


# FLOOD INSURANCE STUDY



## LAFAYETTE COUNTY, MISSISSIPPI AND INCORPORATED AREAS

Community Name	Community Number	LAFAYETTE COUNTY
LAFAYETTE COUNTY (UNINCORPORATED AREAS)	280093	
ABBEVILLE, TOWN OF	280309	
OXFORD, CITY OF	280094	
TAYLOR, VILLAGE OF	280248	

**PRELIMINARY**

**AUG 21 2009**



**Federal Emergency Management Agency**

FLOOD INSURANCE STUDY NUMBER

28071CV000A

## **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.

## **TABLE OF CONTENTS**

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>1</b>
1.1	Purpose of Study .....	1
1.2	Authority and Acknowledgments.....	1
1.3	Coordination .....	2
<b>2.0</b>	<b>AREA STUDIED.....</b>	<b>2</b>
2.1	Scope of Study .....	2
2.2	Community Description .....	3
2.3	Principal Flood Problems .....	3
2.4	Flood Protection Measures.....	3
<b>3.0</b>	<b>ENGINEERING METHODS.....</b>	<b>4</b>
3.1	Hydrologic Analyses.....	4
3.2	Hydraulic Analyses .....	7
3.3	Vertical Datum.....	9
<b>4.0</b>	<b>FLOODPLAIN MANAGEMENT APPLICATIONS .....</b>	<b>10</b>
4.1	Floodplain Boundaries .....	10
4.2	Floodways .....	10
<b>5.0</b>	<b>INSURANCE APPLICATION .....</b>	<b>24</b>
<b>6.0</b>	<b>FLOOD INSURANCE RATE MAP .....</b>	<b>24</b>
<b>7.0</b>	<b>OTHER STUDIES .....</b>	<b>26</b>
<b>8.0</b>	<b>LOCATION OF DATA .....</b>	<b>26</b>
<b>9.0</b>	<b>BIBLIOGRAPHY AND REFERENCES .....</b>	<b>26</b>

## **TABLE OF CONTENTS - continued**

### **FIGURES**

Figure 1. Floodway Schematic .....	11
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### **TABLES**

Table 1: Letter of Map Change.....	3
Table 2: Summary of Discharges.....	5
Table 3: Summary of Stillwater Elevations.....	8
Table 4: Floodway Data Table.....	12
Table 5: Community Map History.....	25

### **EXHIBITS**

#### Exhibit 1 – Flood Profiles

Bailey Branch	Panels	01P – 02P
Burney Branch	Panels	03P – 06P
Clear Creek	Panels	07P – 08P
Davidson Creek	Panels	09P – 11P
Davidson Creek Tributary 1	Panels	12P
Davidson Creek Tributary 2	Panels	13P
East Goose Valley Creek	Panels	14P – 15P
East Goose Valley Creek Tributary 1	Panels	16P
East Goose Valley Creek Tributary 1A	Panels	17P
Hudson Creek	Panels	18P – 19P
West Goose Valley Creek	Panels	20P – 21P

#### Exhibit 2 – Flood Insurance Rate Map Index Flood Insurance Rate Map

# **FLOOD INSURANCE STUDY**

## **LAFAYETTE 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 Lafayette County, Mississippi, including the City of Oxford, the Town of Abbeville, the Village of Taylor, as well as the unincorporated areas of Lafayette County (referred to collectively herein as Lafayette 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. The sources of hydrologic and hydraulic analyses that have been performed for each jurisdiction included in this countywide FIS have been compiled from previous FIS reports and are described below.

Oxford, City of	The hydrologic and hydraulic analyses for the March 1978 FIS report were prepared by the U.S. Army Corps of Engineers (USACE), Vicksburg District, for the Federal Insurance Administration, under Inter-Agency Agreement No. (IAA)-H-16-75, Project Order No. 20, and Interagency Agreement No. (IAA)-H-7-76, Project Order No. 1. This work was completed in May 1977 (Reference 1).
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Lafayette County: (Unincorporated Areas)	The hydrologic and hydraulic analyses for the January 17, 1991 FIS report were prepared by Spencer-Engineers, Inc/consultants. for the Federal Emergency Management Agency (FEMA), under Contract No. EMW-87-C-2458. This study was completed in September 1988 (Reference 2).
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The hydrologic and hydraulic analyses for this study were performed by the State of Mississippi for FEMA, under Contract No. EMA-2006-CA-5617. This study was completed in April 2009. Floodplain boundaries for approximate study streams were

delineated based on 10 and 30 meter Digital Elevation Models (DEMs) from the United States Geological Survey (USGS).

Base map information shown on this Flood Insurance Rate Map (FIRM) was provided in digital format by Mississippi Department of Environmental Quality (MDEQ) and Mississippi Emergency Management Agency (MEMA).

The coordinate system used for the production of DFIRM is Mississippi State Plane East (FIPS 2301), reference to the North American Datum of 1983 and the GRS80. Distance units were measured in United States (U.S.) feet.

### 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 communities within the boundaries of Lafayette County are shown below.

<u>Community Name</u>	<u>Initial CCO Date</u>	<u>Final CCO Date</u>
City of Oxford	February 11, 1975	August 9, 1977
Lafayette County (Unincorporated Areas)	October 16, 1986	February 22, 1990

For this countywide FIS, an initial Consultation Coordination Officer (CCO) meeting was held on January 11, 2007 in the City of Oxford, and attended by representatives of FEMA, MDEQ, MEMA, Lafayette County, the City of Oxford, the Village of Taylor, the Town of Abbeville, and MGI (Study Contractor). 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 FIS covers the geographic area of Lafayette County, Mississippi, including the incorporated communities listed in Section 1.1. The areas studied by detailed methods were selected with priority given to all known flood hazards and areas of projected development or proposed construction.

Two types of analysis were used to develop this FIS report: redelineation of streams that had been previously studied with detailed methods, and approximate methods analysis. Floodplain boundaries of streams that had been previously studied by detailed methods were redelineated based on more detailed and up-to-date topographic mapping for this FIS report. Enhanced approximate analyses were used to study those areas having a low development potential or minimal flood hazards. The scope and methods of study for each stream were proposed to, and agreed upon, by FEMA and Lafayette County.

Table 1 presents Letters of Map Change incorporated into this countywide study.

