

FLOOD INSURANCE STUDY



Noxubee County

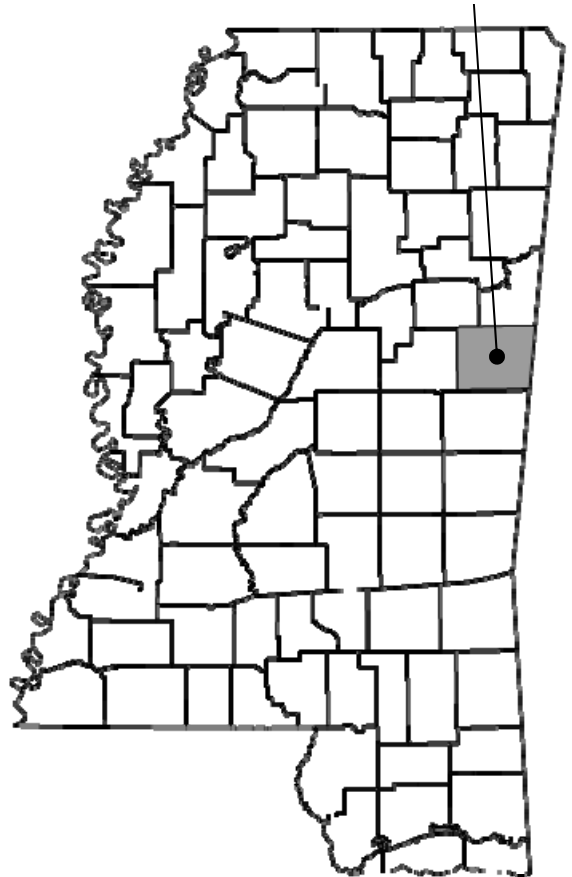
NOXUBEE COUNTY, MISSISSIPPI AND INCORPORATED AREAS

**COMMUNITY
NAME**

BROOKSVILLE, TOWN OF
MACON, CITY OF
NOXUBEE COUNTY
(UNINCORPORATED AREAS)
SHUQUALAK, TOWN OF

**COMMUNITY
NUMBER**

280312
280123
280305
280324



PRELIMINARY
OCT 30 2009

EFFECTIVE: Month, Day, 2009



Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
28103CV000A

NOTICE TO FLOOD INSURANCE STUDY USERS

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

Selected Flood Insurance Rate Map panels for the 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:

<u>Old Zone</u>	<u>New Zone</u>
A1 through A30	AE
V1 through V30	VE
B	X
C	X

This preliminary revised 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.

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

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**FLOOD INSURANCE STUDY
NOXUBEE COUNTY 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 Noxubee County, including the City of Macon; the Towns of Brooksville and Shuqualak; and the unincorporated areas of Noxubee County (referred to collectively herein as Noxubee 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 FIS report 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 Noxubee County in a countywide format.

The new hydrologic and hydraulic analyses were prepared by AECOM Water and the State of Mississippi for the Federal Emergency Management Agency (FEMA), under Contract No. EMA-2007-CA-5774. This study was completed in ---2009.

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

The digital FIRM was produced using the Mississippi State Plane Coordinate System, East Zone, FIPZONE 2301. The horizontal datum was the North American Datum of 1983, GRS80 spheroid. Distance units were measured in U.S. feet.

1.3 Coordination

The initial Consultation Coordination Officer (CCO) meeting was held on April 15, 2008, and attended by representatives of FEMA, the impacted communities, and the study contractor to explain the nature and purpose of a FIS, and to identify the streams to be studied enhanced approximate and approximate method. A final meeting, the Preliminary DFIRM Community Coordination (PDCC) was held on _____ to review the results of this study.

For this countywide FIS, the Project Scoping Meeting was held on April 15, 2008 in Noxubee County, MS. Attendees for these included representatives from the Mississippi Department of Environmental Quality, Mississippi Emergency Management Agency, FEMA National Service Provider, Noxubee County, and Study Contractors. Coordination with county officials and Federal, State, and regional agencies produced a variety of information pertaining to floodplain regulations, available a community maps, flood history and the hydrologic data.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS report covers the geographic area of Noxubee County, Mississippi, including the incorporated communities listed in Section 1.1.

