstructed and do not fail.

Floodplains were mapped to include backwater effects that govern each flooding source near its downstream extent. Floodplains were reviewed for accuracy and adjusted as necessary.

Roughness coefficients (Manning's "n") for the computations on new detailed streams were chosen by engineering judgment and based on field observation. These roughness coefficients ranged from 0.030 to 0.055 on the channel and 0.06 to 0.15 on the overbank areas. The roughness coefficients for enhanced approximate streams is 0.045 on the channel and 0.08-0.15

3.2.2 Methods for Flooding Sources Incorporated from Previous Studies

For the Itawamba County Unincorporated Areas study dated 1991 and the City of Fulton study dated 1993, 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.

Water surface elevations for the detail studies on Twentymile Creek were calculated using the HEC-2 step-backwater computer program (Reference 10).

Roughness coefficients (Manning's "n") for the computations at Twentymile Creek were estimated on the basis of field inspection. These roughness coefficients ranged from 0.035 to 0.038 in the channel and from 0.08 to 0.10 for the overbank areas.

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

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 (NGVD 29). With the finalization of the North American Vertical Datum of 1988 (NAVD 88), many FIS reports and FIRMs are being prepared using NAVD 88 as the referenced vertical datum. Flood elevations shown in this FIS report and on the FIRM are referenced to NAVD 88. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. It is important to note that adjacent counties may be referenced to NGVD 29. This may result in differences in base flood elevations across county lines.

The elevations shown in the FIS report and on the FIRM for Itawamba County are referenced to NAVD88. Ground, structure, and flood elevations may be compared and/or referenced to NGVD29, add 0.21 feet to the NAVD88 elevation. The 0.21 feet value is an average for the entire county. The BFEs shown on the FIRM represent whole-foot rounded values. For example, a BFE of 12.4 feet will appear as 12 feet on the FIRM and 12.6 feet as 13 feet. Users who wish to convert the elevations in this FIS report to NGVD29 should apply the stated conversion factor to elevations shown on the Flood Profiles and supporting data tables in the FIS report, which are shown at a minimum to the nearest 0.1 foot.

For information regarding conversion between the NGVD and NAVD, visit the National Geodetic Survey website at www.ngs.noaa.gov, or contact the National Geodetic Survey at the following address:

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

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. Therefore, each FIS report provides 1-percent-annual-chance floodplain data, which may include a combination of the following: 10-, 2-, 1-, and 0.2-percent-annual-chance flood elevations; delineations of the 1- and 0.2-percent-annual-chance floodplains; and a 1-percent-annual-chance floodway. This information is presented on the FIRM and in many components of the FIS report, including Flood Profiles, Floodway Data tables, and Summary of Stillwater Elevation tables. Users should reference the data presented in the FIS report as well as additional information that may be available at the local community 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-percent-annual-chance floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using LiDAR from 2012 at a 3.2 foot Nominal Point Spacing Value (Reference 23).

For each stream studied by approximate methods, the 1-percent-annual-chance floodplain boundaries have been delineated using LiDAR from 2012 at a 3.2 foot Nominal Point Spacing Value (Reference 23).

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, AE, and X) and 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 approximate methods, only the 1-percent-annual-chance floodplain boundary is shown on the Flood Insurance Rate Map (Exhibit 2).

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.

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. To reduce the risk of property damage in areas where the stream velocities are high, the community may wish to restrict development in areas outside the floodway.

Near the mouths of streams studied in detail, floodway computations are made without regard to flood elevations on the receiving water body.

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 a 1.0-foot increase in the BFEs at any point within the community.

The area between the floodway and 1-percent-annual-chance floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 1-percent-annual-chance flood 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, "Floodway Schematic."

No floodways were computed for streams studied by approximate methods because of limitations in the approximate study methodology.

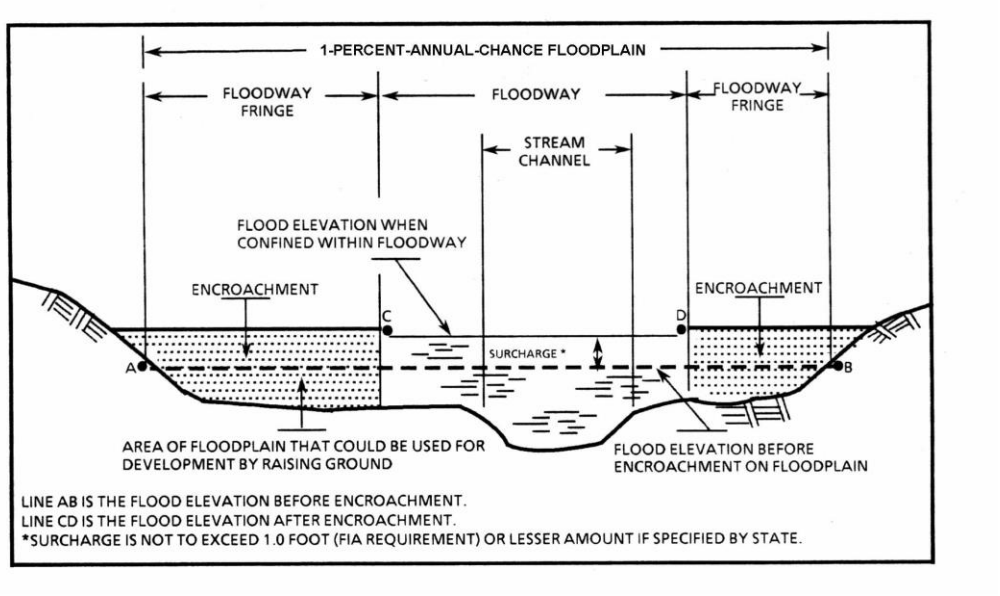

Figure 1. Floodway Schematic

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 rate 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 depths are shown within this zone.

Zone AE

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

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 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 (sq. mi.), and areas protected from the 1-percent-annual-chance flood by levees. No BFEs or depths are shown within this zone.

6.0 FLOOD INSURANCE RATE MAP

The Flood Insurance Rate Map (FIRM) is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 1-percent-annual-chance floodplains that were studied by detailed methods, show 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 computation. The countywide Flood Insurance Rate Map presents flooding information for the entire geographic area of Itawamba County. Previously, Flood Insurance Rate Maps were prepared for each incorporated community and the unincorporated areas of the County identified as flood-prone. This countywide Flood Insurance Rate Map also includes flood-hazard information that was presented separately on Flood Boundary and Floodway Maps, where applicable. Historical data relating to the maps prepared for each community are presented in Table 3, "Community Map History."

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
Fulton, City of	January 4, 1974	January 30, 1976	September 4, 1985	February 3, 1993
Itawamba County (Unincorporated Areas)	May 12, 1978	-	September 4, 1991	-
Manatchie, Town of	June 21, 1974	-	September 18, 1985	-
Tremont, Town of	-	-	-	-

7.0 OTHER STUDIES

The Flood Insurance Studies published for Marion and Franklin Counties, Alabama, and Lee and Monroe Counties, Mississippi (References 15-18), and the City of Fulton, Mississippi (Reference 19), agree with this study. The Flood Insurance Rate Maps for the City of Red Bay, Alabama, and the Town of Mantachie, Mississippi (References 20 and 21), agree with this study.

Information pertaining to revised and unrevised flood hazards for each jurisdiction within Itawamba County has been compiled into this FIS. Therefore, this FIS report supersedes or is compatible with all previously printed FIS reports, FIRMs, and Flood Hazard Boundary Maps (FBFMs) for all jurisdictions within Itawamba County, and should be considered authoritative for the purposed of the NFIP.

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this FIS can be obtained by contacting FEMA, Federal Insurance and Mitigation Administration, Koger Center - Rutgers Building, 3003 Chamblee Tucker Road, Atlanta, Georgia 30341.

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

9.0 BIBLIOGRAPHY AND REFERENCES

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18. Federal Emergency Management Agency, Flood Insurance Study, Monroe County and Incorporated Areas, Mississippi, March 1988.

19. Federal Emergency Management Agency, Flood Insurance Study, City of Fulton, Itawamba County, Mississippi, February 1993.

20. Federal Emergency Management Agency, Flood Insurance Rate Map, City of Red Bay, Franklin County, Alabama, January 1982.

21. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Mantachie, Itawamba County, Mississippi, September 1985.

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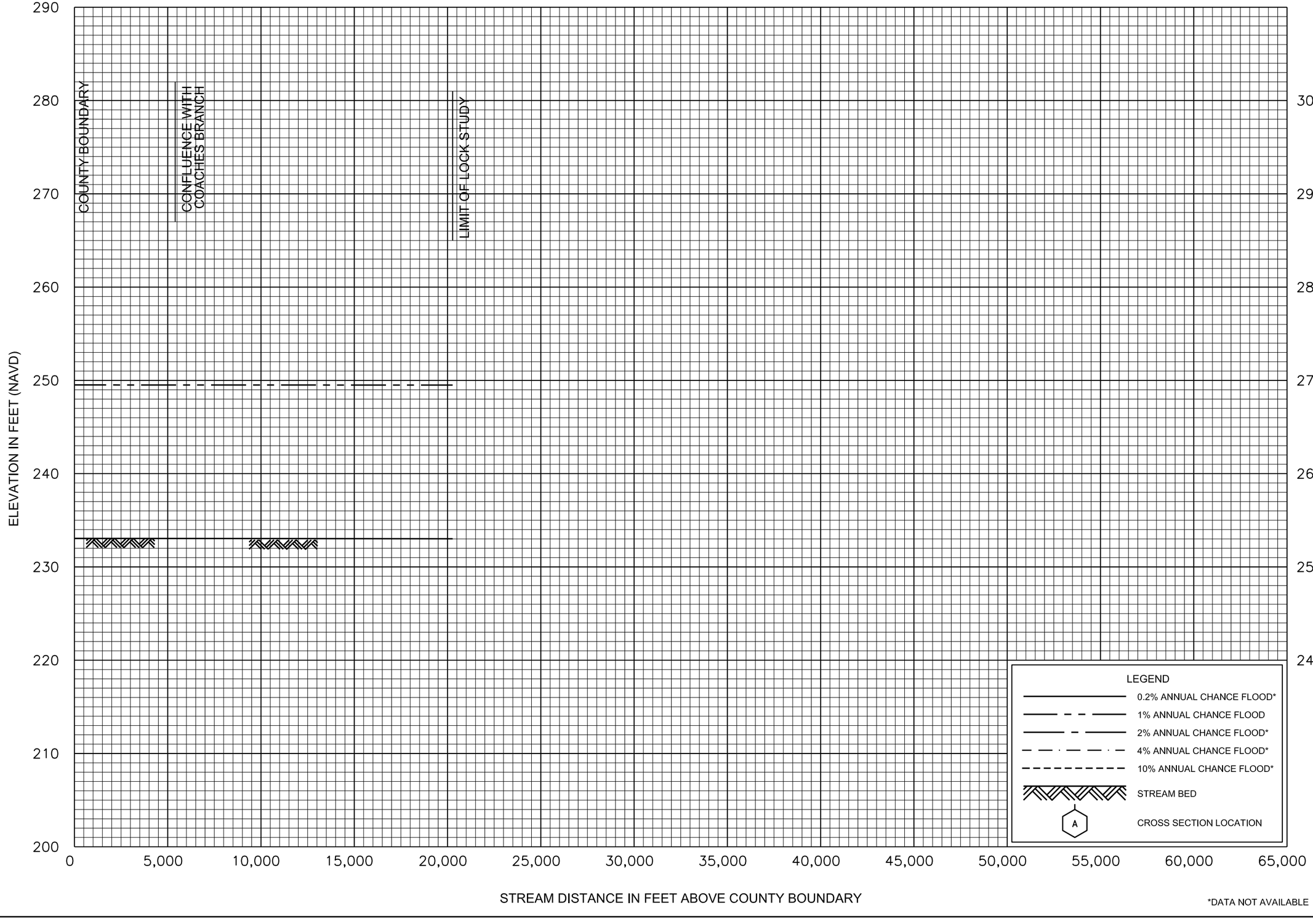


