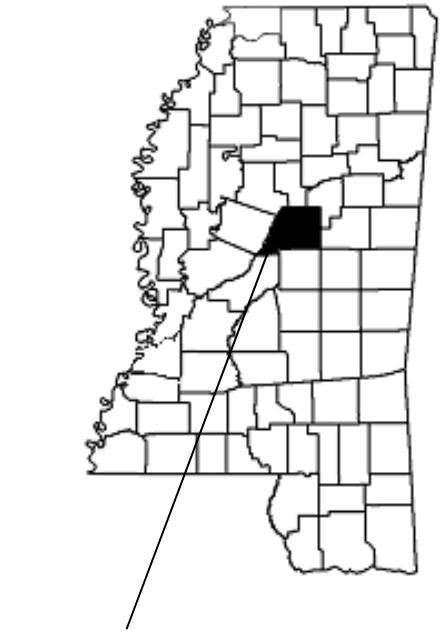
FLOOD INSURANCE STUDY

ATTALA COUNTY, MISSISSIPPI
AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
ATTALA COUNTY (UNINCORPORATED AREAS)	280301
ETHEL, TOWN OF	280006
KOSCIUSKO, CITY OF	280007
MCCOOL, VILLAGE OF	280008
SALLIS, VILLAGE OF	280009



ATTALA COUNTY

EFFECTIVE:

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
28007CV000A

NOTICE TO
FLOOD INSURANCE STUDY USERS

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

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

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

Old Zone(s)	New Zone
A1 through A30	AE
V1 through V30	VE
B	X
C	X

Initial Countywide FIS Report Effective Date:

Revised Countywide FIS Report Dates:

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FLOOD INSURANCE STUDY
ATTALA COUNTY, MISSISSIPPI AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and supersedes the FIS reports and/or Flood Insurance Rate Maps (FIRMs) in the geographic area of Attala County, Mississippi, including the City of Kosciusko, the Town of Ethel, the Villages McCool and Sallis, and the unincorporated areas of Attala County (hereinafter referred to collectively as Attala County).

This FIS aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood risk data for various areas of the community that will be used to establish actuarial flood insurance rates. This information will also be used by Attala County to update existing floodplain regulations as part of the Regular Phase of the National Flood Insurance Program (NFIP), and by local and regional planners to further promote sound land use and floodplain development. Minimum floodplain management requirements for participation in the NFIP are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the State (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgments

The sources of authority for this FIS report are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

January 1979, City of Kosciusko FIS

The hydrologic and hydraulic analyses for this study were performed by Michael Baker, Jr., Inc., for the Federal Insurance Administration under Case No. H-4588. This work, which was completed in January 1978, covered all significant flooding sources in the City of Kosciusko.

This Countywide FIS

The hydrologic and hydraulic analyses for this countywide FIS were performed by the State of Mississippi for the Federal Emergency Management Agency (FEMA), under Contract No. EMA-2007-CA-5774. This study was completed in August 2009.

The digital base map information files were provided by the U.S. Army Corps of Engineers—Vicksburg District, 4155 East Clay Street, Vicksburg, MS 39183, phone number (601) 631-5053. The digital orthophotography was acquired in March 2006, with the imagery at a scale of 1:400 processed to a 2-foot pixel resolution.

The digital FIRM was produced using the Mississippi State Plane Coordinate System, East Zone, FIPS ZONE 2301. The horizontal datum was the North American Datum of 1983, GRS 1980 spheroid. Distance units were measured in U.S. feet.

1.3 Coordination

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

January 1979, City of Kosciusko FIS

A meeting was held at City Hall in Kosciusko on July 20, 1977 with the representatives of the City of Kosciusko, the Federal Insurance Administration, and the engineering firm of Michael Baker, Jr., Inc., to discuss the nature and purpose of the study, to review flood problems, to explain study methods and procedures, and to determine areas to be studied within the community. Public participation was encouraged and residents were invited to provide information related to flooding, high-water marks, photographs, or other pertinent data.

Throughout the study, contact was maintained with the City of Kosciusko; the U.S. Army Corps of Engineers (USACE), Mobile District; the U.S. Geological Survey (USGS); and the State Coordinating Agency to seek information and review study findings.

On July 31, 1978, the results of the work by Michael Baker, Jr., Inc. were reviewed at a final coordination meeting attended by personnel of Michael Baker, Jr., Inc., the Federal Insurance Administration, the State Coordinating Agency, and officials of the City of Kosciusko.