The detailed data was used to compile the Floodway Data Table and Profile for Tombigbee River in Noxubee County, Mississippi. Users should refer to Lowndes County, Mississippi FIS Report for the detail analysis of the Tombigbee River (FEMA, XXXX).

The areas studied by enhanced approximate methods were selected with priority given to all known flood hazards and areas of projected development or proposed construction through Macon, Mississippi.

An enhanced approximate study was performed on a section of the Noxubee River near Macon, Mississippi. The study ranged from approximately 1.7 miles downstream of Highway 45 to approximately 1.6 miles upstream of Kansas City Southern Railroad.

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, Noxubee County, and the study contractors.

2.2 Community Description

Noxubee County is in the eastern part of Mississippi and is bordered by Lowndes and Oktibbeha Counties on the north; Winston County on the west; Kemper County on the south and the state of Alabama on the east. Noxubee County is served by U.S. Highway 45, Mississippi Highways 14, 21 and 39; and by the Kansas City Southern Railroad. The census 2008 population was estimated to be approximately 11,830 (U.S. Census Bureau, 2009).

The climate is influenced by the County's sub-tropical latitude, the extensive land mass on the north and the Gulf of Mexico on the south. Average annual rainfall is 56 inches and the annual mean temperature is 62 degrees Fahrenheit (NOAA, 2009).

2.3 Principal Flood Problems

Intense seasonal rains and occasional tropical storms or hurricanes are the major cause of floods on larger streams in Mississippi. Floods on smaller streams are usually the result of convectional thunderstorms, which most often occur in summer.

The USGS operates two stream gages on the Noxubee River-USGS within Noxubee County:

gage site no. 02447500 on the Noxubee River near Brooksville and USGS gage site no. 02448000 on the Noxubee River at Macon, MS. The USGS stream gage site no. 02447500 located approximate 250 feet downstream of Lynne Creek Road has been operated on the Noxubee River since July 1940. The USGS stream gage site no. 02448000 has been operated on Noxubee River at the Jefferson Street Bridge since August 1927. The highest flood of record at this site, which occurred April 13 1979, crested at an elevation of 181.08 feet North America Vertical Datum of 1988 (NAVD) and had an estimated peak discharge of 125,000 cubic feet per second.

2.4 Flood Protection Measures

Flood protection measures are not known to exist within the study area.

3.0 **ENGINEERING METHODS**

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

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish peak discharge-frequency relationships for each flooding source studied by detailed methods affecting the community.

The hydrologic analysis of Tombigbee River is presented in the Lowndes County, Mississippi FIS report (FEMA, XXXX). The magnitude of the 1-percent-annual chance flood on Noxubee River at Jefferson Street was estimated from records of annual peak flow collected at the USGS gaging station at that site. The annual peaks were log-transformed and fitted to a log-Pearson Type II statistical distribution as outlined in Bulletin No. 17B (U.S. Department of the Interior, 1982). Flood-frequency results obtained using the period of record (1927-present) were compared with basin characteristics and Rural East Region USGS regression equations for Mississippi as described in the USGS Water-Resources Investigations report 94-4002 (USGS, 1993).

Peak discharge-drainage area relationships for the 1-percent-chance-annual flood for each flooding source studied by enhanced approximated method in the county are shown in Table 1, Summary of Discharges.

Table 1. Summary of Discharges

<u>Flooding Source and Location</u>	<u>Drainage Area (sq. miles)</u>	<u>Peak Discharge (CFS) 1-Percent Annual-Chance Discharge</u>
NOXUBEE RIVER		
Just downstream of the Jefferson Street.	768	68,210
TOMBIGBEE RIVER		
Mississippi/Alabama Stateline.	*	278,700
* Prorated by drainage area ratio		

Discharge for the 1-percent-annual-chance recurrence interval for approximated study streams in Noxubee County were determined using the Rural-East Region USGS regression equations for Mississippi as described in the USGS Water-Resource Investigations report 94-4002 (USGS, 1993).