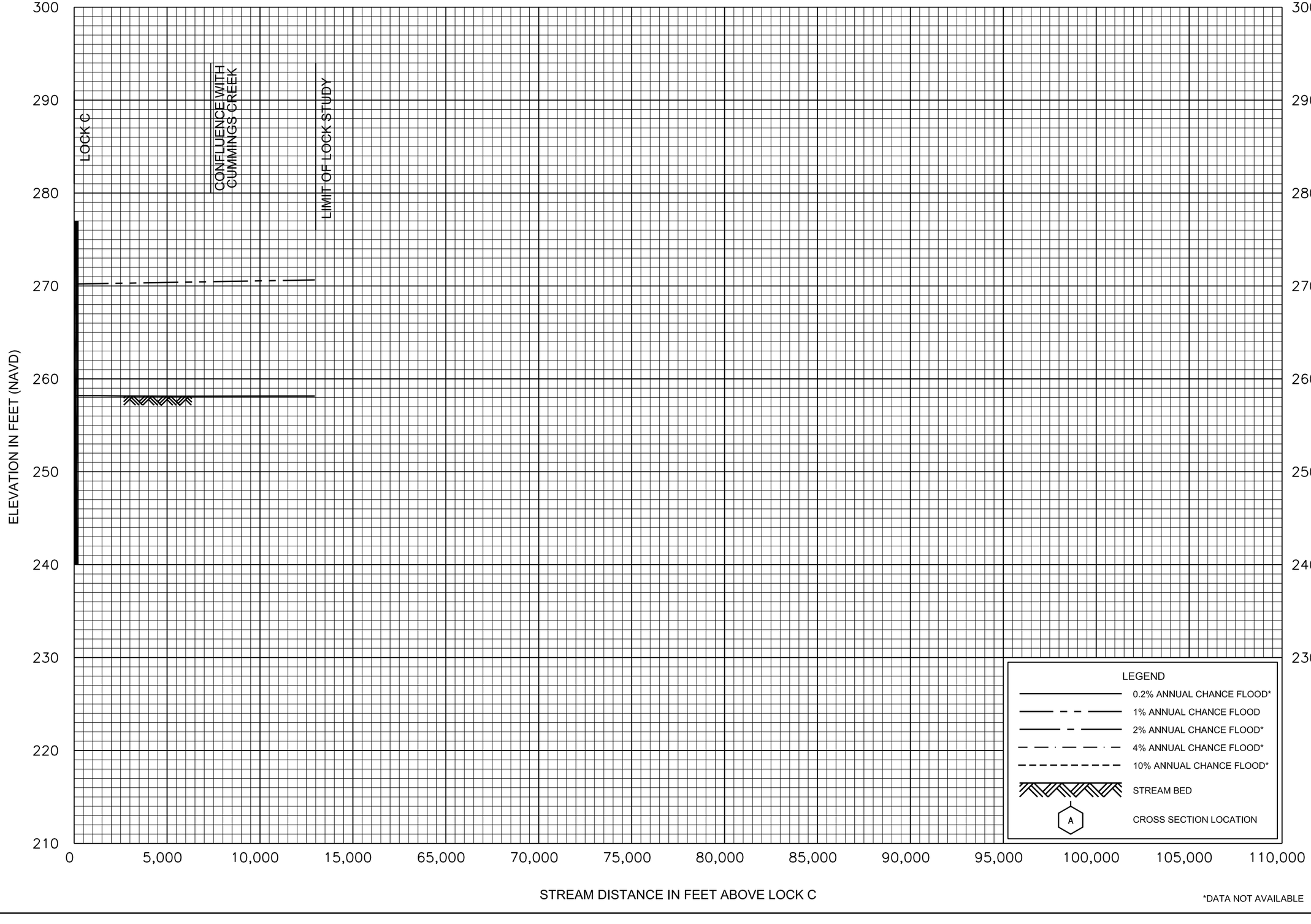
FLOOD PROFILES

TENNESSEE-TOMBIGBEE WATERWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS

01P



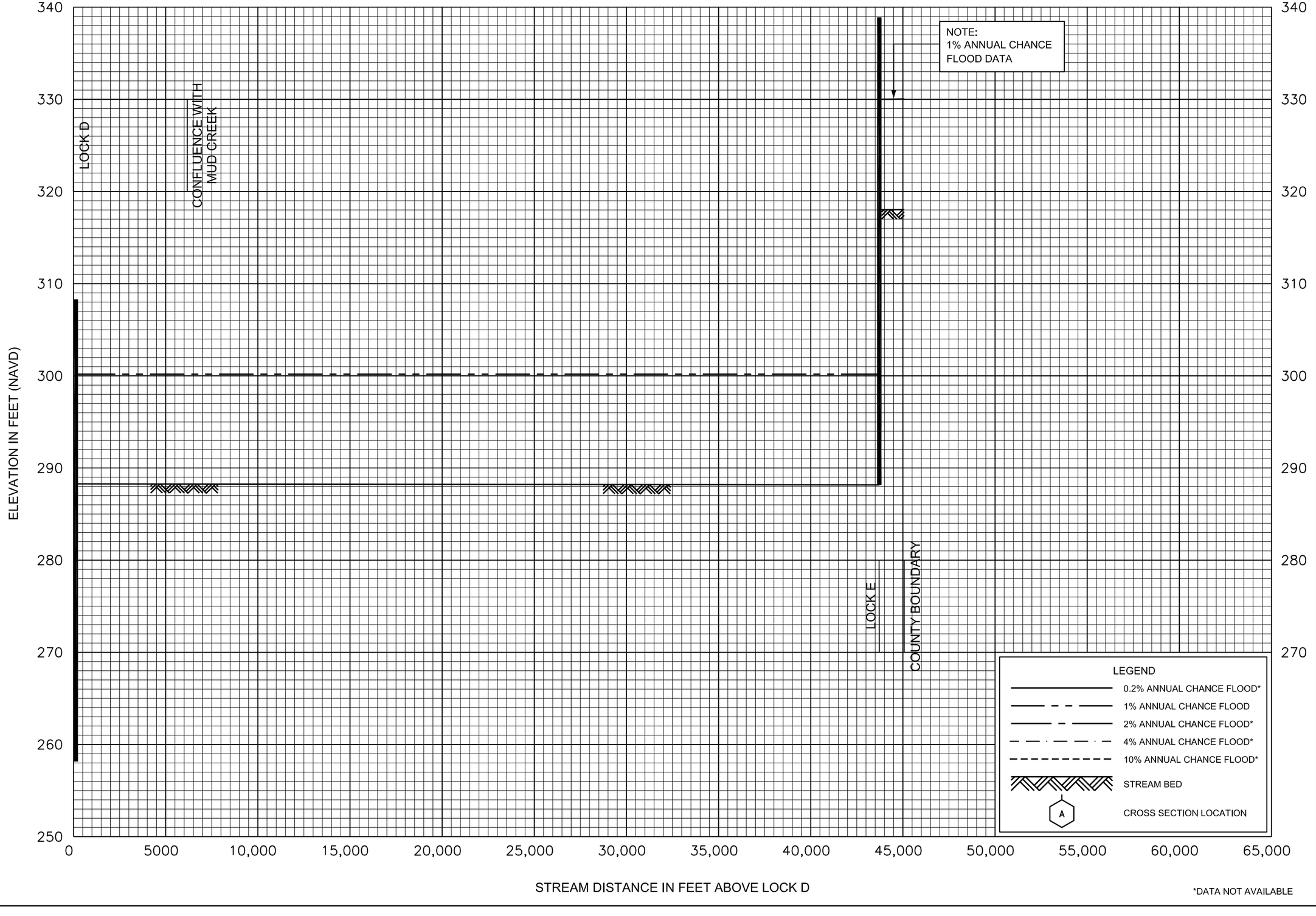
FLOOD PROFILES

TENNESSEE-TOMBIGBEE WATERWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS

02P



*DATA NOT AVAILABLE

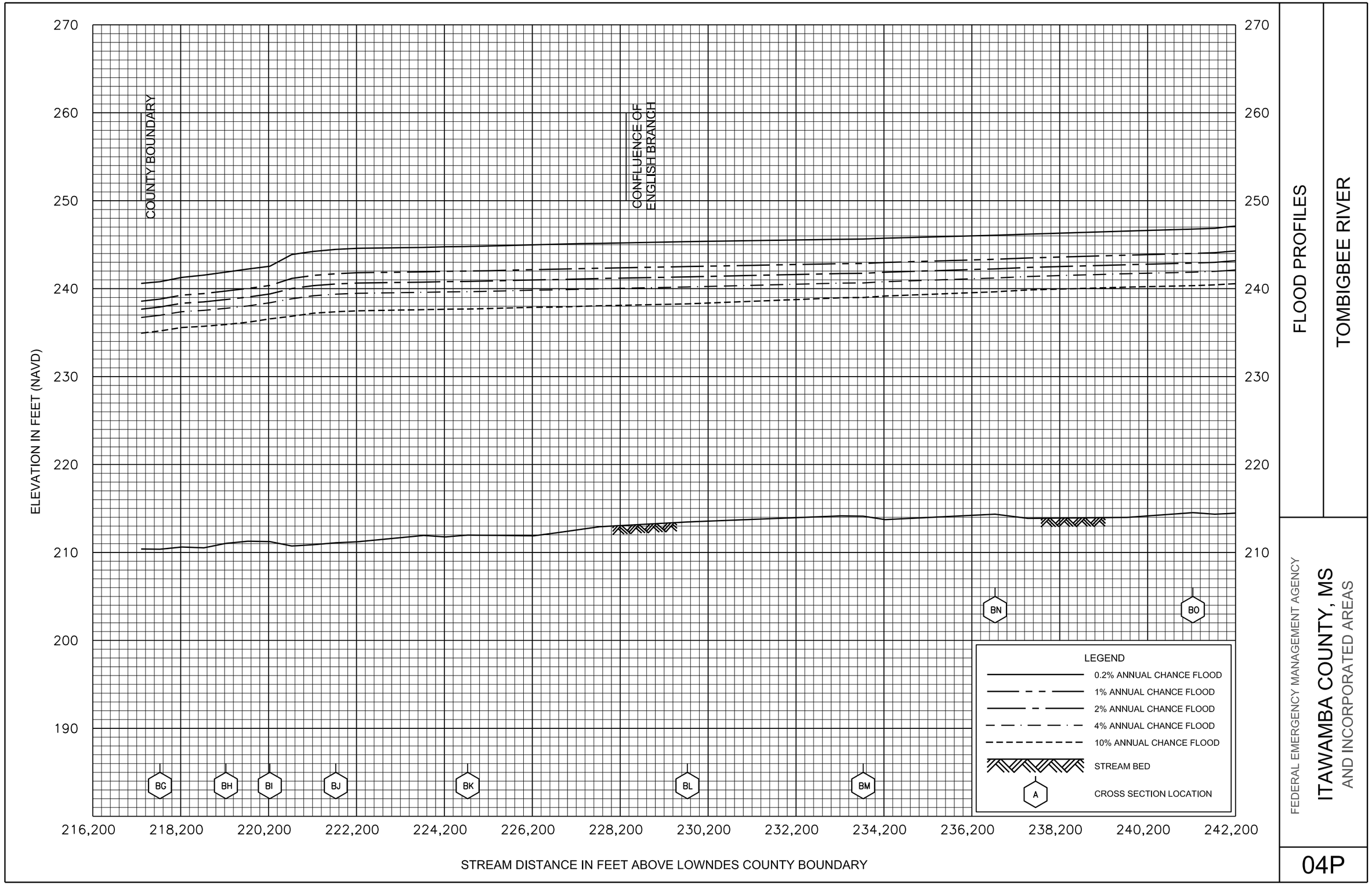
FLOOD PROFILES

TENNESSEE-TOMBIGBEE WATERWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS

03P



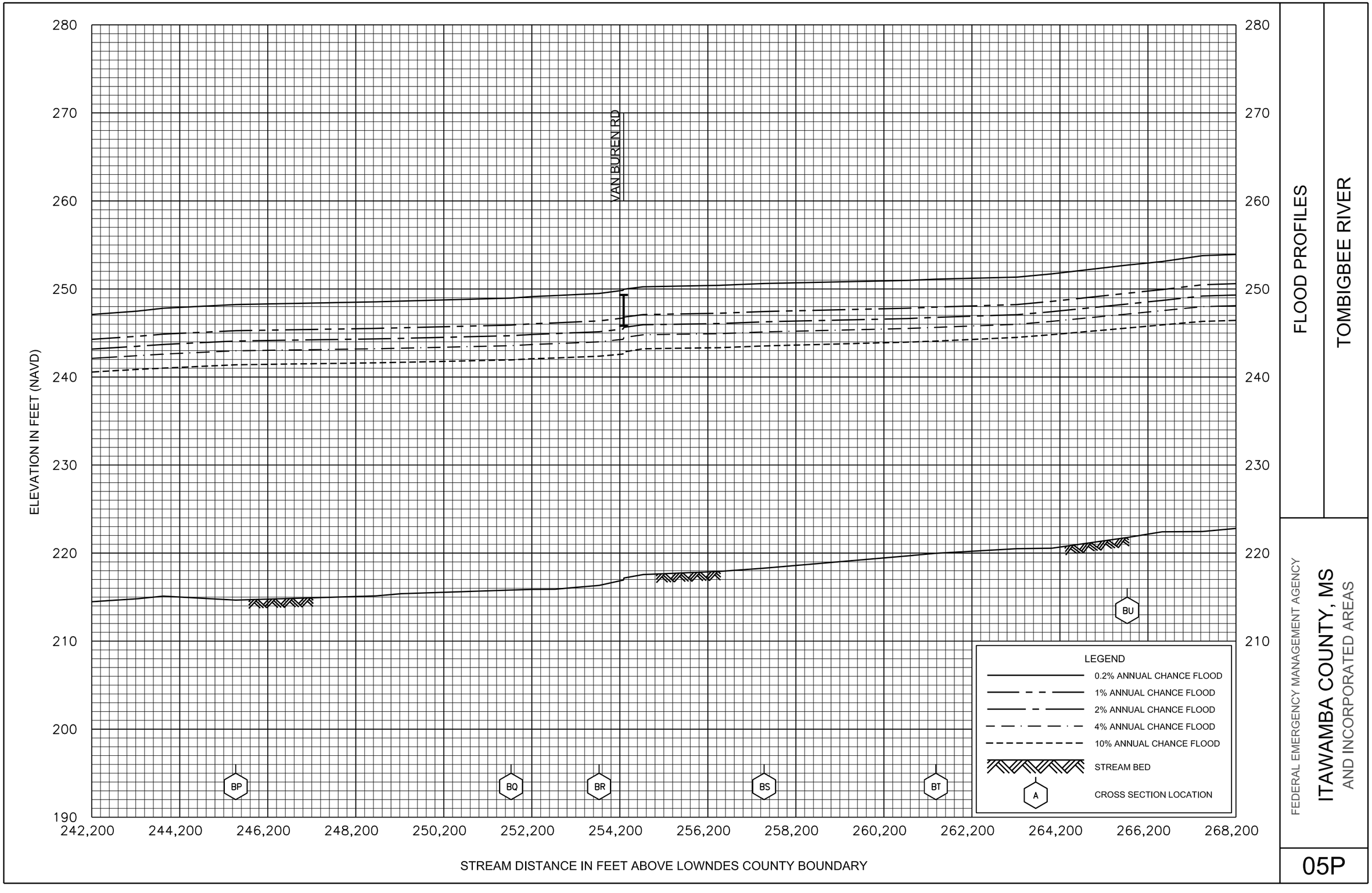