**Table 1. Letters of Map Change**

<b>Community</b>	<b>Flooding Source(s) and Project Identifier</b>	<b>Date Issued</b>	<b>Type</b>
CITY OF OXFORD, MISSISSIPPI (Unincorporated Areas)	Burney Branch (02-04-179P)	May 8, 2002	LOMR

## 2.2 Community Description

Lafayette County is in north-central Mississippi, 85 miles southeast of the City of Memphis, Tennessee. It is bordered on the north by Tate and Marshall Counties; on the east by Union and Pontotoc Counties, on the south by Calhoun and Yalobusha Counties, and on the west by Panola County. The county seat is the City of Oxford. Lafayette County is served by State Highways 6, 7, 9W, 30, 314, and 334. The 2008 population for Lafayette County was estimated to be 43,922 (Reference 3).

## 2.3 Principal Flood Problems

The history of flooding in Lafayette County indicates that flooding may occur during any season of the year. The majority of floods occur during the winter and spring. Run off due to intense rainfall is the principal cause of flooding. Due to the relatively small size of the drainage basin, flash floods can occur from local high intensity thunderstorms.

Within Oxford, some of the low-lying areas along Burney Branch, Davidson Creek, East Goose Valley Creek, and Bailey Branch have experienced flooding. One of the worst floods occurred on May 10, 1970, when 6.6 inches of rain fell in 9 hours, and a maximum of 1.87 inches in 30 minutes was recorded. As a result of this storm, several streets and homes were inundated.

## 2.4 Flood Protection Measures

Sardis and Enid Lakes are large flood control reservoirs located in the northern and southern portions of the county, respectively. They are part of the Yazoo Headwaters Flood Control Project, authorized in 1936. Sardis Lake is a 32,500 acre flood control reservoir in Panola and Lafayette Counties. Completed in 1940 by the USACE, the lake was designed to control the floodwaters of the Little Tallahatchie River to prevent flooding in the Mississippi Delta. The lake has a storage capacity of 1.512 million acre feet. Enid Lake is a 17,000 acre flood control reservoir in Lafayette, Panola, and Yalobusha Counties. The lake was completed by the USACE in December 1952. Enid Lake was designed to control the floodwaters of the Yocona River to prevent flooding in the Mississippi Delta. The lake has a storage capacity of 602,400 acre-feet.

Neither Sardis Lake nor Enid Lake provides meaningful protection from the 1.0-percent-annual-chance flood upstream of the flood control structures.

### **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-annual-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 the peak discharge-frequency relationships for each flooding source studied by detail methods affecting the community.

##### **Pre-countywide Analyses**

*Lafayette County (Unincorporated Areas):* For the streams studied in detail, the only gaging station that existed (on Clear Creek at the State Highway 6 crossing) was discontinued in 1974. Published flood frequencies were used for portions of Clear Creek (Reference 4). For East Goose Valley Creek, Davidson Creek, and Burney Branch, in which portions of their drainages areas lie within the urban areas of Oxford, the estimated peak rural discharges were modified for urban conditions by USGS procedures (Reference 5).

Discharges for the 0.2%-annual-chance-flood for all streams were determined by straight line extrapolation of a log-probability graph of flood discharges computed for frequencies up to 100 years.

*City of Oxford:* Peak discharges were computed from synthetic unit hydrographs and rainfall information contained in the U.S. Weather Bureau Technical Paper No. 40 (Reference 6). The synthetic unit hydrograph parameters were developed by a combination of Snyder's Method and US Soil Conservation Service criteria (Reference 7). The base data for Snyder's Method were obtained from 35 years of gage records from Senatobia Creek at Senatobia and from 23 years of gage records from Clear Creek at State Highway 6, 5 miles west of the Oxford corporate limits (Reference 8). The unit hydrographs were adjusted for urbanization by procedures developed by the US Army Corps of Engineers (Reference 9).



Discharges for the 0.2-percent-annual-chance flood on all streams were computed from the synthetic unit hydrographs and rainfall as determined by the straight-line extrapolation of a single-log graph of rainfall amounts obtained for frequencies up to 100 years.

### **This Countywide Study**

For this countywide study, discharges for the 1-percent-annual-chance recurrence interval were calculated for stream reaches studied by approximate methods using regression equations for rural areas in Mississippi found in USGS Fact Sheet 008-01 (Reference 10). Discharges for the 0.2%-annual-chance frequency flood for all streams were determined by straight line extrapolation of a log-probability graph of flood discharges computed for frequencies up to 1%-annual-chance.

Peak discharge-drainage area relationships for the streams studied by detailed methods are shown in Table 2, "Summary of Discharges".

**Table 2. Summary of Discharges**

<b>FLOODING SOURCE AND LOCATION</b>	<b>PEAK DISCHARGES (cfs)</b>				
	<b>DRAINAGE AREA (Square miles)</b>	<b>10% Annual Chance</b>	<b>2% Annual Chance</b>	<b>1% Annual Chance</b>	<b>0.2% Annual Chance</b>
<b>BAILEY BRANCH</b>					
At Mouth	3.08	1,780	2,570	2,980	3,530
At abandoned road	0.61	520	730	830	980
<b>BURNEY BRANCH</b>					
At mouth	15.06	4,910	7,770	9,140	13,000
At southern corporate limits	9.84	4,010	6,130	7,200	8,660
At Mississippi State Highway 7 bypass	6.25	3,090	4,580	5,350	6,370
At Confluence with Bailey Branch	3.18	1,770	2,540	2,950	3,500
At Mississippi State Highway 6 Bypass	1.97	1,400	1,980	2,280	2,680
At University Avenue	1.51	2,130	2,680	3,000	3,570
At Jackson Avenue	1.28	1,800	2,270	2,540	3,030
At Confluence with Tributary	0.58	820	1,030	1,150	1,370
At City Park Culvert	0.44	620	780	880	1,040
At Cross Section T	0.30	420	530	600	710
<b>CLEAR CREEK</b>					
Just downstream of confluence of Hudson Creek	22.12	7,050	11,200	13,200	18,500
At State Highway 6	10.3	5,050	7,090	7,990	10,300
Approximately 2,000 feet upstream of State Highway 6	4.49	1,770	2,720	3,160	4,450
Approximately 2,800 feet upstream of County Road	2.59	1,190	1,800	2,070	2,800
<b>DAVISON CREEK</b>					
About 7,000 feet upstream of confluence of Berry Branch	8.10	3,400	5,550	6,510	9,100