This Countywide FIS

For this countywide FIS, the Project Scoping Meeting was held on April 2, 2008 in Kosciusko, MS. Attendees for these meetings included representatives from the Mississippi Department of Environmental Quality, Mississippi Emergency Management Agency, FEMA National Service Provider, Attala County, the City of Kosciusko, the Town of Sallis, the Town of Ethel, the State, and the Study Contractor. Coordination with county officials and Federal, State, and regional agencies produced a variety of information pertaining to floodplain regulations, available community maps, flood history, and other hydrologic data. All problems raised in the meetings have been addressed.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS covers the geographic area of Attala County, Mississippi, and its incorporated communities listed in Section 1.1 Several flooding sources within the county were studied by approximate methods. Approximate analyses are used to study those areas

having a low development potential or minimal flood hazards. The scope and methods of study were proposed to, and agreed upon, by FEMA and the State of Mississippi.

January 1979, City of Kosciusko FIS

Three streams within the corporate limits of Kosciusko were studied in detail. Streams studied in detail were:

Dye Ditch, from approximately 4,000 upstream of the confluence with the Yackanookany River to approximately 60 feet downstream of Vaiden Road.

East Fork Creek, from its confluence with Canal Creek to approximately 170 feet upstream of Fairgrounds Road.

East Fork Tributary 1, from its confluence with East Fork Creek to approximately 1,160 feet upstream.

This Countywide FIS

This FIS covers the geographic area of Attala County, Mississippi, and its incorporated communities. Canal Creek was studied by detailed methods from the Natchez Trace Parkway to a point approximately 288 feet upstream of State Highway 12.

Several flooding sources within the county were studied by approximate methods. Approximate analyses are used to study those areas having a low developmental potential or minimal flood hazards. The scope and methods of study were proposed to, and agreed upon, by FEMA and the State of Mississippi.

2.2 Community Description

Formed in 1833 and named after Chateaubriand's Indian heroine, Attala County is located in central Mississippi and is bordered by Carroll, Choctaw, and Montgomery Counties to the north, Choctaw and Winston Counties to the east, Leake and Madison Counties to the south, and Carroll and Madison Counties to the west. Attala County is served by State Highways 12, 14, 19, 35, 43, 407, 411, 413, 425, 429, 431, 440, 731, 735, 736, and the Kosciusko and Southwestern Railway. The 2008 population was estimated by the U.S. Census Bureau to be 19,671 (U.S. Census Bureau, 2010). The major industries in Attala County are manufacturing, retail trade, and health care (U.S. Census Bureau, 2008).

The terrain may be described as gently rolling with well-defined drainage basins and moderately well drained to poorly drained soils. Vegetation in the drainage basins consists mostly of pine and hardwoods with heavy undergrowth.

The climate of Attala County is characterized by warm, humid summers and mild winters. The annual mean precipitation is 60 inches. Temperatures range from a January average of 43 ^{o}F to a July average of 81 ^{o}F (Mississippi State University, 2007).

2.3 Principal Flood Problems

Intense seasonal rains and occasional tropical storms or hurricanes are the cause of periodic flooding in Attala County. Minor flood damage to urban, residential, and industrial properties has occurred along Dye Ditch and Canal Creek in the City of Kosciusko.

2.4 Flood Protection Measures

No flood protection measures have been instituted other than normal channel maintenance and periodic replacement of aged and undersized drainage structures under streets and roadways.

3.0 ENGINEERING METHODS

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

3.1 Hydrologic Analyses

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

January 1979, City of Kosciusko FIS Analyses

Peak discharge computations were based on a regional flood frequency report prepared by the USGS (U.S. Department of the Interior, 1976), applicable to unurbanized basins in the State of Mississippi. Techniques for estimating future flood magnitudes were developed in the report using records of annual peaks for 89 basins and observed annual peak-flow data for 221 gaging stations. The length of record for 82 of the 221 stream gaging stations with actual records is 25 years or more. The natural drainage areas for which flood frequency is defined range from 0.04 to 6,630 square miles.

Multi-regression analyses were used to average the chance variability of the data and relate flood frequency to basin characteristics, the most significant being drainage area, slope, and length. Because the regional analysis is applicable only to unurbanized basins,

adjustment factors were applied where applicable to include consideration for urbanization along the streams in the study area.

Peak discharges were obtained for approximate study streams by the same method described previously (U.S. Department of the Interior, 1976).