FLOOD PROFILES

TOMBIGBEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS

04P



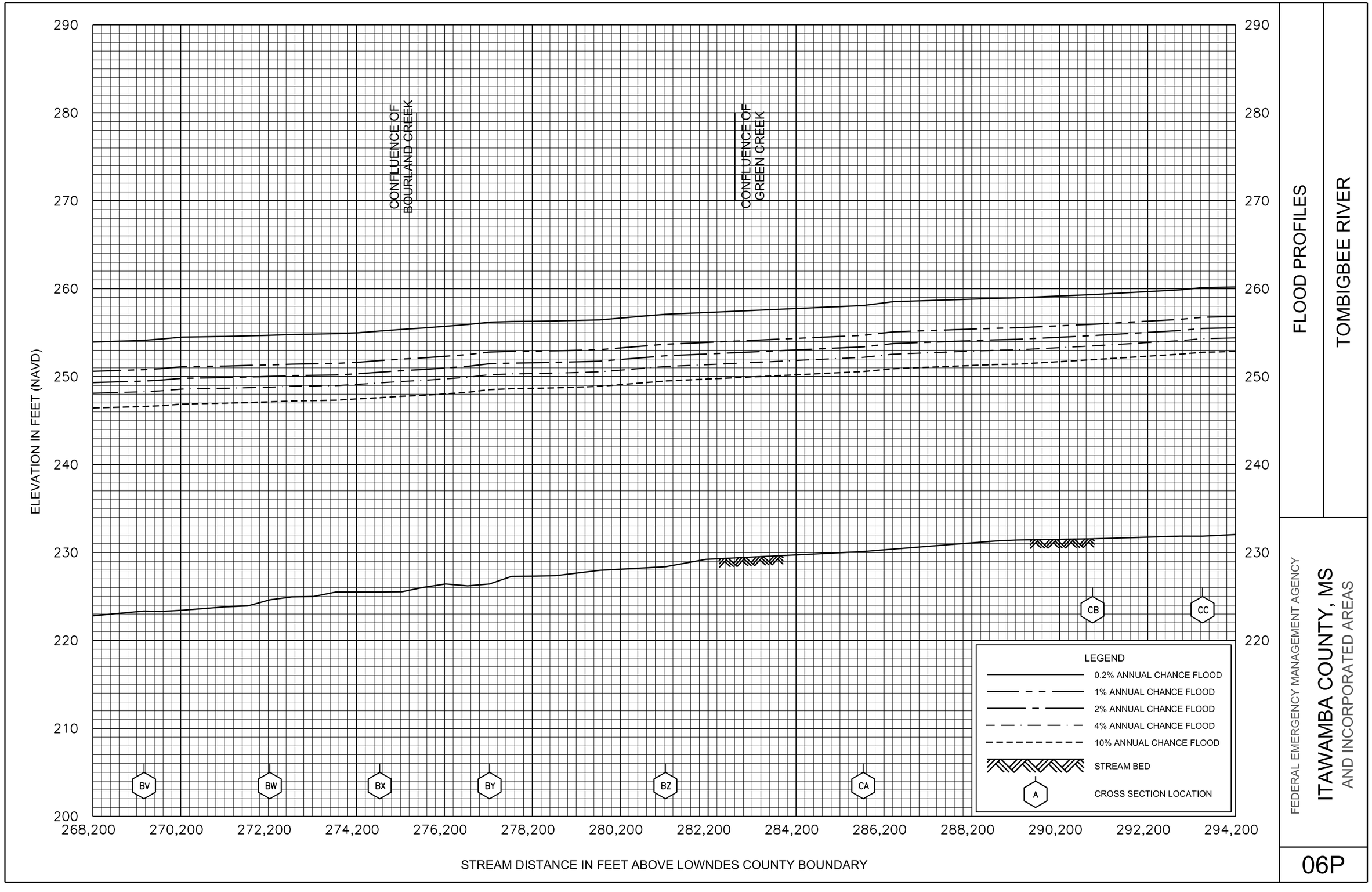
FLOOD PROFILES

TOMBIGBEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS

05P



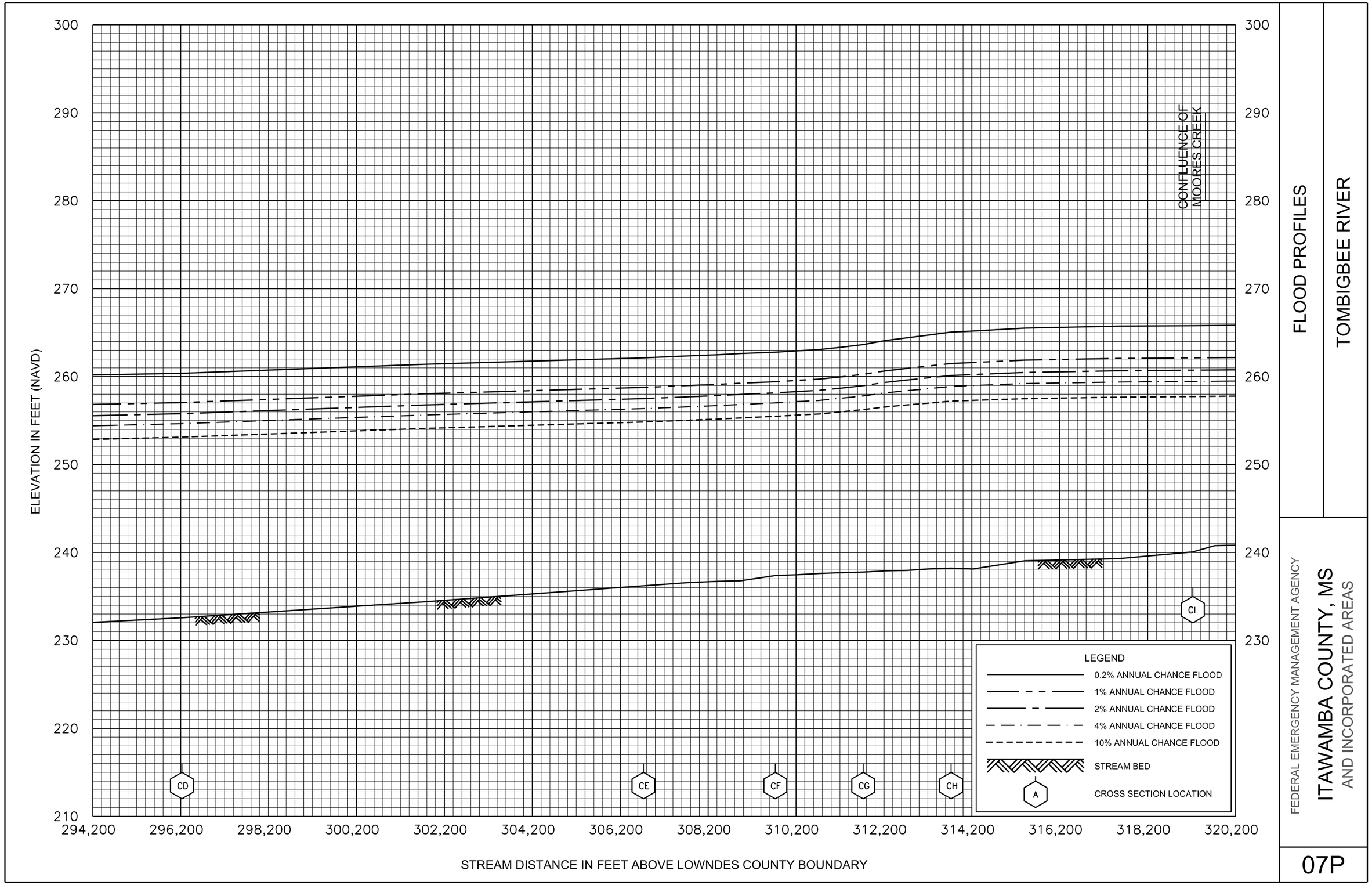
FLOOD PROFILES

TOMBIGBEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS

06P



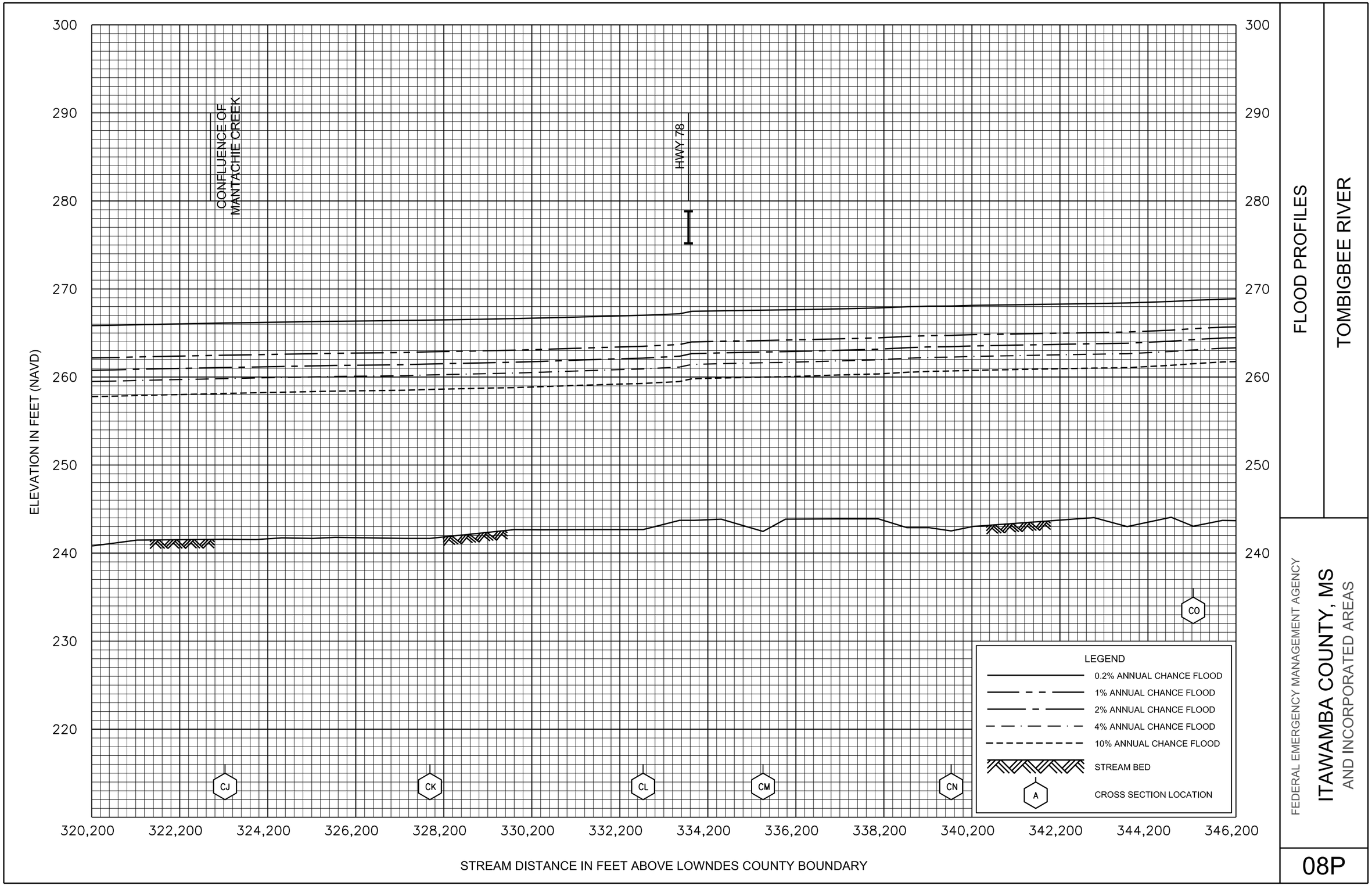
FLOOD PROFILES

TOMBIGBEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS

07P