FLOODING SOURCE AND LOCATION	PEAK DISCHARGES (cfs)				
	DRAINAGE AREA (Square miles)	10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
DAVISON CREEK (Continued)					
About 3,800 feet downstream of State Highway 314	3.20	2,120	3,250	3,730	5,150
About 2,000 feet downstream of State Highway 314	2.24	1,740	2,630	3,000	4,150
At College Hill Road	1.90	2,670	3,370	3,750	4,500
At Cross Section D	1.61	2,350	2,980	3,320	3,970
At Cross Section E	1.33	2,050	2,600	2,900	3,460
At Confluence with Tributary	0.90	1,600	2,020	2,250	2,680
At Cross Section I	0.70	1,370	1,750	1,950	2,320
DAVIDSON CREEK TRIBUTARY 1					
At Mouth	0.18	350	450	500	600
At State Highway 6	0.09	180	230	250	300
DAVIDSON CREEK TRIBUTARY 2					
At Mouth	0.43	840	1,080	1,200	1,420
At Washington Avenue	0.17	330	420	470	560
EAST GOOSE VALLEY CREEK					
Just downstream of the confluence of West Goose Valley Creek	11.99	3,800	6,250	7,400	10,500
Just upstream of the confluence of West Goose Valley Creek	5.99	2,200	3,500	4,140	5,800
Approximately 900 feet downstream of W. Jackson Avenue	2.12	2,200	2,780	3,100	3,700
Approximately 50 feet upstream of State Highway 6	NA	1,020	1,550	1,800	2,420
EAST GOOSE VALLEY CREEK TRIBUTARY 1					
At Mouth	2.13	2,200	2,780	3,100	3,700
At Mississippi State Highway 6	2.00	2,100	2,650	2,950	3,550
At Confluence of East Goose Valley Creek Tributary 1A	1.50	1,700	2,140	2,380	2,850
EAST GOOSE VALLEY CREEK TRIBUTARY 1A					
At Mouth	0.55	780	980	1,100	1,300
HUDSON CREEK					
At Mouth	9.44	2,860	4,500	5,200	7,300
About 5,000 feet upstream of State Highway 6	6.81	2,540	3,960	4,540	6,200
About 800 feet upstream of County Road	3.56	1,710	2,590	2,930	3,900
About 2,600 feet upstream of County Road	1.87	970	1,450	1,630	2,200

FLOODING SOURCE AND LOCATION	PEAK DISCHARGES (cfs)				
	DRAINAGE AREA (Square miles)	10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
WEST GOOSE VALLEY CREEK					
At mouth	6.00	2,080	3,250	3,780	5,300
At State Highway 6	NA	1,320	2,000	2,320	3,100
About 2,000 feet upstream of State Highway 6	1.61	800	1,190	1,370	1,800

### 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 FIRMs 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.

#### Pre-Countywide Analyses

Cross-section data for the water-surface profile analyses were obtained from field surveys. All bridges and culverts were surveyed to obtain elevation data and structural geometry. 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 elevations of floods of the selected recurrence intervals were computed using the HEC-2 water-surface profile computer program (Reference 11). Starting water-surface elevations for all streams were determined by the slope-area method. Channel and overbank roughness coefficients (Manning's "n") used in the hydraulic computations were chosen by engineering judgment and were based on field observations of the stream and floodplain areas. Manning's "n" values for channels ranged from 0.040 to 0.080 and for overbank areas ranged from 0.08 to 0.20.

#### This Countywide Study

For this countywide study, water-surface profiles were computed through the use of the USACE HEC-RAS version 3.1.2 computer program (Reference 12). Water surface profiles were produced for the 1-percent-annual-chance storms for approximate studies.

The approximate study methodology used the computer program WISE as a preprocessor to HEC-RAS. WISE combined geo-referenced data from the terrain model and miscellaneous shapefiles (such as streams and cross sections). 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 1.0-percent-annual-chance flood elevations for Enid and Sardis Lakes were determined by analysis of historical stage records. These elevations are presented in Table 3—Summary of Stillwater Elevations.

**Table 3. Summary of Stillwater Elevations**

FLOODING SOURCE AND LOCATION	ELEVATION (ft NAVD)			
	10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
ENID LAKE				
At Dam	*	*	273.5	*
SARDIS LAKE				
At Dam	283.1	*	285.6	*

\*Data Not Available

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross-section locations are also shown on the FIRM. Flood profiles were drawn showing the computed water-surface elevations for floods of the selected recurrence intervals. In cases where the 2%- and 1%-annual chance elevations are close together, due to limitations of the profile scale, only the 1%-annual chance profile has been shown.

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

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

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 approximate 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](http://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 used for newly created or revised FIS reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD). With the completion of the North American Vertical Datum of 1988 (NAVD), many FIS reports and FIRMs are now prepared using NAVD as the referenced vertical datum.

Flood elevations shown in this FIS report and on the FIRM are referenced to the NAVD. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. Some of the data used in this revision were taken from the prior effective FIS reports and FIRMs and adjusted to NAVD88. The datum conversion factor from NGVD29 to NAVD88 in Lafayette County is +0.07 feet.

For additional information regarding conversion between the NGVD and NAVD, visit the National Geodetic Survey website at [www.ngs.noaa.gov](http://www.ngs.noaa.gov), or contact the National Geodetic Survey at the following address:

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

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 FIS report and FIRM for this community. Interested individuals may contact FEMA to access these data.

To obtain current elevation, description, and/or location information for benchmarks shown on this map, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their website at [www.ngs.noaa.gov](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 1- and 0.2-percent-annual-chance floodplains; and 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 county. For each stream studied in detail, 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 based on topographic maps at a scale of 1:24,000 with contour intervals of 10 and 20 feet (Reference 13).

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 0.2-percent-annual-chance floodplain boundary corresponds to the boundary of areas of moderate flood hazards (Zone X). 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 boundaries are shown on the FIRM. For this revision, the floodplain boundaries were delineated based on topographic data provided by the USGS (Reference 13).