This Countywide FIS Analysis

Peak discharges were calculated based on USGS regional regression equations (U.S. Department of the Interior, 1991). For the discharges calculated based on regional regression equations, the rural regression values were modified to reflect stream gage weighting and/or urbanization as necessary.

A summary of the drainage area-peak discharge relationships for all the streams is shown in Table 1, "Summary of Discharges."

TABLE 1. SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. mi.)	PEAK DISCHARGES (cfs) 10-percent	2-percent	1-percent	0.2-percent
CANAL CREEK					
At State Highway 12	2.67	1,714	2,193	2,269	2,755
At Veterans Memorial Drive	1.34	1,081	1,378	1,474	1,723
At Jefferson Street	1.30	998	1,269	1,356	1,582
At Confluence of East Fork Creek	0.94	880	1,118	1,195	1,393
At Natchez Trace Parkway	0.53	543	688	733	853
DYE DITCH					
Approximately 1,750 downstream of State Highway 43	3.03	1,526	2,265	2,673	3,955
At State Highway 43	2.68	1,358	2,009	2,398	3,546
At South Street	2.13	1,204	1,762	2,101	3,078
At Railroad	1.38	625	929	1,124	1,673
At Adams Street	1.07	490	724	882	1,307
At State Highway 12	0.75	350	511	629	926
At State Highway 19	0.30	214	308	343	487
EAST FORK CREEK					
Confluence with Canal Creek	1.16	536	795	946	1,403
At Jefferson Street	1.05	501	739	876	1,293
At Railroad	0.93	460	676	797	1,171
At confluence with East Fork Creek Tributary 1	0.55	306	442	517	746
At limit of detailed study	0.45	268	382	449	642
EAST FORK CREEK TRIBUTARY 1					
Confluence with East Fork Creek	0.25	185	256	289	399

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Users should be aware that flood elevations shown on the FIRM represent rounded whole-foot elevations and may not exactly reflect the elevations shown on the Flood Profiles or in the Floodway Data table in the FIS report. Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS report in conjunction with the data shown on the FIRM.

January 1979, City of Kosciusko FIS Analyses

Cross sections of stream channels and bottom lands were field surveyed along with bridge and culvert waterway openings following reconnaissance of the study area by engineers.

With stream characteristics determined by field observation, flood profiles were computed using the HEC-2 computer step-backwater model developed by the USACE (USACE, 1973). Starting water-surface elevations for Dye Ditch, East Fork Creek, and East Fork Creek Tributary 1 were developed by the slope area method. Roughness coefficients (Manning's "n") used in the computations ranged from 0.02 to 0.12 in the channel and 0.045 to 0.19 for the overbanks.

This Countywide FIS Analysis

Cross section geometries were obtained from a combination of terrain data and field surveys. Bridges and culverts located within the limited detailed study limits were field surveyed to obtain elevation data and structural geometry.

Downstream boundary conditions for the hydraulic models were set to normal depth using a starting slope calculated from values taken from topographic data, or where applicable, derived from the water-surface elevations. Water-surface profiles were computed through the use of the USACE HEC-RAS version 3.1.3 computer program (USACE, 2003). The model was run for the 1-percent-annual-chance storm for the limited detail and approximate studies.

Canal Creek was studied by detailed methods. This study type entails collecting basic field measurements of hydraulic structures and channel geometry. Vertical control is determined from points taken by the survey team. Generalized roughness values are estimated from land-use data, aerial photography, and photographs taken during the survey. Channel and overbank reach lengths are computed using GIS methods. Roughness coefficients (Manning's "n") used in the computations ranged from 0.0145 in the channel and 0.06 to 0.15 for the overbanks. Model results are calibrated to known stage values, as they are available and deemed reliable.

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

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

Benchmarks cataloged by the NGS and entered into the NSRS vary widely in vertical stability classification. NSRS vertical stability classifications are as follows:

> Stability A: Monuments of the most reliable nature, expected to hold position/elevation well (e.g., mounted in bedrock)
>
> Stability B: Monuments which generally hold their position/elevation well (e.g., concrete bridge abutment)
>
> Stability C: Monuments which may be affected by surface ground movements (e.g., concrete monuments below frost line)
>
> Stability D: Mark of questionable or unknown vertical stability (e.g., concrete monument above frost line, or steel witness post)

In addition to NSRS benchmarks, the FIRM may also show vertical control monument established by a local jurisdiction; these monuments will be shown on the FIRM with the appropriate designations. Local monuments will only be placed on the FIRM if the community has requested that they be included, and if the monuments meet the aforementioned NSRS inclusion criteria.