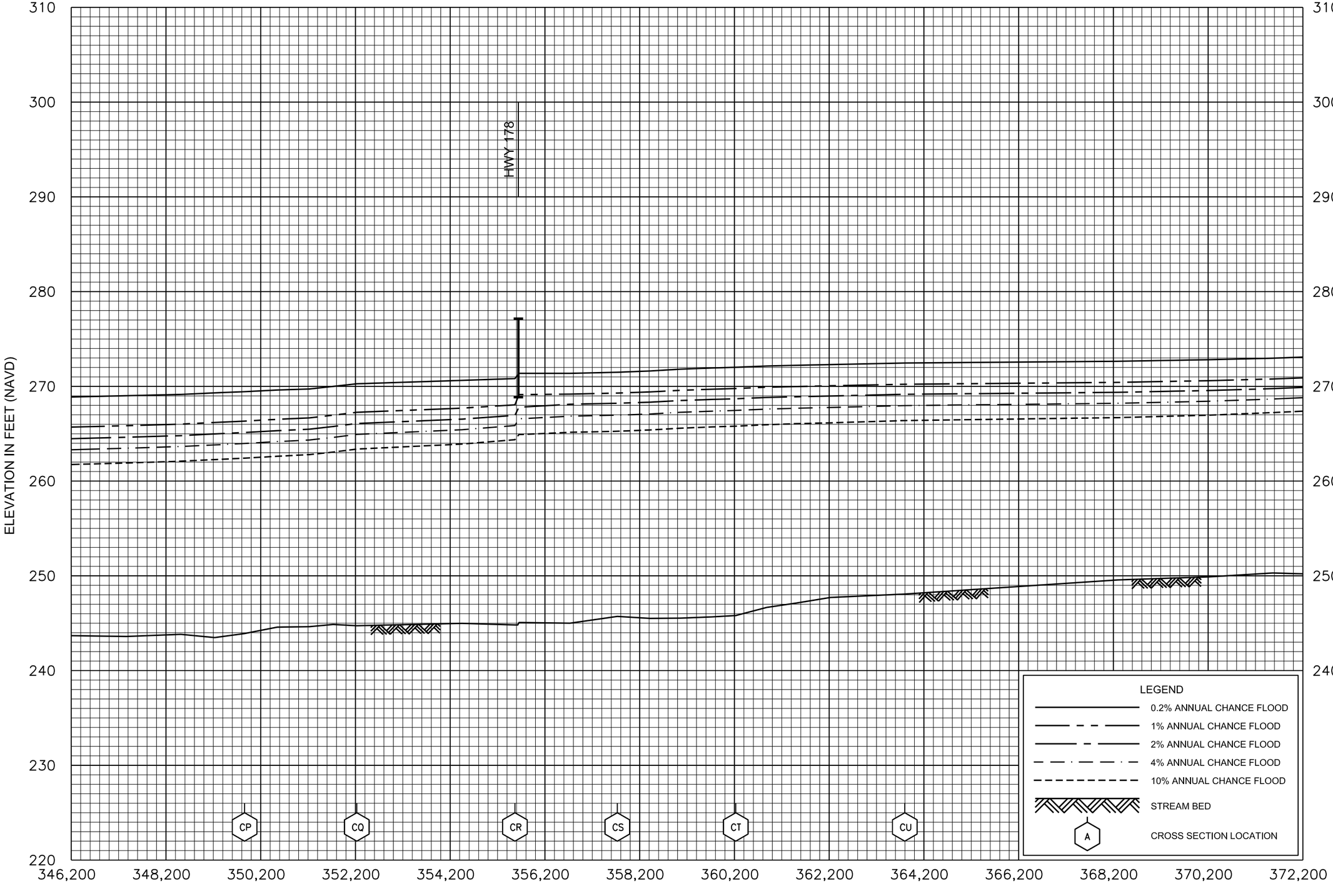
FLOOD PROFILES

TOMBIGBEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS

08P



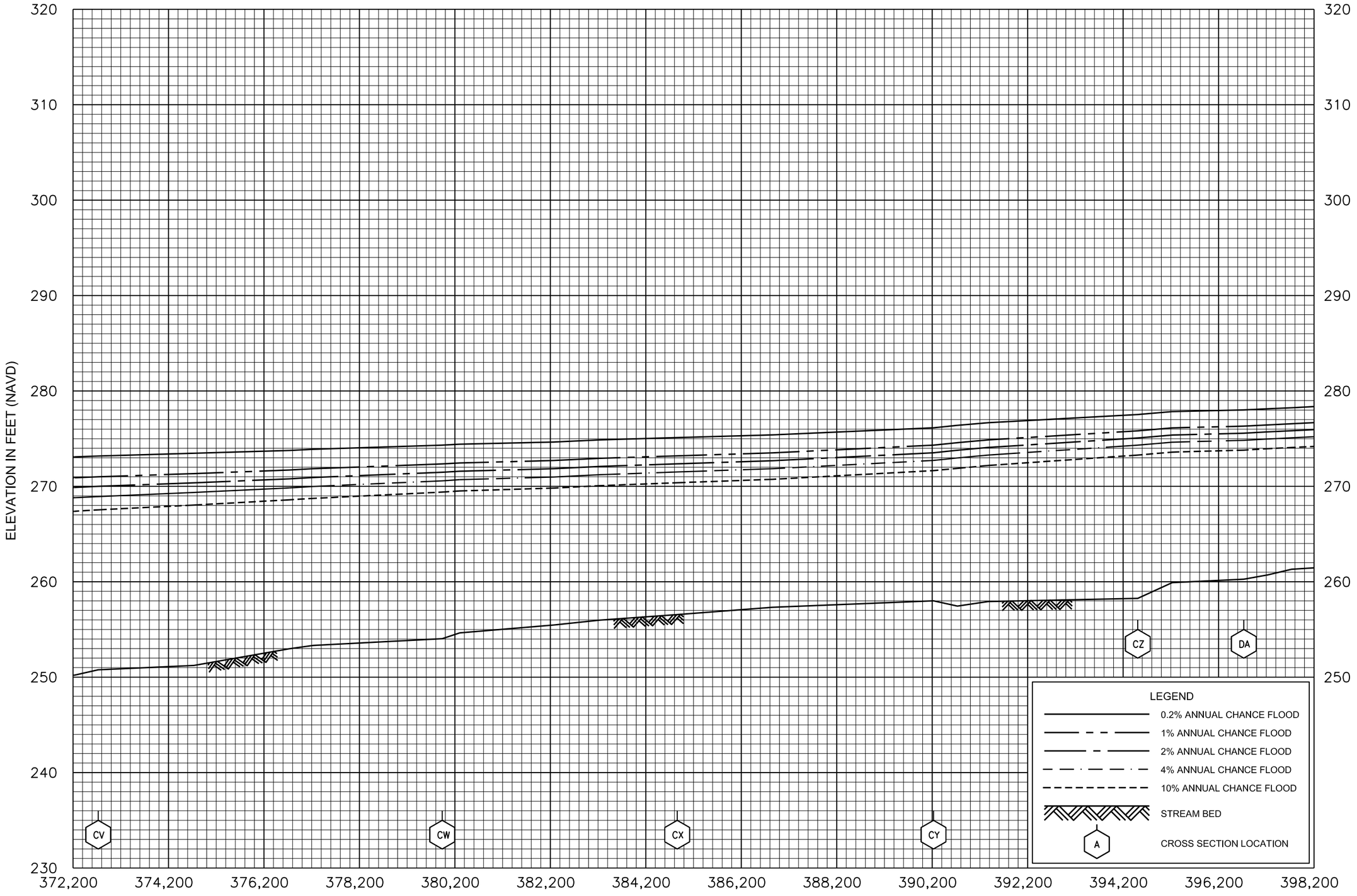
FLOOD PROFILES

TOMBIGBEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS

09P

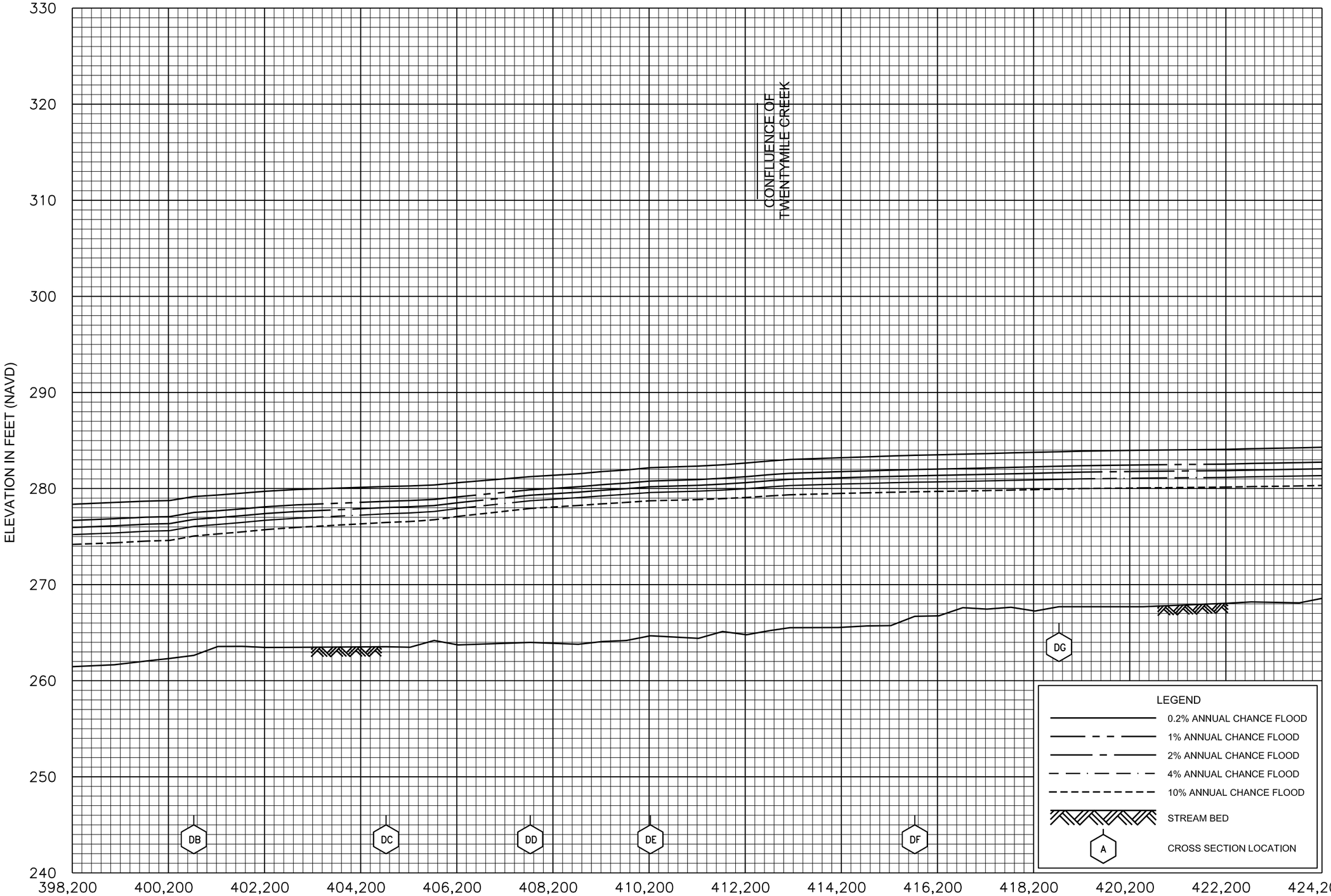


FLOOD PROFILES

TOMBIGBEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS



FLOOD PROFILES

TOMBIGBEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS

11P

ELEVATION IN FEET (NAVD)