### **4.2 Floodways**

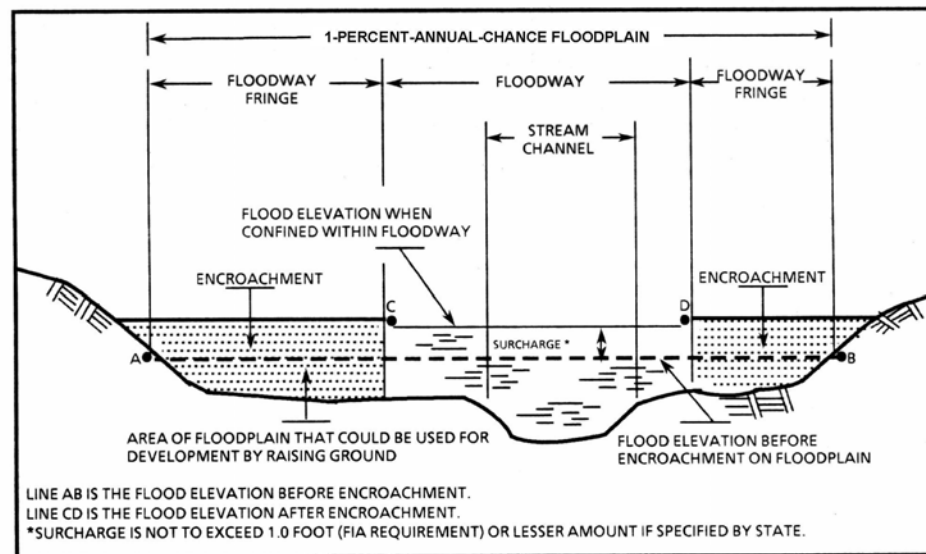
Encroachment on floodplains, such as structures and fill, reduces the flood carrying capacity, increases the flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 1-percent-annual-chance floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1-percent-annual-chance flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1.0 foot,

provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The 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 in Table 3, "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.

No floodways were computed for streams studied by enhanced approximate and approximate methods. Along streams where floodways have not been computed, the community must ensure that the cumulative effect of development in the floodplains will not cause more than a 1.0-foot increase in the base flood elevations at any point within the county.

The area between the floodway and the 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 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.



**Figure 1. Floodway Schematic**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
<b>BAILEY BRANCH</b>								
A	1,740	59	224	6.7	367.8	367.8	368.3	0.5
B	3,230	96	317	4.8	374.6	374.6	375.3	0.7
C	4,450	155	1,087	0.8	381.4	381.4	381.5	0.1
D	5,620	100	153	5.4	384.4	384.4	384.4	0.0
E	7,490	79	174	4.8	394.5	394.5	394.5	0.0

<sup>1</sup> Feet above mouth

**TABLE 4**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**LAFAYETTE COUNTY, MS  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**BAILEY BRANCH**



FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
<b>BURNEY BRANCH</b>								
A – M*								
N	1,342	185	2,500	2.6	350.5	350.5	351.2	0.7
O	2,734	113	1,170	5.0	351.0	351.0	351.7	0.7
P	3,593	96	995	5.9	351.7	351.7	352.2	0.5
Q	4,770	99	993	5.9	353.1	353.1	353.5	0.4
R	5,594	114	956	5.6	362.4	362.4	363.1	0.7
S	7,860	65	285	5.7	366.8	366.8	367.3	0.5
T	10,213	82	415	5.5	374.7	374.7	374.8	0.1
U	12,120	55	387	5.9	392.7	392.7	392.7	0.0
V	20,100	305	868	2.9	438.8	438.8	438.8	0.0
W	20,900	125	373	5.0	448.1	448.1	448.2	0.1
X	21,500	68	296	4.5	453.7	453.7	454.6	0.9

<sup>1</sup> Feet above City of Oxford Corporate boundary

\*Floodway data not computed for the area downstream of the City of Oxford corporate boundary.

**TABLE 4**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**LAFAYETTE COUNTY, MS  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**BURNEY BRANCH**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
<b>CLEAR CREEK</b>								
A	14,600	729	4,045	3.3	285.6	279.2 <sup>2</sup>	280.2	1.0
B	17,200	260	1,615	4.9	285.6	283.3 <sup>2</sup>	284.3	1.0
C	19,800	300	1,536	5.2	288.8	288.8	289.5	0.7
D	21,100	795	3,471	2.3	292.0	292.0	292.6	0.6
E	23,900	71	648	4.9	295.7	295.7	296.4	0.7
F	24,100	61	618	5.1	296.1	296.1	296.7	0.6
G	24,600	45	427	7.4	297.4	297.4	297.8	0.4
H	26,900	58	395	5.2	307.3	307.3	307.3	0.0
I	28,700	42	286	7.2	315.0	315.0	315.0	0.0

<sup>1</sup> Feet above confluence of Buford Creek

<sup>2</sup> Elevation computed without consideration of backwater effects from Sardis Lake

**TABLE 4**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**LAFAYETTE COUNTY, MS  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**CLEAR CREEK**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
<b>DAVIDSON CREEK</b>								
A	13,000	341	1,913	3.4	318.2	318.2	319.2	1.0
B	14,630	76	549	11.9	326.8	326.8	326.8	0.0
C	17,200	592	3,132	2.1	332.1	332.1	332.9	0.8
D	20,700	454	1,613	2.3	344.9	344.9	345.9	1.0
E	22,950	573	2,002	4.1	359.4	359.4	360.4	1.0
F	24,300	935	3,587	2.1	366.6	366.6	367.6	1.0
G	25,350	280	1,542	6.0	372.2	372.2	373.2	1.0
H	26,450	241	1,045	6.1	380.3	380.3	381.0	0.7
I	27,850	37	218	10.3	388.4	388.4	389.2	0.8
J	28,950	50	280	8.1	396.3	396.3	396.3	0.0
K	29,850	47	298	7.7	405.3	405.3	405.9	0.6
L	30,150	99	801	2.4	407.0	407.0	407.4	0.4

<sup>1</sup> Feet above mouth

**TABLE 4**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**LAFAYETTE COUNTY, MS  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**DAVIDSON CREEK**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD 88)				
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE	
DAVIDSON CREEK TRIBUTARY 1									
	A	100	136	349	2.7	369.2	369.2	370.2	1.0
	B	750	63	178	4.2	374.1	374.1	375.0	0.9
	C	1,500	161	429	2.8	386.0	386.0	387.0	1.0

<sup>1</sup> Feet above mouth

**TABLE 4**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**LAFAYETTE COUNTY, MS  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**DAVIDSON CREEK TRIBUTARY 1**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
<b>DAVIDSON CREEK TRIBUTARY 2</b>								
A	350	35	257	4.7	382.2	382.2	382.9	0.7
B	800	135	757	2.5	388.3	388.3	388.4	0.1
C	1,250	41	236	5.1	388.5	388.5	388.8	0.3
D	1,750	17	103	14.6	393.1	393.1	393.5	0.4
E	3,150	40	193	2.4	400.9	400.9	400.9	0.0