To obtain current elevation, description, and/or location information for benchmarks shown on the FIRM for this jurisdiction, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit its website at http://www.ngs.noaa.gov.

Temporary vertical monuments are often established during the preparation of a flood hazard analysis for the purpose of establishing local vertical control. Although these monuments are not shown on the FIRM, they may be found in the Technical Support Data Notebook associated with the FIS report and FIRM. Interested individuals may contact FEMA to access this data.

3.3 Vertical Datum

All FIS reports and FIRMs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. Until recently, the standard vertical datum in use for newly created or revised FIS reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD29). With the finalization of the North American Vertical Datum of 1988 (NAVD88), many FIS reports and FIRMs are being prepared using NAVD88 as the referenced vertical datum.

All flood elevations shown in this FIS report and on the FIRM are referenced to NAVD88. Structure and ground elevations in the community must, therefore, be referenced to NAVD88. It is important to note that adjacent communities may be referenced to NGVD29. This may result in differences in Base Flood Elevations (BFEs) across the corporate limits between the communities.

Ground, structure, and flood elevations may be compared and/or referenced to NGVD29 by applying a conversion factor. To convert elevations from NAVD88 to NGVD29, add 0.04 feet to the NAVD88 elevation. The 0.04 feet value is an average for the entire county. The adjustment value was determined using the USACE Corpscon 6.0.1 computer program (USACE, 2004) and topographic maps (U.S. Department of the Interior, 1964). The BFE's shown on the FIRM represent whole-foot rounded values. For example, a BFE of 12.4 feet will appear as 12 feet on the FIRM, and 12.6 feet as 13 feet. Users who wish to convert the elevations in this FIS report to NGVD29 should apply the stated conversion factor to elevations shown on the Flood Profiles and supporting data tables in the FIS report, which are shown at a minimum to the nearest 0.1-foot.

For more information regarding conversion between the NGVD and the NAVD, see the FEMA publication entitled *Converting the National Flood Insurance Program to the North American Vertical Datum of 1988* or contact the Vertical Network Branch, National Geodetic Survey, Coast and Geodetic Survey, National Oceanic and Atmospheric Administration, Rockville, Maryland 20910 (Internet address http://www.ngs.noaa.gov).

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. Therefore, each FIS provides 1-percent-annual-chance flood elevations and delineations of the 1- and 0.2-percent-annual-chance floodplain boundaries and 1-percent-annual-chance floodway to assist communities in developing floodplain management measures. This information is presented on the FIRM and in many components of the FIS report, including Flood Profiles, Floodway Data Table and Summary of Stillwater Elevations Table. Users should reference the data presented in the FIS report as well as additional information that may be available at the local map repository before making flood elevation and/or floodplain boundary determinations.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent-annual-chance flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent-annual-chance flood is employed to indicate additional areas of flood risk in the community. For each stream studied by detailed methods, the 1- and 0.2-annual-chance floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:24,000 with a contour interval of 10 feet (USGS, 1972).

The 1- and 0.2-percent-annual-chance floodplain boundaries are shown on the FIRM (Exhibit 2), On this map, the 1-percent-annual-chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A and AE); and the 0.2-percent-annual-chance floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 1- and 0.2-percent-annual-chance floodplain boundaries are close together, only the 1-percent-annual-chance floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood

elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

For the streams studied by limited detailed and approximate methods, only the 1-percent-annual-chance floodplain boundary is shown on the FIRM (Exhibit 2). Floodplain boundaries for these streams, as well as those streams that have been previously studied by detailed methods, were generated using USGS 10-meter Digital Elevation Models (USGS), then refined using detailed hydrographic data.