330
320
310
300
290
280
270
260
250
240

424,200
426,200
428,200
430,200
432,200
434,200
436,200
438,200
440,200
442,200
444,200
446,200
448,200
450,200

STREAM DISTANCE IN FEET ABOVE LOWNDES COUNTY BOUNDARY

CONFLUENCE OF DONIVAN CREEK

DH
DI
DJ
DK
DL
DM
DN

LEGEND

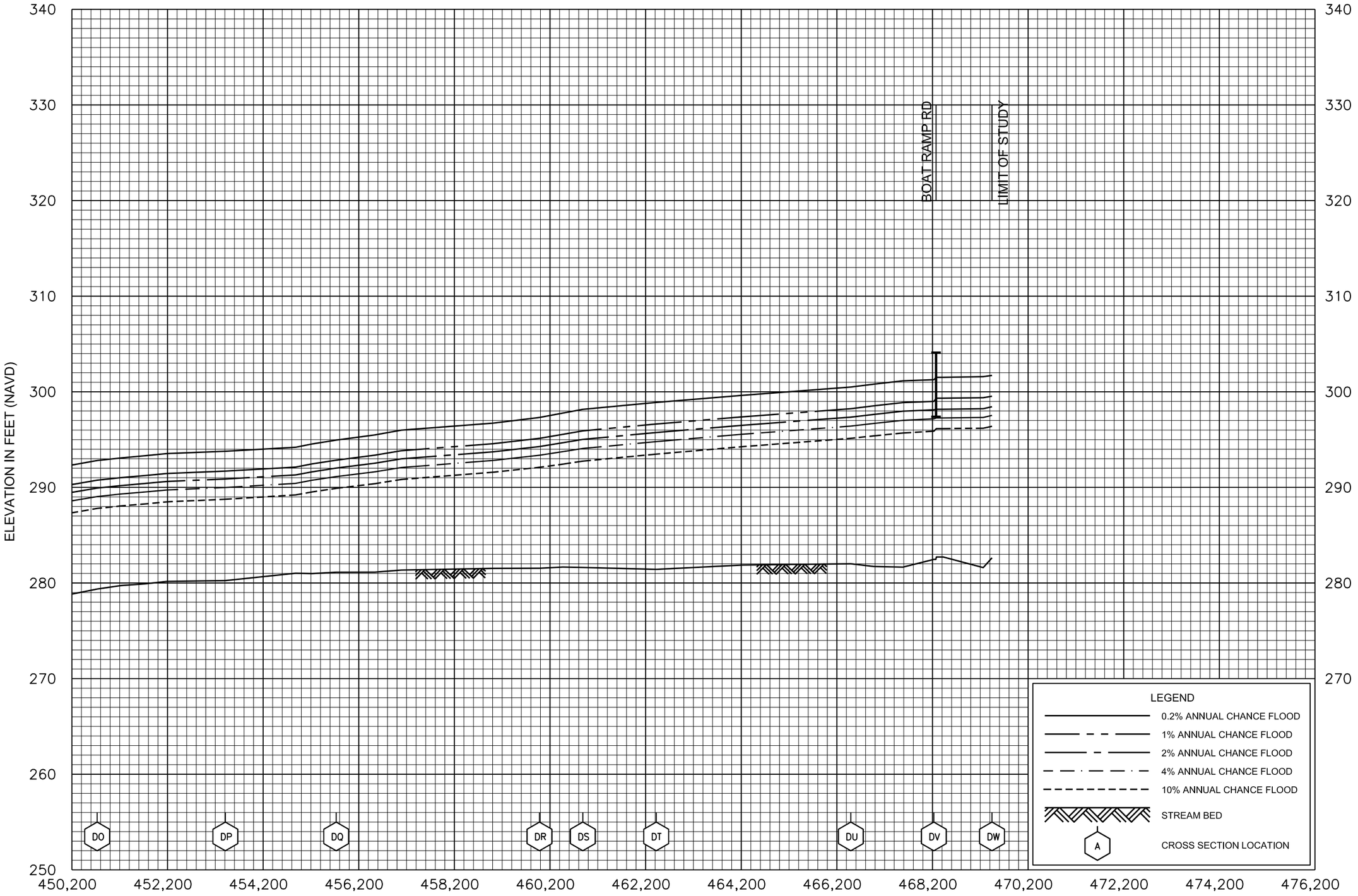
- 0.2% ANNUAL CHANCE FLOOD
- 1% ANNUAL CHANCE FLOOD
- 2% ANNUAL CHANCE FLOOD
- 4% ANNUAL CHANCE FLOOD
- 10% ANNUAL CHANCE FLOOD
- STREAM BED
- A — CROSS SECTION LOCATION