<sup>1</sup> Feet above mouth

**TABLE 4**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**LAFAYETTE COUNTY, MS  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**DAVIDSON CREEK TRIBUTARY 2**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
<b>EAST GOOSE VALLEY CREEK</b>								
A	10,900	380	1,485	2.8	308.9	308.9	309.9	1.0
B	13,700	615	1,439	2.9	319.0	319.0	319.9	0.9
C	17,200	594	1,569	2.6	336.0	336.0	336.7	0.7
D	20,200	760	1,865	2.2	342.8	342.8	343.8	1.0
E	21,150	529	1,125	3.7	347.9	347.9	384.4	0.5
F	21,600	777	2,649	1.6	351.2	351.2	351.5	0.3
G	26,400	309	621	2.9	370.0	370.0	371.0	1.0

<sup>1</sup> Feet above mouth

**TABLE 4**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**LAFAYETTE COUNTY, MS  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**EAST GOOSE VALLEY CREEK**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD 88)				
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE	
EAST GOOSE VALLEY CREEK TRIBUTARY 1									
	A	1,700	268	1,128	4.7	360.4	360.4	361.4	1.0
	B	2,200	209	516	10.2	363.6	363.6	364.3	0.7
	C	3,700	424	1,166	3.9	370.4	370.4	371.4	1.0
	D	4,250	560	2,630	1.6	373.6	373.6	374.6	1.0
	E	4,700	352	1,525	2.1	377.6	377.6	378.6	1.0

<sup>1</sup> Feet above mouth

**TABLE 4**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**LAFAYETTE COUNTY, MS  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**EAST GOOSE VALLEY CREEK TRIBUTARY 1**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD 88)				
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE	
EAST GOOSE VALLEY CREEK TRIBUTARY 1A									
	A	250	222	326	5.8	367.9	365.8 <sup>2</sup>	366.8	1.0
	B	1,450	154	555	3.4	377.3	377.3	377.3	0.0
	C	2,600	90	418	3.6	379.9	379.9	380.8	0.9

<sup>1</sup> Feet above mouth

<sup>2</sup> Elevation computed without consideration of backwater effects from East Goose Valley Creek Tributary 1

**TABLE 4**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**LAFAYETTE COUNTY, MS  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**EAST GOOSE VALLEY CREEK TRIBUTARY 1A**



FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
<b>HUDSON CREEK</b>								
A	1,600	306	1,644	3.2	285.6	284.7 <sup>2</sup>	285.7	1.0
B	4,400	75	714	7.3	289.5	289.5	290.0	0.5
C	5,600	212	1,486	3.5	292.2	292.2	292.6	0.4
D	9,800	146	949	4.8	303.9	303.9	304.7	0.8
E	11,600	86	816	5.6	308.5	308.5	309.3	0.8
F	14,600	112	1,185	3.8	314.9	314.9	315.5	0.6
G	16,150	86	789	5.8	319.5	319.5	319.6	0.1
H	16,700	72	604	4.9	321.3	321.3	321.4	0.1
I	18,600	37	346	4.7	328.8	328.8	328.8	0.0
J	21,100	30	280	5.8	345.4	345.4	345.7	0.3
K	22,900	51	472	3.5	352.7	352.7	353.4	0.7

<sup>1</sup> Feet above mouth

<sup>2</sup> Elevation computed without consideration of backwater effects from Sardis Lake

**TABLE 4**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**LAFAYETTE COUNTY, MS  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**HUDSON CREEK**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD 88)				
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE	
WEST GOOSE VALLEY CREEK									
	A	900	229	1,192	3.2	309.8	309.8	310.8	1.0
	B	10,500	399	1,657	1.4	346.2	346.2	346.5	0.3
	C	12,100	310	512	2.7	351.6	351.6	352.6	1.0
	D	13,500	61	361	3.8	357.8	357.8	358.5	0.7
	E	15,400	60	289	4.7	363.6	363.6	364.1	0.5

<sup>1</sup> Feet above mouth

**TABLE 4**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**LAFAYETTE COUNTY, MS  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**WEST GOOSE VALLEY CREEK**

## **5.0 INSURANCE APPLICATION**

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. These zones are as follows:

### **Zone A**

Zone A is the flood insurance 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 Lafayette County, Mississippi. 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 5, "Community Map History."

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
Lafayette County (Unincorporated Areas)	December 27, 1974	March 17, 1978	January 17, 1991	--
Abbeville, Town of	September 29, 1978	None	--	--
Oxford, City of	June 7, 1974	None	September 27, 1978	--
Taylor, Village of	--	None	--	--

**TABLE 5**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**ALCORN COUNTY, MS**  
AND INCORPORATED AREAS

**COMMUNITY MAP HISTORY**

## **7.0     OTHER STUDIES**

FIS reports have been published or are currently in progress for Calhoun, Marshall, Panola, Pontotoc, Tate and Yalobusha Counties, Mississippi. The Lafayette County study is in agreement with these studies.