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 1-percent-annual-chance floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 1-percent-annual-chance flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

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

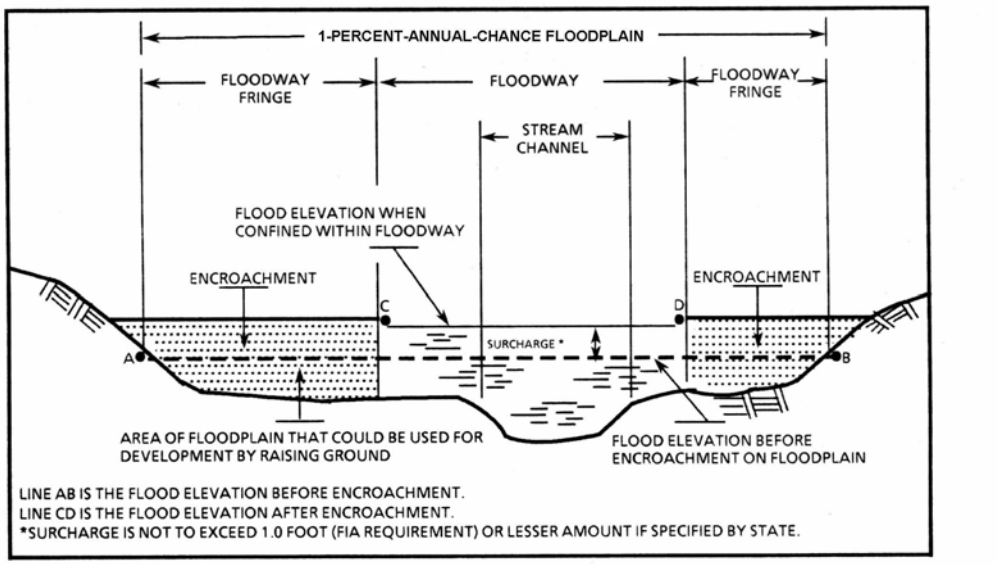
Near the mouths of streams studied in detail, floodway computations are made without regard to flood elevations on the receiving water body. Therefore, “Without Floodway” elevations presented in Table 2, “Floodway Data,” for certain downstream cross sections are lower than the regulatory flood elevations in that area, which must take into account the 1-percent-annual-chance flooding due to backwater from other sources.

Encroachment into areas subject to inundation by floodwaters having hazardous velocities aggravates the risk of flood damage, and heightens potential flood hazards by further increasing velocities. For detailed study streams, a listing of stream velocities at selected cross sections is provided in Table 2. In order to reduce the risk of property damage in areas where the stream velocities are high, the county may wish to restrict development in areas outside the floodway.

The area between the floodway and 1-percent-annual-chance floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 1-percent-annual-chance flood more than 1.0 foot at any point. Typical

relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 1.

Floodways were calculated for Canal Creek, Dye Ditch, East Fork Creek, and East Fork Creek Tributary 1.



FLOODWAY SCHEMATIC Figure 1

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
CANAL CREEK								
A	442	260	1481	3.3	393.8	393.8	393.8	0.0
B	1,989	51	436	5.2	394.8	394.8	395.1	0.3
C	2,795	39	219	10.4	397.7	397.7	397.9	0.2
D	4,041	66	339	3.0	404.3	404.3	404.7	0.4
E	4,846	210	1337	1.7	407.5	407.5	407.7	0.2
F	5,899	160	922	3.7	407.6	407.6	408.1	0.5
G	6,957	35	204	5.9	411.3	411.3	411.5	0.2
H	7,308	138	364	4.0	414.5	414.5	414.7	0.2
I	8,526	119	435	6.2	418.5	418.5	418.6	0.1
J	8,955	41	241	4.5	422.2	422.2	422.9	0.7

[1] FEET ABOVE NATCHEZ TRACE PARKWAY

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

ATTALA COUNTY, MS AND INCORPORATED AREAS

FLOODWAY DATA

CANAL CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
DYE DITCH								
A	0.76	709	3,256	0.8	394.0	394.0	395.0	1.0
B	1.05	358	1,583	1.7	398.7	398.7	399.7	1.0
C	1.12	115	1,143	2.1	402.1	402.1	403.0	0.9
D	1.54	257	1,244	1.9	406.3	406.3	406.9	0.6
E	1.81	296	1,546	1.4	410.6	410.6	411.6	1.0
F	2.15	183	837	2.5	414.6	414.6	415.6	1.0
G	2.27	45	460	4.6	420.2	420.2	420.4	0.2
H	2.36	45	434	2.6	420.4	420.4	421.0	0.6
I	2.59	156	665	1.7	422.8	422.8	423.5	0.7
J	2.76	76	461	1.9	426.2	426.2	427.2	1.0
K	2.88	163	709	0.9	428.3	428.3	429.3	1.0
L	3.23	97	319	1.5	434.4	434.4	435.4	1.0
M	3.39	67	187	2.6	438.4	438.4	439.4	1.0
N	3.58	13	115	3.0	447.5	447.5	448.3	0.8
O	3.61	244	1,226	0.3	447.5	447.5	448.5	1.0
P	3.75	67	256	1.3	447.6	447.6	448.6	1.0