Drainage areas along 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.

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 [Flood Insurance Rate Map (FIRM)] represent rounded whole-foot elevations and may not exactly reflect the elevations shown on the Flood Profiles or in the Floodway Data 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.

Structural geometries were obtained by field survey on Noxubee River. Analysis for the Tombigbee River can be found in Lowndes County, Mississippi FIS report (FEMA, XXXX).

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles and on the Flood Insurance Rate Map. (Exhibits 1& 2)

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.

Water-surface profiles were computed for enhanced approximate and approximate study streams through the use of the U.S. Army Corps of Engineers HEC-RAS version 3.1.2 computer program (USACE, 2003). Water surface profiles were produced for the 1-percent-

annual-chance storms for enhanced approximate and approximate studies.

The Roughness coefficients (Manning's "n") values used in the hydraulic analyses for the Noxubee River and Tombigbee River were based on engineering judgment and field observation of the channel and floodplain areas. The average "n" values were, 0.04 for the channel and 0.06 to 0.15 for the overbank the Noxubee River. The average Manning's "n" values for the study done on Tombigbee River ranged from 0.05 to 0.14 for the overbanks and from 0.030 to 0.035 for the channels.

The enhanced approximate and approximate study methodology used Watershed Information SystEm (WISE) (Watershed Concepts, 2008) 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.

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.

All qualifying bench marks within a given jurisdiction that are cataloged by the National Geodetic Survey (NGS) and entered into the National Spatial Reference System (SRS) 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.

Bench Marks 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 monument 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 bench marks, the FIRM may also show vertical control monuments 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 bench marks shown on the FIRM for this jurisdiction, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their Web site at www.ngs.noaa.gov.

It is important to note that 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 this FIS 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 (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 Noxubee County are referenced to NAVD88. Ground, structure, and flood elevations may be compared and/or referenced to NGVD29, add 0.11 feet to the NAVD88 elevation. The 0.11 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 more information on NAVD 88, see *Converting the National Flood Insurance Program to the North American Vertical Datum of 1988*, FEMA Publication FI-20/June 1992, 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. To assist in this endeavor, 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 and enhanced approximate methods, the 1-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 5-foot interval topographic mapping developed from USGS 10 meter digital elevation models (DEM) (USGS, 1984).

For each streams studied by approximate method, the 1-percent-annual-chance floodplain boundaries have been delineated using interpolation of 5-foot interval topographic mapping developed from USGS 10 meter digital elevation models (DEM) (USGS, 1984).

The 1- and 0.2-percent-annual-chance floodplain boundaries are shown on the FIRM. 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 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 approximate methods, only the 1-percent-annual-chance floodplain boundary is shown on the FIRM.

Approximate 1-percent-annual-chance floodplain boundaries in some portions of the study area were taken directly from the Flood Hazard Boundary Map for the City of Macon; and the unincorporated areas of Noxubee County (U.S. Department of HUD, 1987).

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 base flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways presented in this study were computed for certain stream segments on the basis of equal-conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations are tabulated for selected cross sections (see Table 2, Floodway Data). The computed floodways are shown on the FIRM (Exhibit 2). In cases where the floodway and 1-percent-annual-chance floodplain boundaries are either close together or collinear, only the floodway boundary is shown.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
TOMBIGBEE RIVER A	0	13,275 ²	218,032	1.3	155.0	155.0	155.9	0.9

¹Feet above Noxubee/Lowndes county boundary

² Width extends beyond county boundary

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

**NOXUBEE COUNTY, MS
AND INCORPORATED AREAS**

FLOODWAY DATA

TOMBIGBEE RIVER

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 (WSEL) of the base flood more than 1 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 1.