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

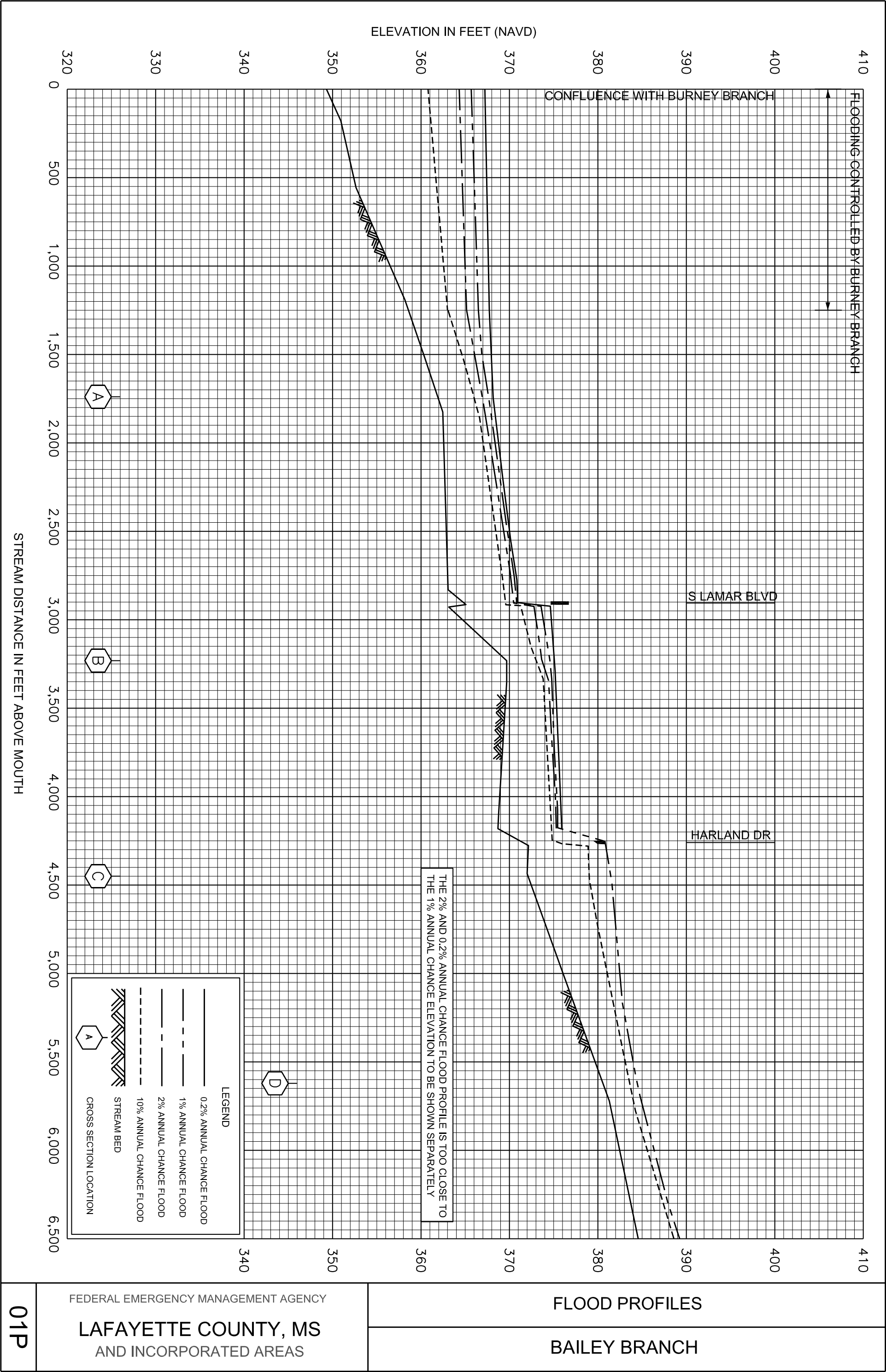
## **8.0     LOCATION OF DATA**

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

## **9.0     BIBLIOGRAPHY AND REFERENCES**

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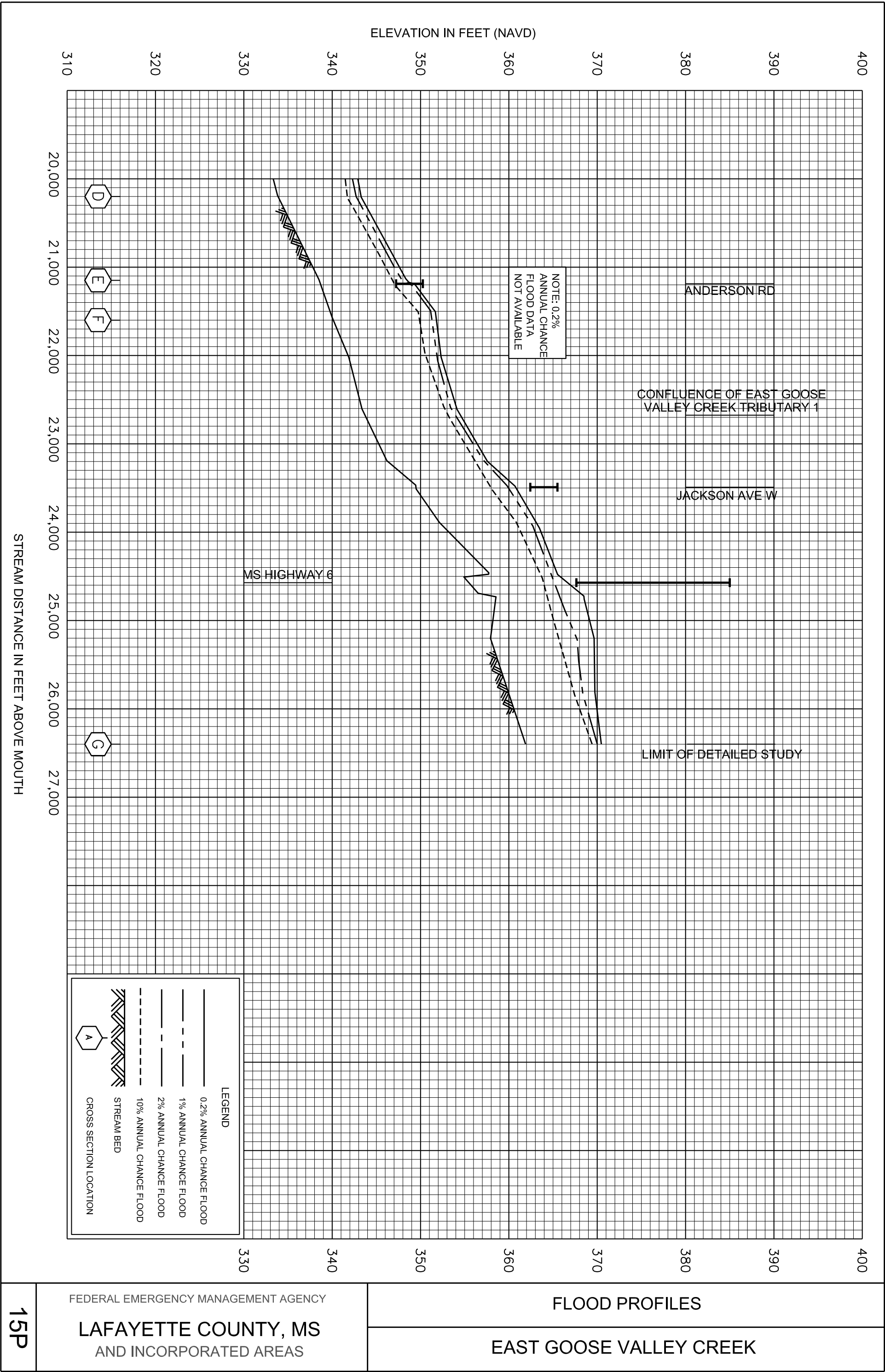