FLOOD PROFILES

TOMBIGBEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS



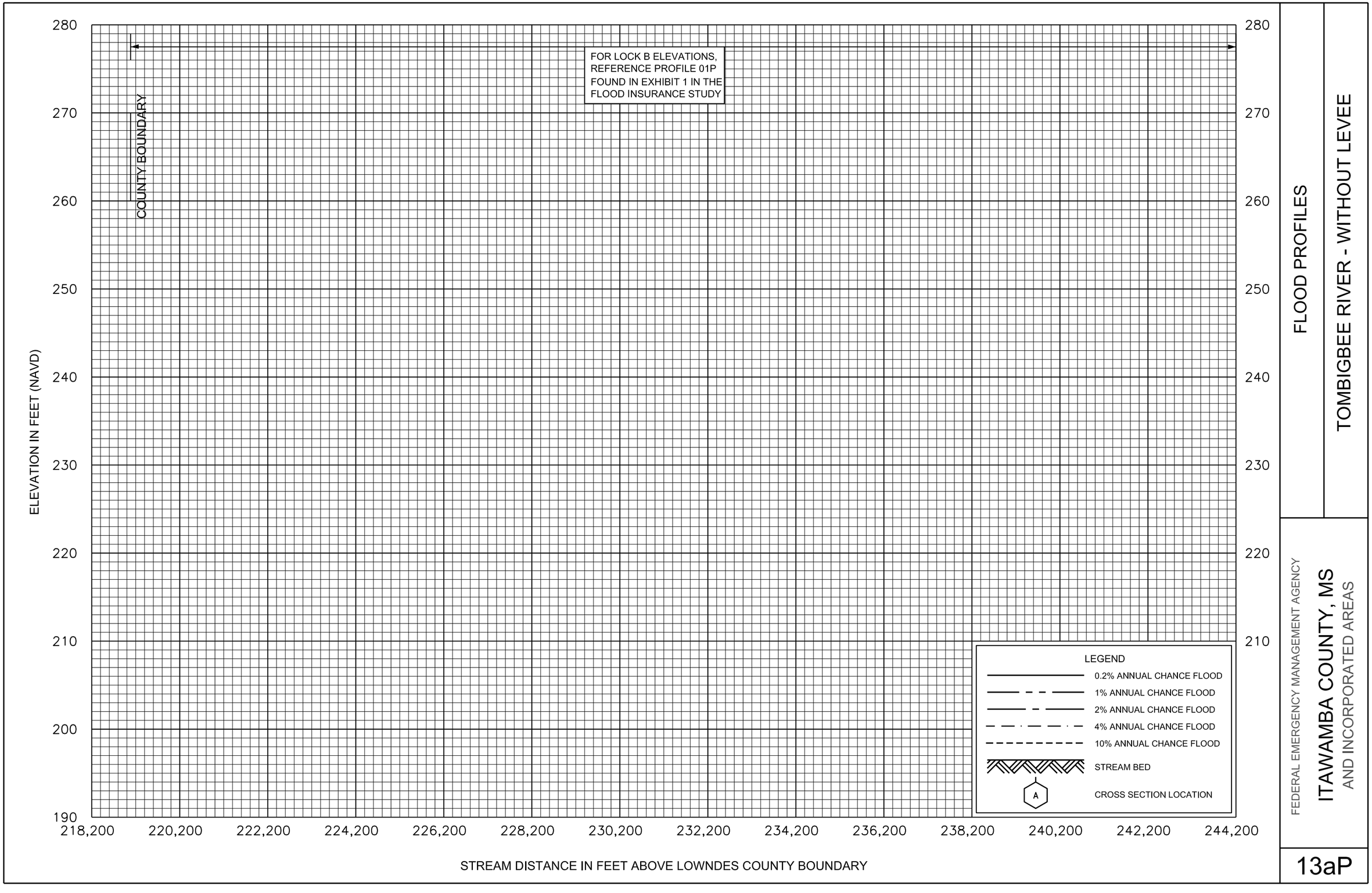
FLOOD PROFILES

TOMBIGBEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS

13P



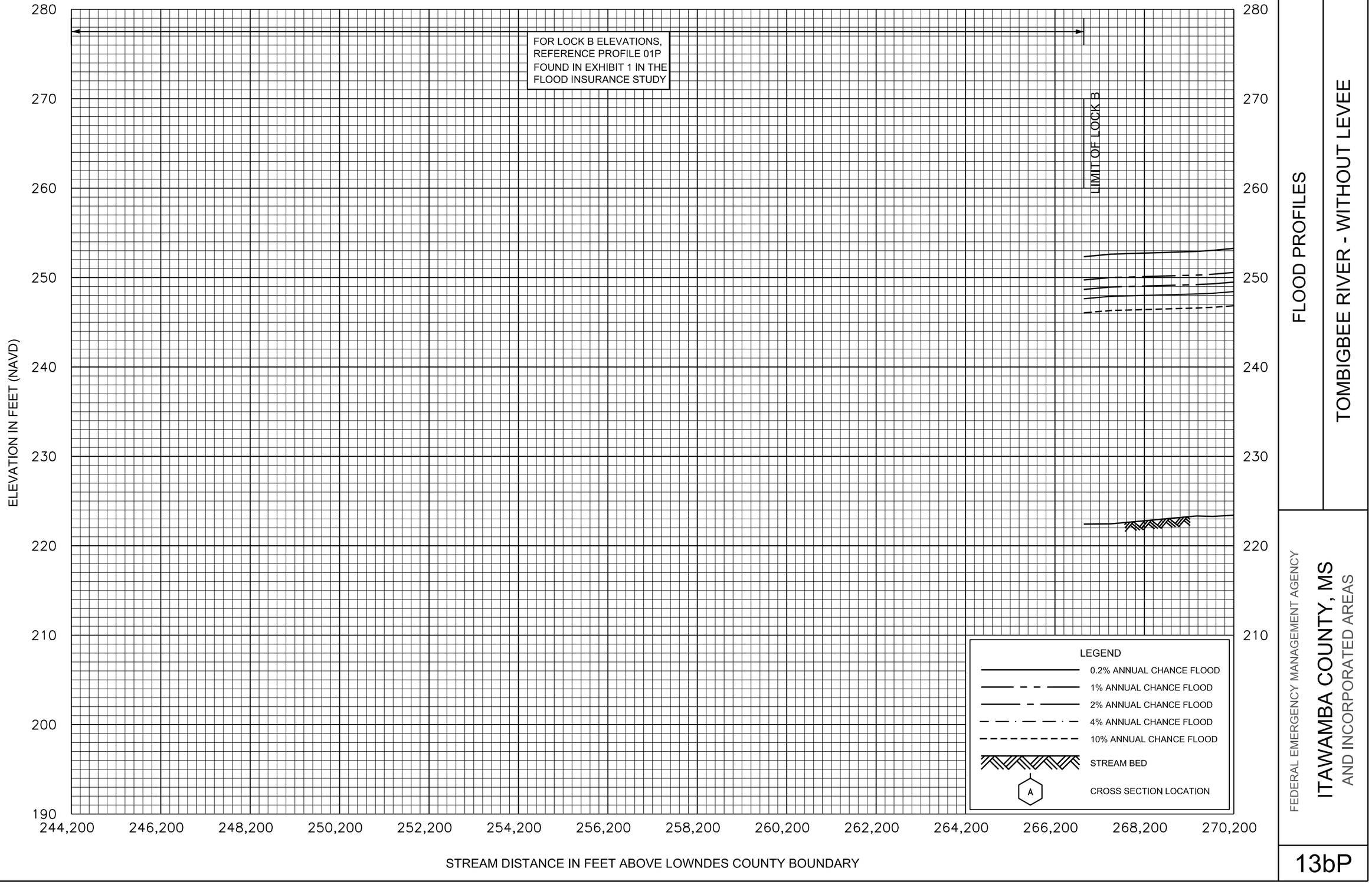
FLOOD PROFILES

TOMBIGBEE RIVER - WITHOUT LEVEE

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS

13aP



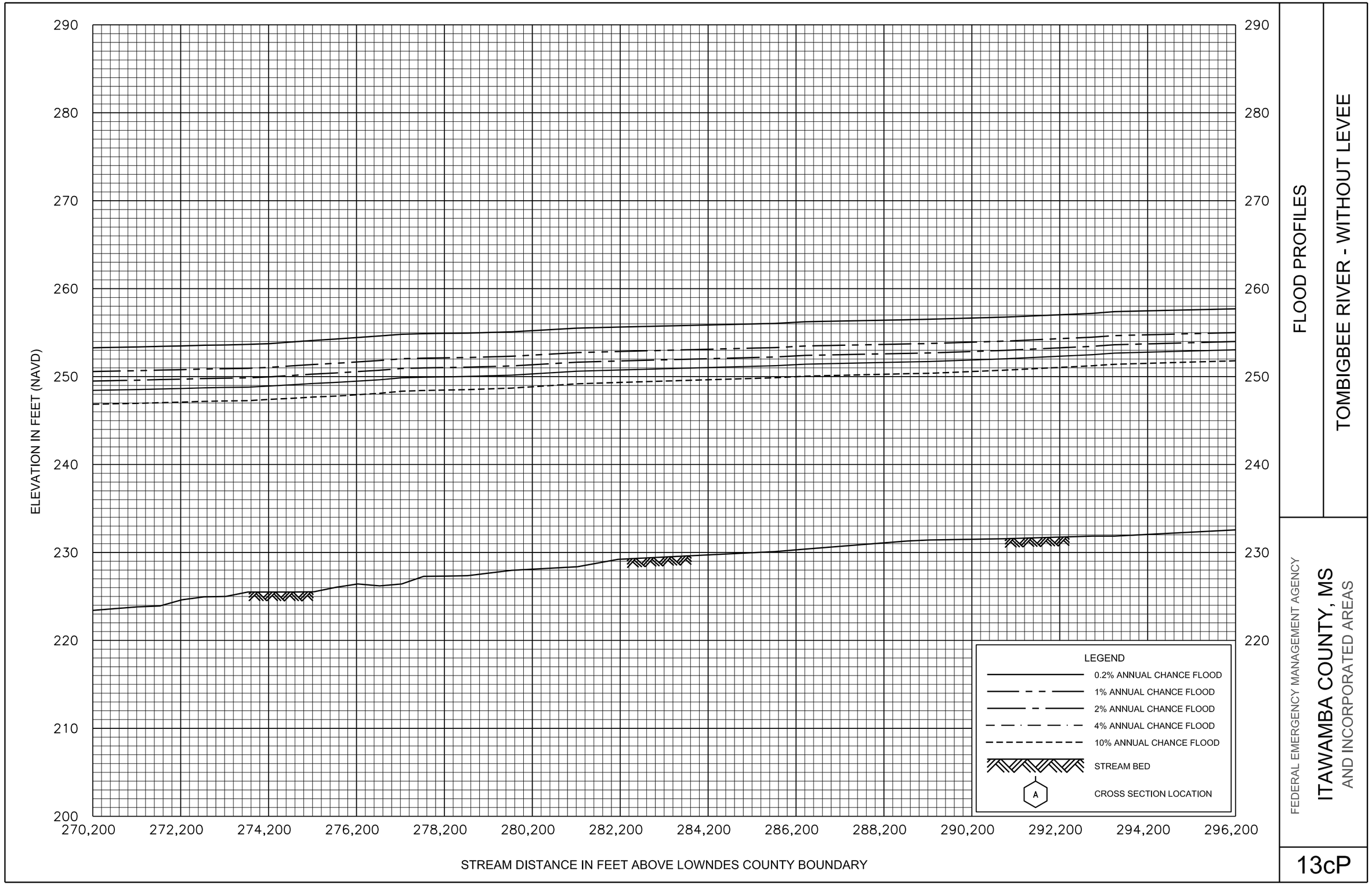
FLOOD PROFILES

TOMBIGBEE RIVER - WITHOUT LEVEE

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS

13bP



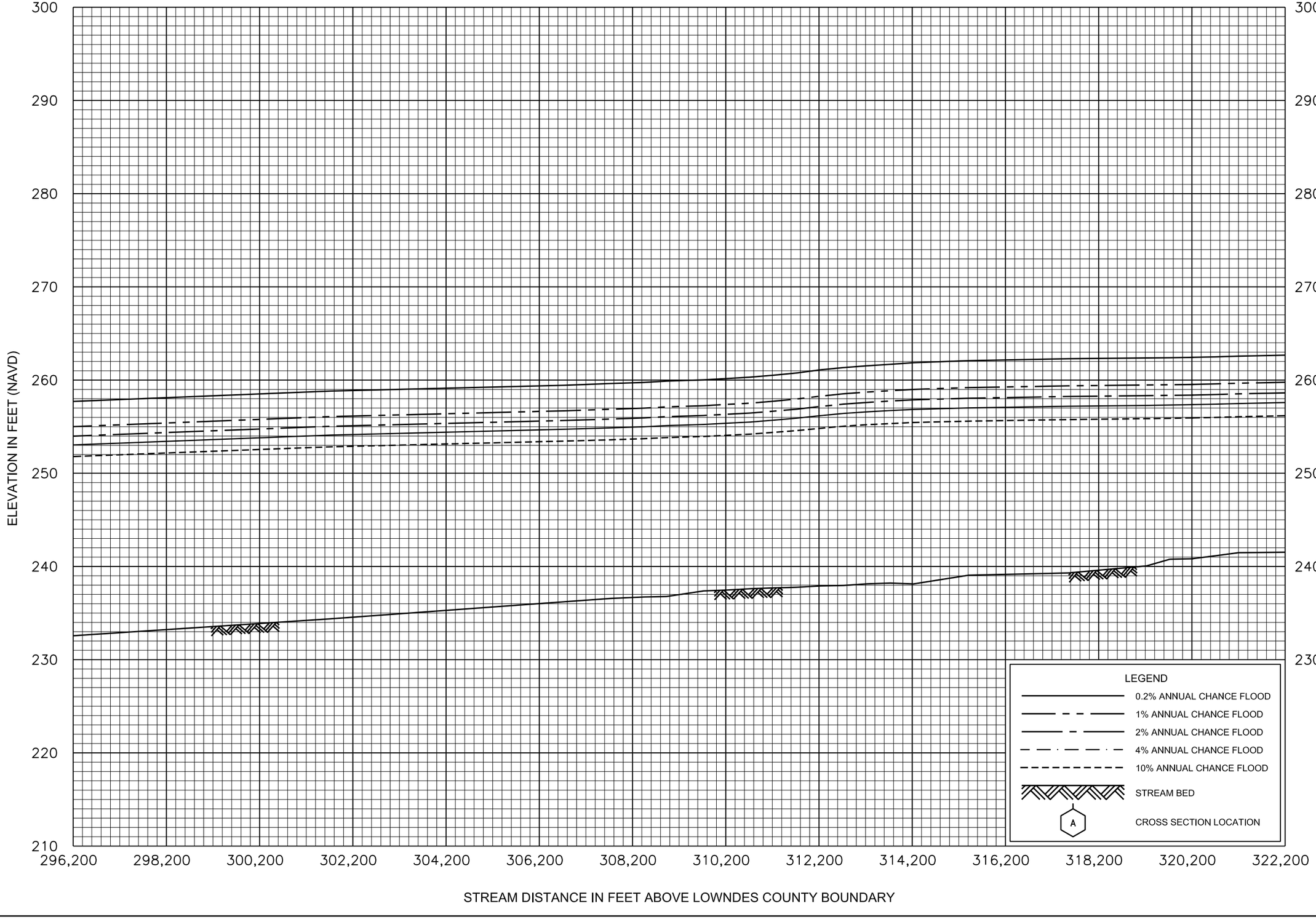
FLOOD PROFILES

TOMBIGBEE RIVER - WITHOUT LEVEE

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS

13cP



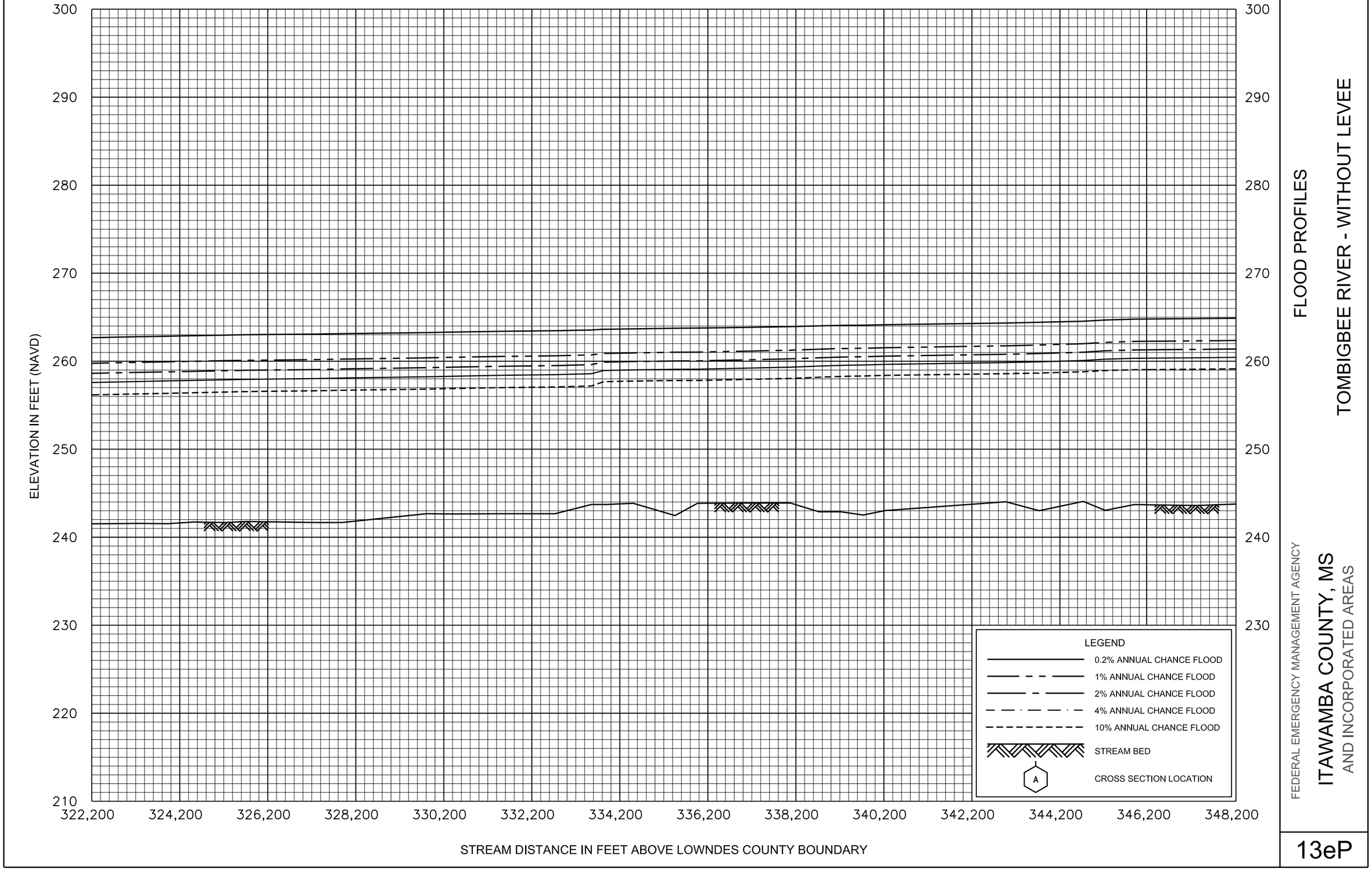
FLOOD PROFILES

TOMBIGBEE RIVER - WITHOUT LEVEE

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS

13dP



FLOOD PROFILES

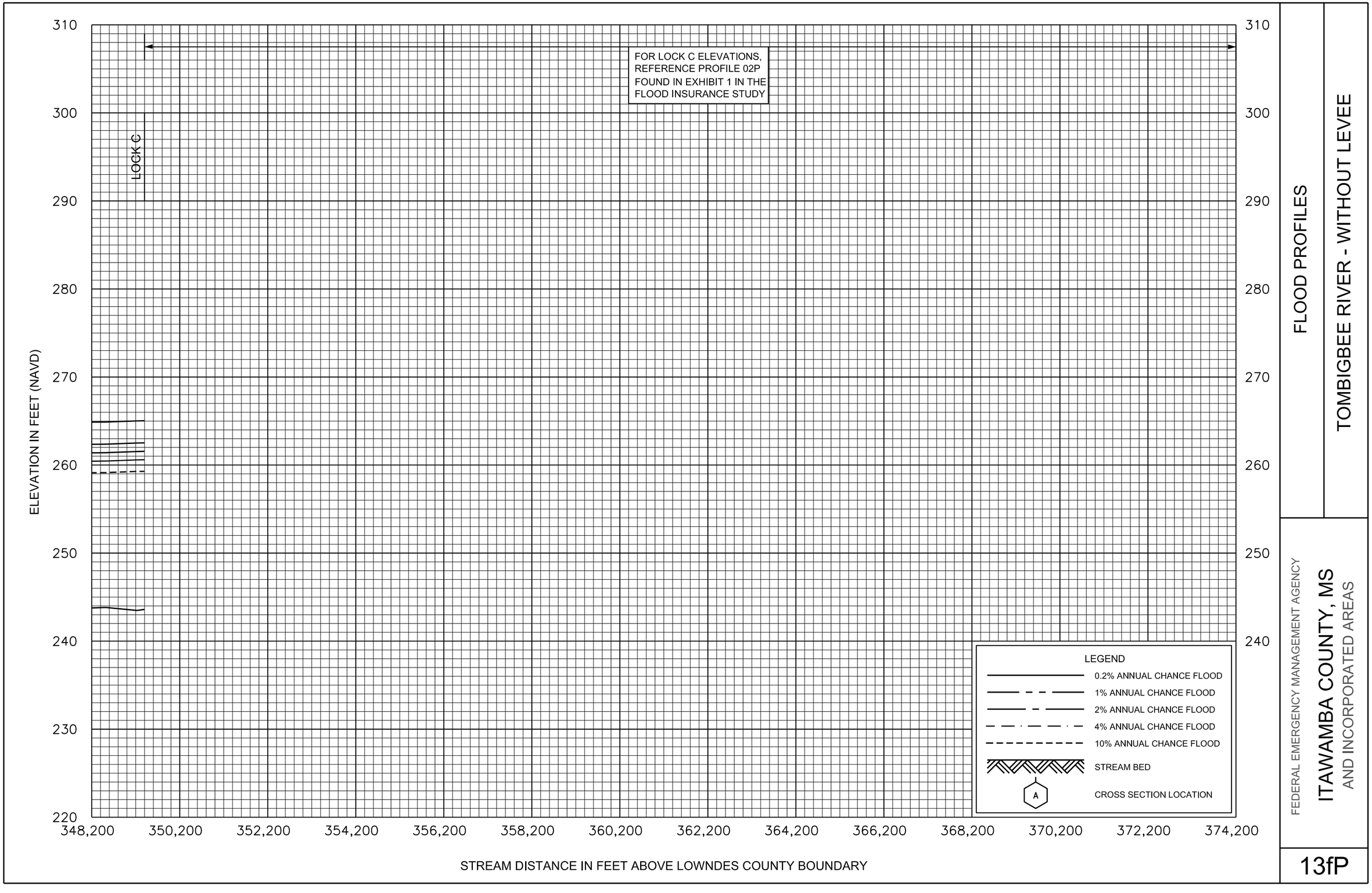
TOMBIGBEE RIVER - WITHOUT LEVEE

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS

AND INCORPORATED AREAS

13eP



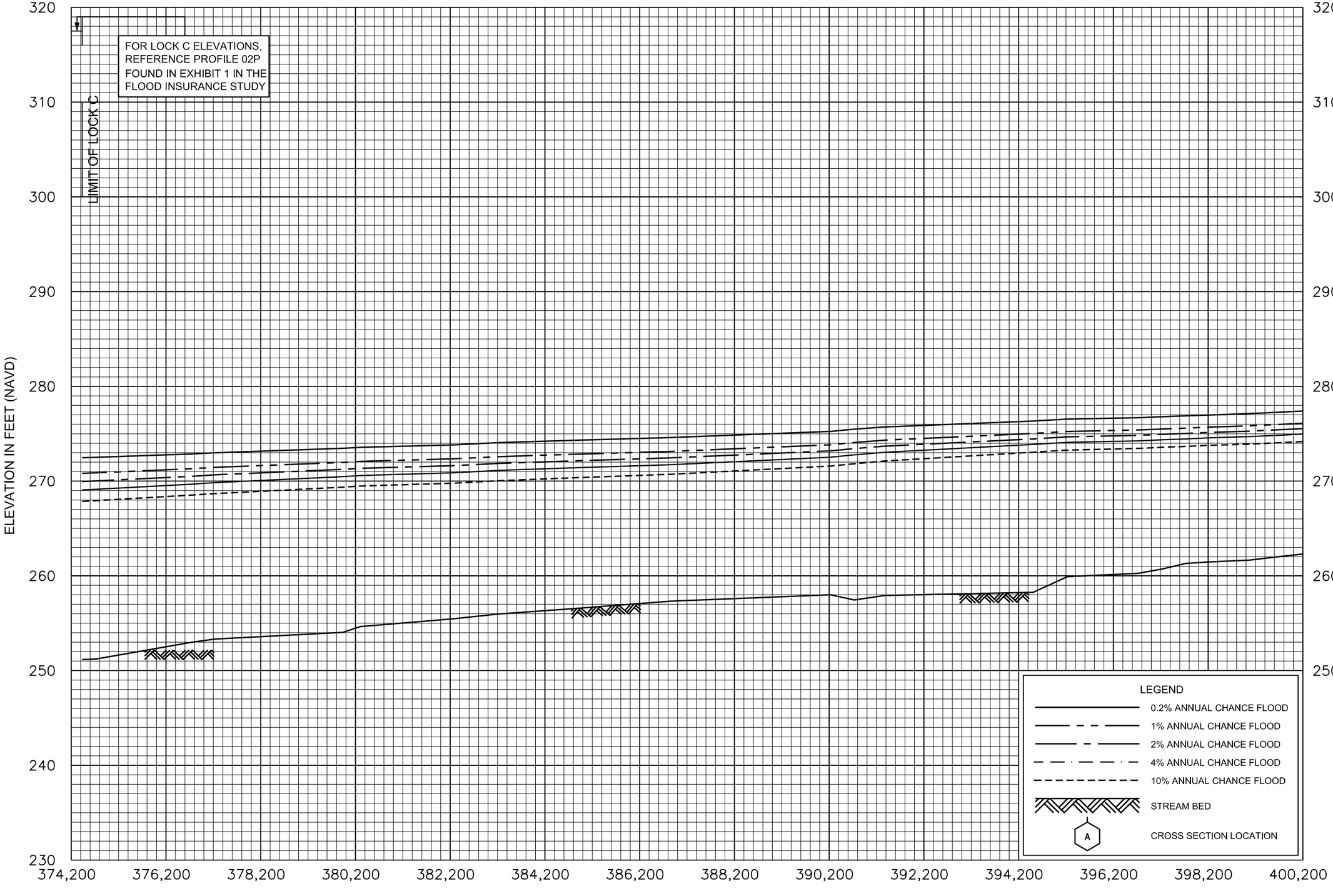
FLOOD PROFILES