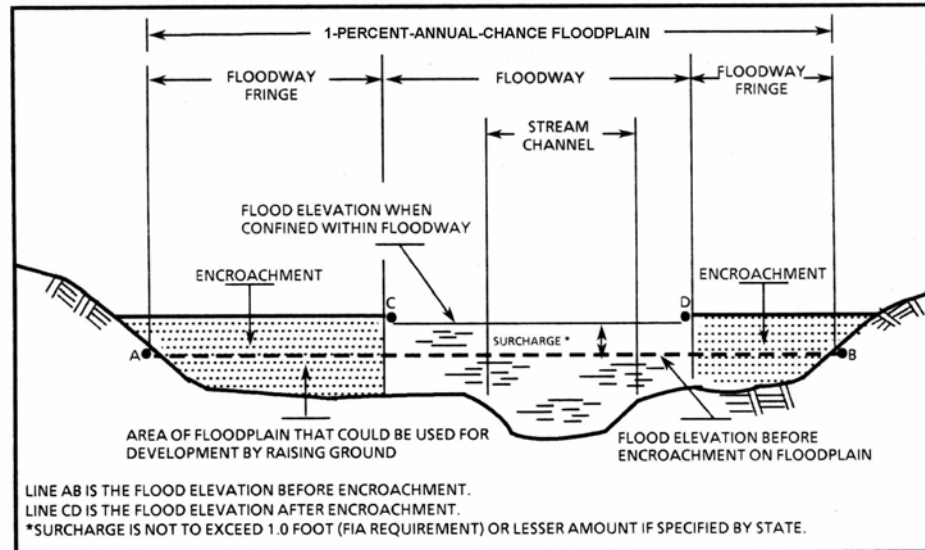


Figure 1. Floodway Schematic

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

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 report 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 base flood by levees. No BFEs or depths are shown within this zone.

6.0 FLOOD INSURANCE RATE MAP

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

For flood insurance applications, the map designates flood insurance rate 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 zones and BFEs in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

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

The countywide FIRM presents flooding information for the entire geographic area of Noxubee 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 are presented in Table 2, "Community Map History."

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 base flood by levees. No BFEs or depths are shown within this zone.

7.0 OTHER STUDIES

No previous studies have been prepared for the Towns of Brooksville and Shuqualak, the City of Macon, or Noxubee County.

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

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
Brooksville, Town of	---	none	---	---
Macon, City of	January 31, 1975	none	January 1, 1986	---
Noxubee County (Unincorporated Areas)	December 23, 1977	none	July 1, 1987	---
Shuqualak, Town of	December 8, 1978	none	---	---

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

**NOXUBEE COUNTY, MS
AND INCORPORATED AREAS**

COMMUNITY MAP HISTORY

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.

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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National Weather Service Forecast Office, Jackson, MS Climate Data, <http://www.srh.noaa.gov/jan/climate.php>. Accessed June 4, 2009.

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U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Noxubee County, Unincorporated Areas, Mississippi, October 1987.