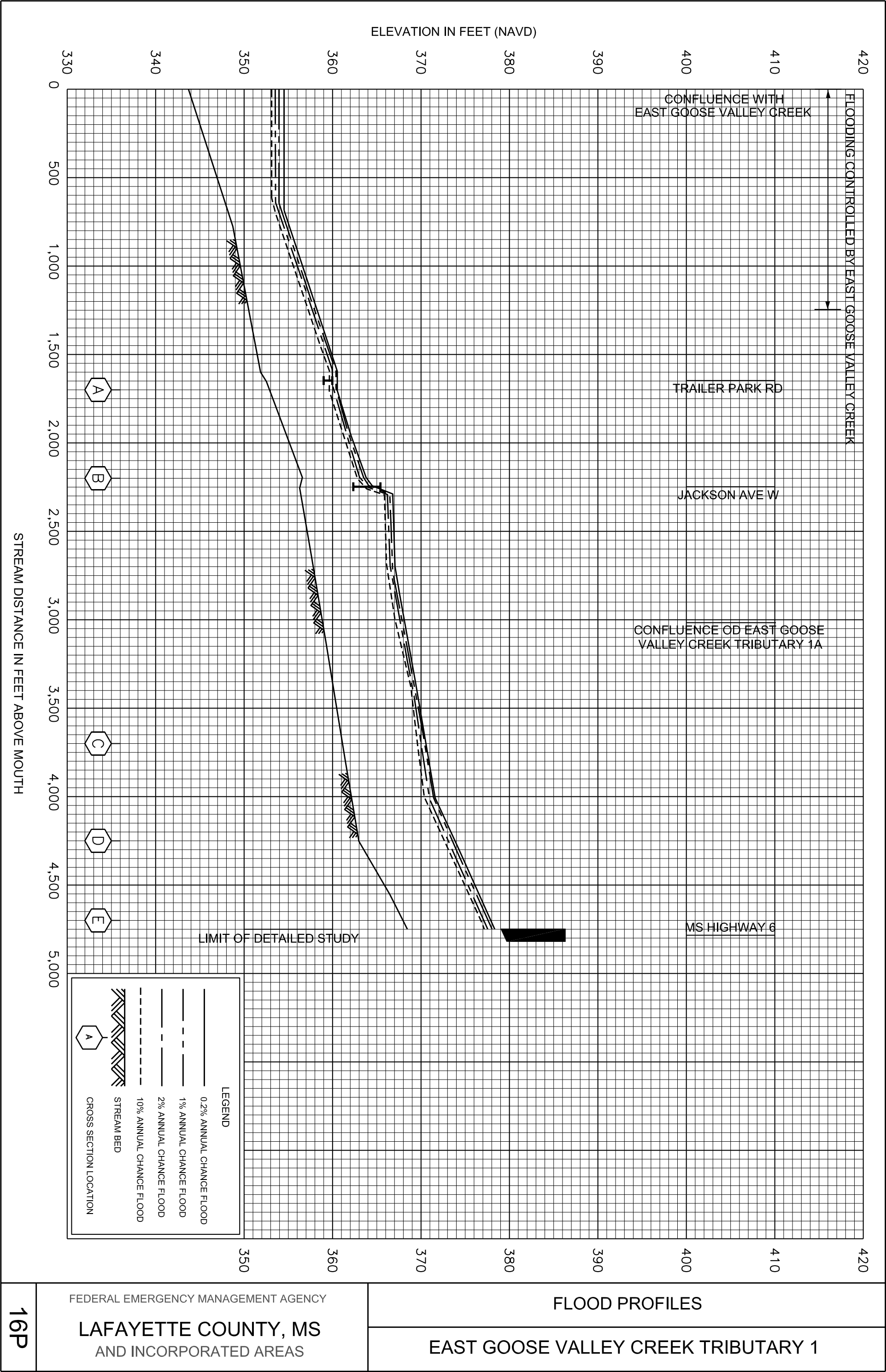


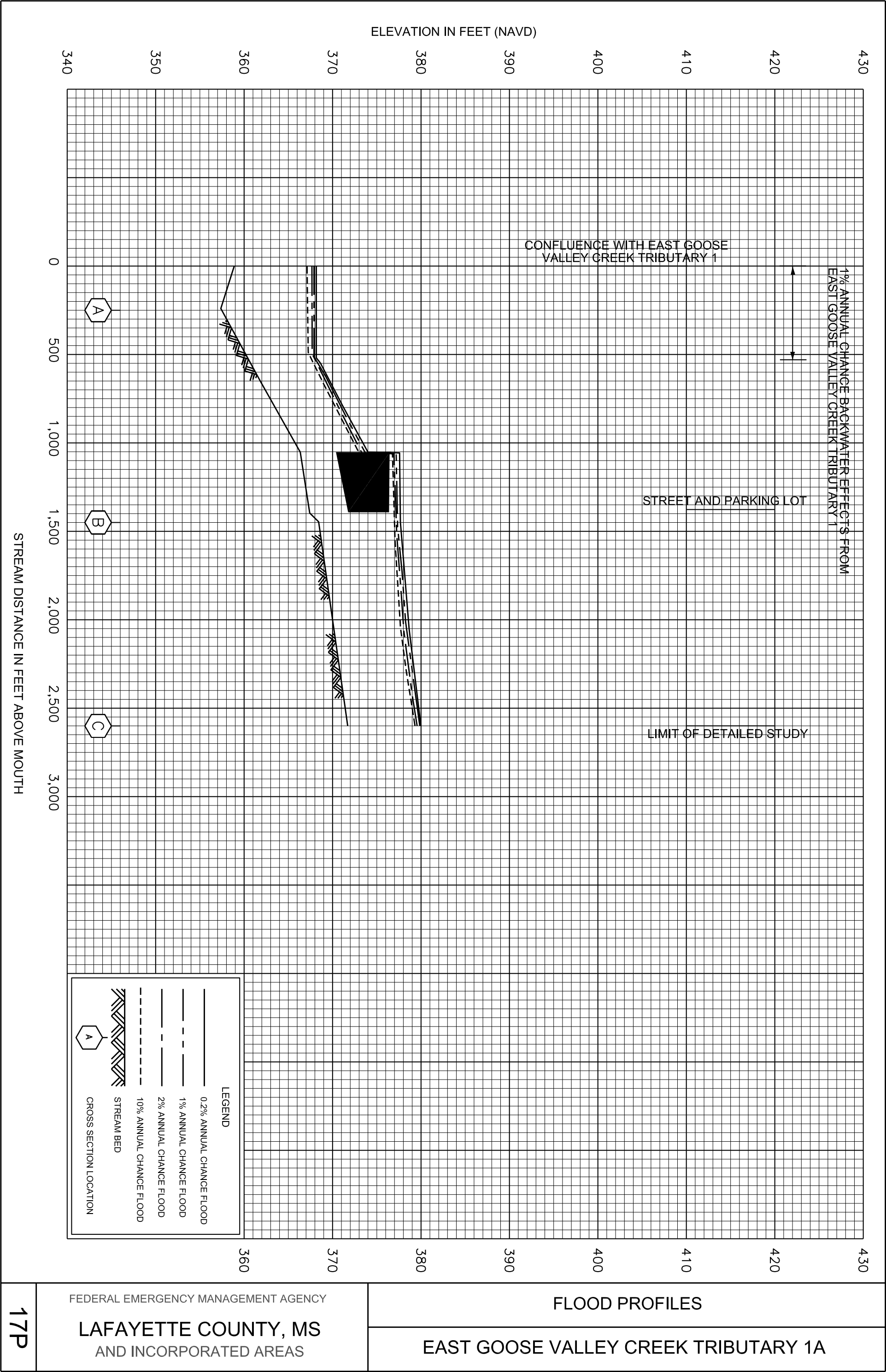












FEDERAL EMERGENCY MANAGEMENT AGENCY

LAFAYETTE COUNTY, MS  
AND INCORPORATED AREAS

FLOOD PROFILES

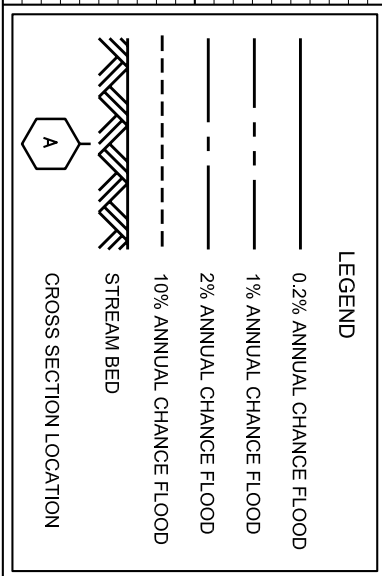