TOMBIGBEE RIVER - WITHOUT LEVEE

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS

13fP



FLOOD PROFILES

TOMBIGBEE RIVER - WITHOUT LEVEE

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS

13gP

ELEVATION IN FEET (NAVD)

330
320
310
300
290
280
270
260
250
240

400,200 402,200 404,200 406,200 408,200 410,200 412,200 414,200 416,200 418,200 420,200 422,200 424,200 426,200

STREAM DISTANCE IN FEET ABOVE LOWNDES COUNTY BOUNDARY

FOR LOCK D ELEVATIONS, REFERENCE PROFILE 03P FOUND IN EXHIBIT 1 IN THE FLOOD INSURANCE STUDY

LOCK D

LEGEND

- 0.2% ANNUAL CHANCE FLOOD
- 1% ANNUAL CHANCE FLOOD
- 2% ANNUAL CHANCE FLOOD
- 4% ANNUAL CHANCE FLOOD
- 10% ANNUAL CHANCE FLOOD
- STREAM BED
- A — CROSS SECTION LOCATION

FLOOD PROFILES

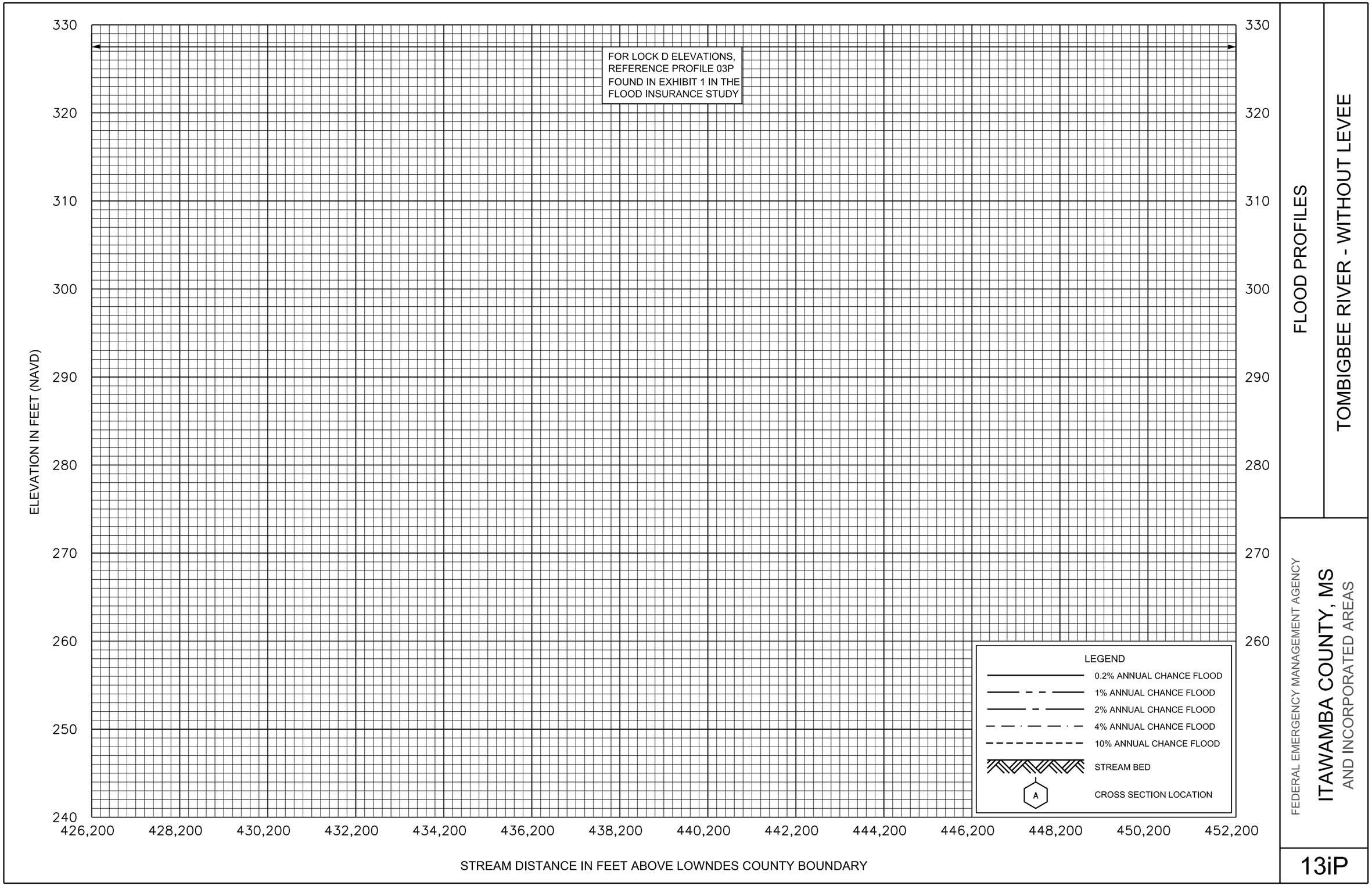
TOMBIGBEE RIVER - WITHOUT LEVEE

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS

AND INCORPORATED AREAS

13hP



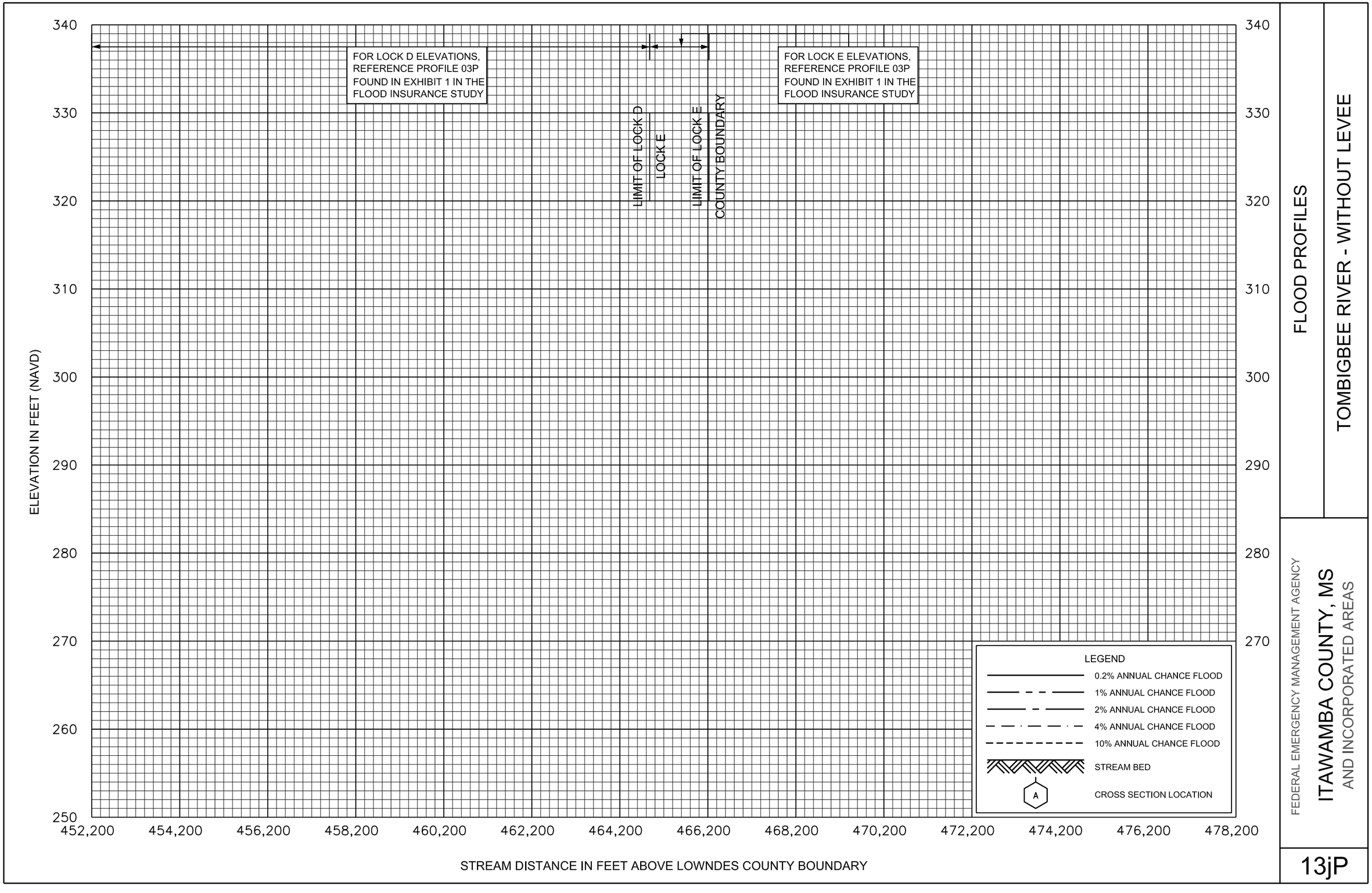
FLOOD PROFILES

TOMBIGBEE RIVER - WITHOUT LEVEE

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS

13iP



FLOOD PROFILES

TOMBIGBEE RIVER - WITHOUT LEVEE

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS

13jP

NOTE:
FLOODING CONTROLLED
BY TOMBIGBEE RIVER

NOTE:
HEC-2 DATA
NOT AVAILABLE

CONFLUENCE WITH
TOMBIGBEE RIVER

STATE HIGHWAY 371

ELEVATION IN FEET (NAVD)

320
310
300
290
280
270
260
250
240
230

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

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH TOMBIGBEE RIVER

A
B
C
D
E

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

TWENTYMILE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS

ELEVATION IN FEET (NAVD)

320
310
300
290
280
270
260
250
240

24,000 26,000 28,000 30,000 32,000 34,000 36,000 38,000 40,000 42,000 44,000 46,000 48,000

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH TOMBIGBEE RIVER

NATCHEZ TRACE PKWY
LIMIT OF DETAILED STUDY

F G H I A

LEGEND

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

*DATA NOT AVAILABLE

FLOOD PROFILES

TWENTYMILE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ITAWAMBA COUNTY, MS
AND INCORPORATED AREAS