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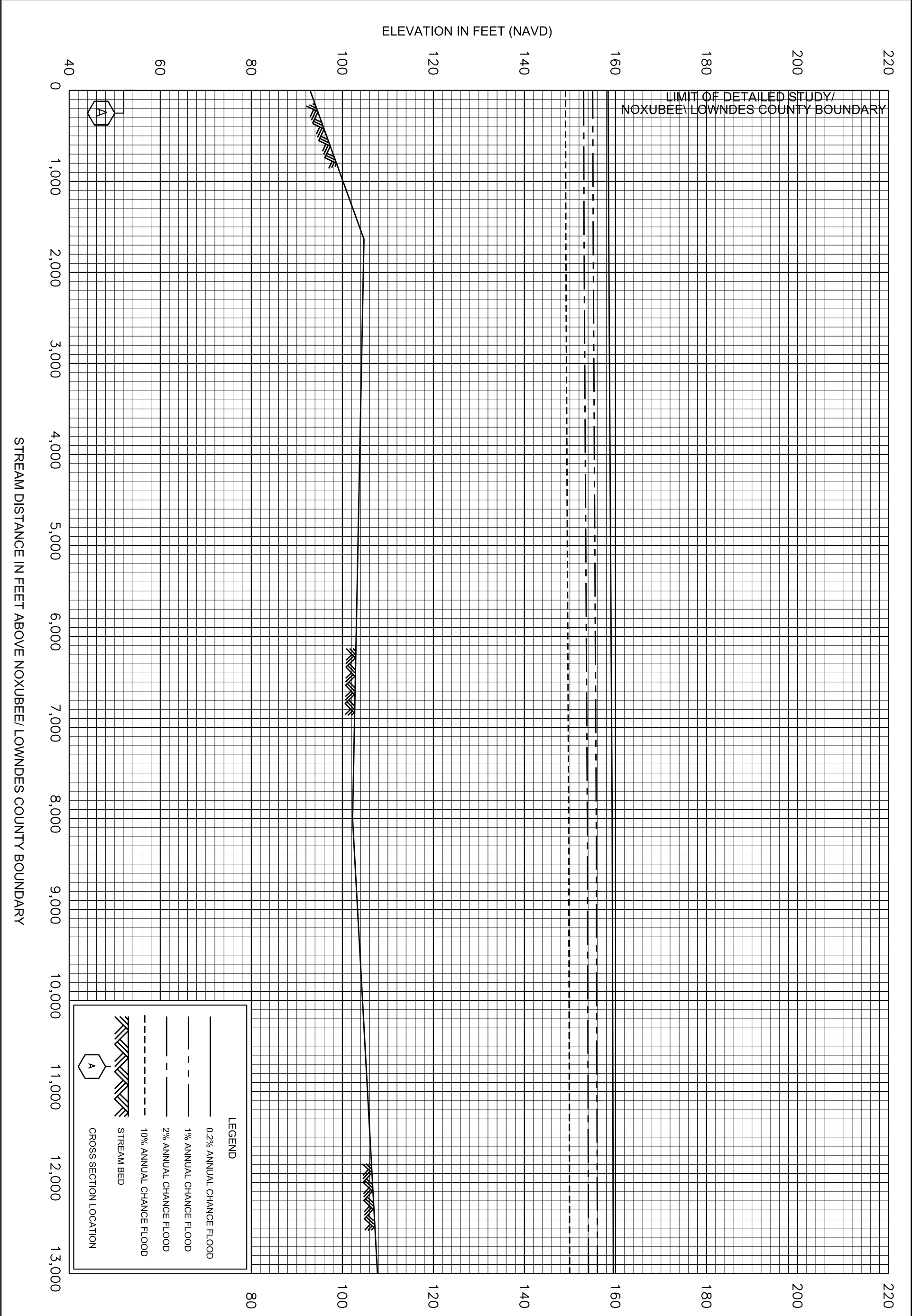
U.S. Department of the Interior, Geological Survey, Interagency Advisory Committee on Water Data, Office of Water Data Coordination, Hydrology Subcommittee, Bulletin No. 17B, Guidelines for Determining Flood Flow Frequency, September 1981, revised March 1982.

U.S. Geological Survey, 7.5 Minute Series Topographic Maps, Scale 1:24000, Contour Interval 20 Feet: Macon, Mississippi, 1986; and Noxubee, Mississippi, 1984.