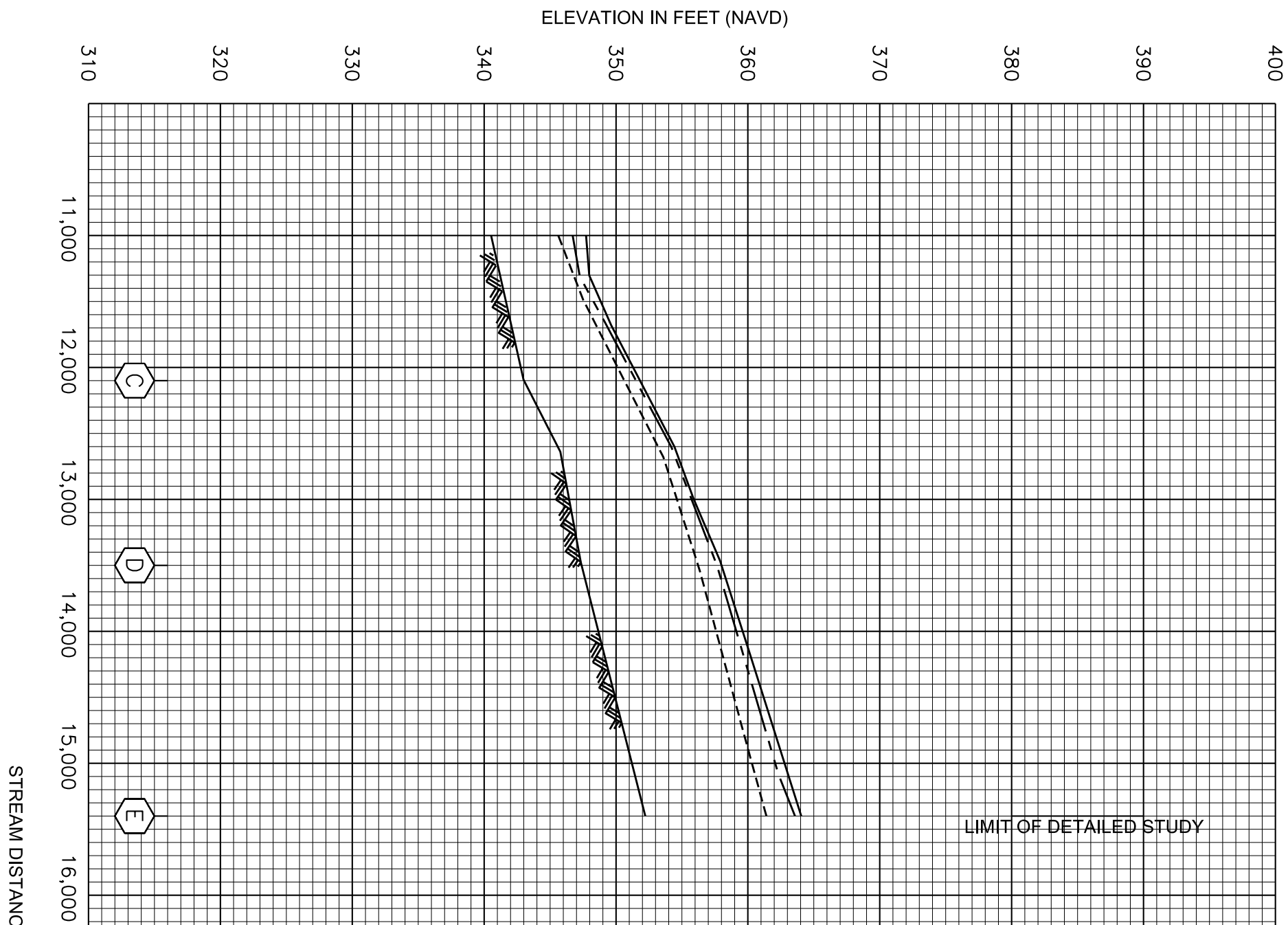
EAST GOOSE VALLEY CREEK TRIBUTARY 1A











FEDERAL EMERGENCY MANAGEMENT AGENCY

# LAFAYETTE COUNTY, MS

## AND INCORPORATED AREAS

## FLOOD PROFILES

# WEST GOOSE VALLEY CREEK

21P