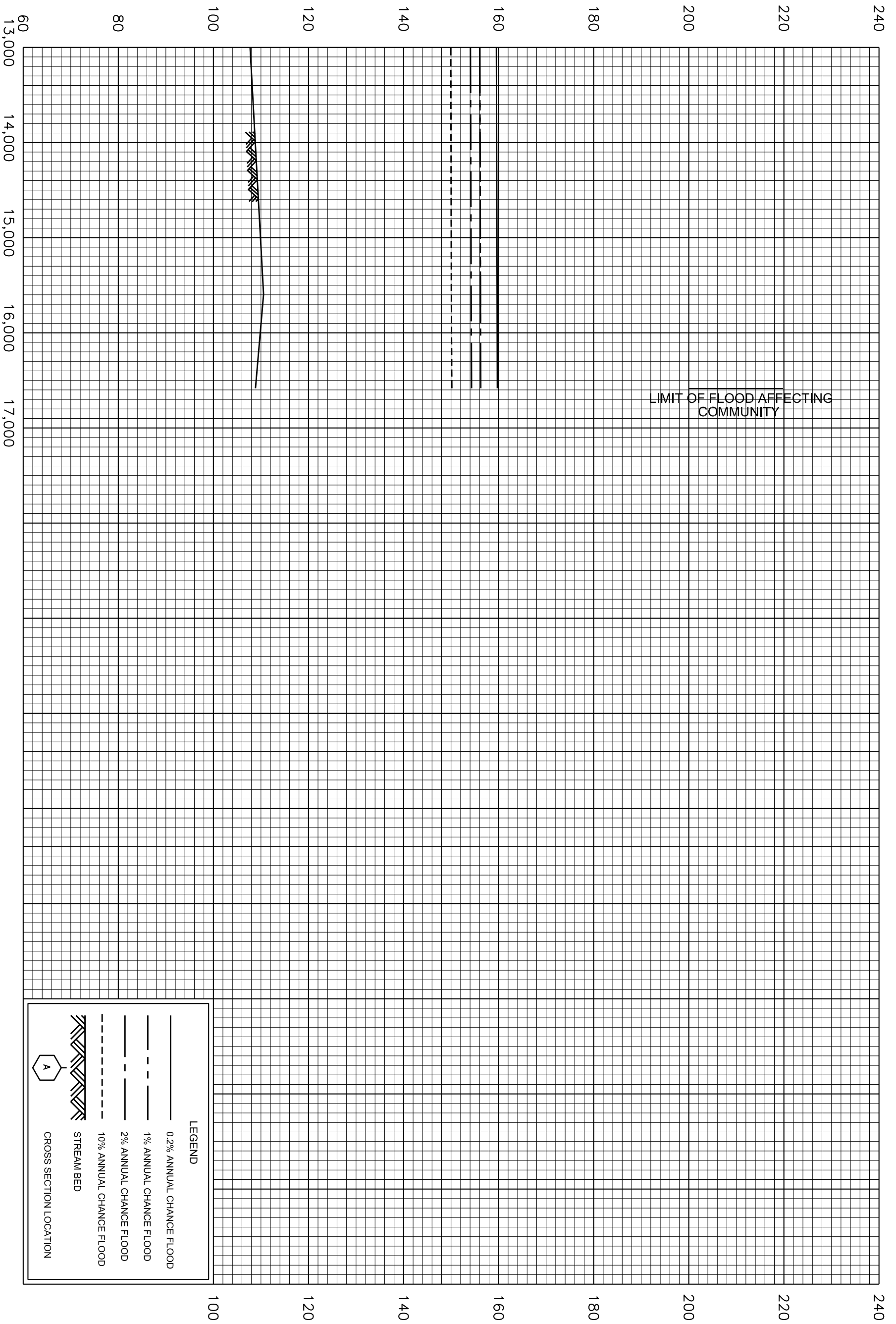
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U.S. Geological Survey, Nationwide Summary of U.S. Geological Survey Regional Regression Equations for Estimating Magnitude and Frequency of Floods for Ungaged Sites, U.S. Geological Survey Water-Resources Investigations Report 94-4002, 1993.

Watershed Concepts, a Division of AECOM, Watershed Information System Version 3.1.1, Greensboro, NC, July 2008.



ELEVATION IN FEET (NAVD)



STREAM DISTANCE IN FEET ABOVE NOXUBEE/LOWNDES COUNTY BOUNDARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

NOXUBEE COUNTY, MS
AND INCORPORATED AREAS

FLOOD PROFILES

TOMBIGBEE RIVER

02P