[1] MILES ABOVE MOUTH

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

ATTALA COUNTY, MS AND INCORPORATED AREAS

FLOODWAY DATA

DYE DITCH

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
EAST FORK CREEK								
A	498	34	215	4.4	402.5	402.3[2]	403.1	0.8
B	1,125	37	295	3.0	407.3	407.3	407.4	0.1
C	2,145	72	286	3.1	408.2	408.2	409.2	1.0
D	2,350	191	627	1.3	408.7	408.7	409.5	0.8
E	2,986	198	630	1.0	411.9	411.9	412.9	1.0
F	3,792	87	259	2.0	414.5	414.5	415.5	1.0
G	5,723	36	127	4.1	422.8	422.8	423.8	1.0
H	5,962	95	303	1.5	423.2	423.2	424.2	1.0
EAST FORK CREEK TRIBUTARY 1								
A	1,160	34	97	3.0	424.4	424.4	425.4	1.0

[1] FEET ABOVE MOUTH
[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM CANAL CREEK

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

ATTALA COUNTY, MS AND INCORPORATED AREAS

FLOODWAY DATA

EAST FORK CREEK – EAST FORK CREEK TRIBUTARY 1

5.0 INSURANCE APPLICATION

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

Zone A

Zone A is the flood insurance risk zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base (1-percent-annual-chance) flood elevations (BFEs), or base flood depths are shown within this zone.

Zone AE

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

Zone AH

Zone AH is the flood insurance rate zone that corresponds to the areas of 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within the zone.

Zone AO

Zone AO is the flood insurance rate zone that corresponds to the areas of 1-percent-annual-chance shallow flooding (usually sheet flow on sloping terrain) where the average depths are between 1 and 3 feet. Average whole-foot depths derived from the detailed hydraulic analyses are shown within the zone.

Zone A99

Zone A99 is the flood insurance rate zone that corresponds to areas of the 1-percent floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or depths are shown within this zone.

Zone V

Zone V is the flood insurance rate zone that corresponds to the 1-percent coastal floodplains that have additional hazards associated with storm waves. Because approximate hydraulic analyses are performed for such areas, no base flood elevations are shown within this zone.

Zone VE

Zone VE is the flood insurance rate zone that corresponds to the 1-percent coastal floodplains that have additional hazards associated with storm waves. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance risk zone that corresponds to areas outside the 0.2-percent annual chance floodplain, areas within the 0.2-percent annual chance floodplain, areas of 1-percent-annual-chance flooding where average depths are less than 1 foot, areas of 1-percent-annual-chance flooding where the contributing drainage area is less than 1 square mile, and areas protected from the base flood by levees. No BFEs or depths are shown within this zone.

Zone D

Zone D is the flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.

6.0 FLOOD INSURANCE RATE MAP

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

For flood insurance applications, the map designates flood insurance risk zones as described in Section 5.0 and, in the 1-percent-annual-chance floodplains that were studied by detailed methods, shows selected whole-foot BFEs or average depths. Insurance agents use the zones and BFEs in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

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

The countywide FIRM presents flooding information for the entire geographic area of Attala County. Previously, FIRMs were prepared for each incorporated community and the unincorporated areas of the County identified as flood-prone. This countywide FIRM also includes flood-hazard information that was presented separately on Flood Boundary and Floodway Maps (FBFMs), where applicable. Historical data relating to the maps prepared for each community, up to and including this countywide FIS are presented in Table 3, “Community Map History.”

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
Attala County (Unincorporated Areas)	July 29, 1977	--	June 1, 1988	--
Town of Ethel	February 7, 1975	--	--	--
City of Kosciusko	January 18, 1974	June 18, 1976	July 2, 1979	--
Village of McCool	January 31, 1975			
Village of Sallis	January 30, 1976	--	--	--

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

ATTALA COUNTY, MS

AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

7.0 OTHER STUDIES

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

8.0 LOCATION OF DATA

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

9.0 BIBLIOGRAPHY AND REFERENCES

Mississippi State Climatologist (2007), Website, Starkville, Mississippi, http://www.msstate.edu/dept/GeoSciences/climate/

U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles Generalized Computer Program, Davis, California, 1973.

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

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

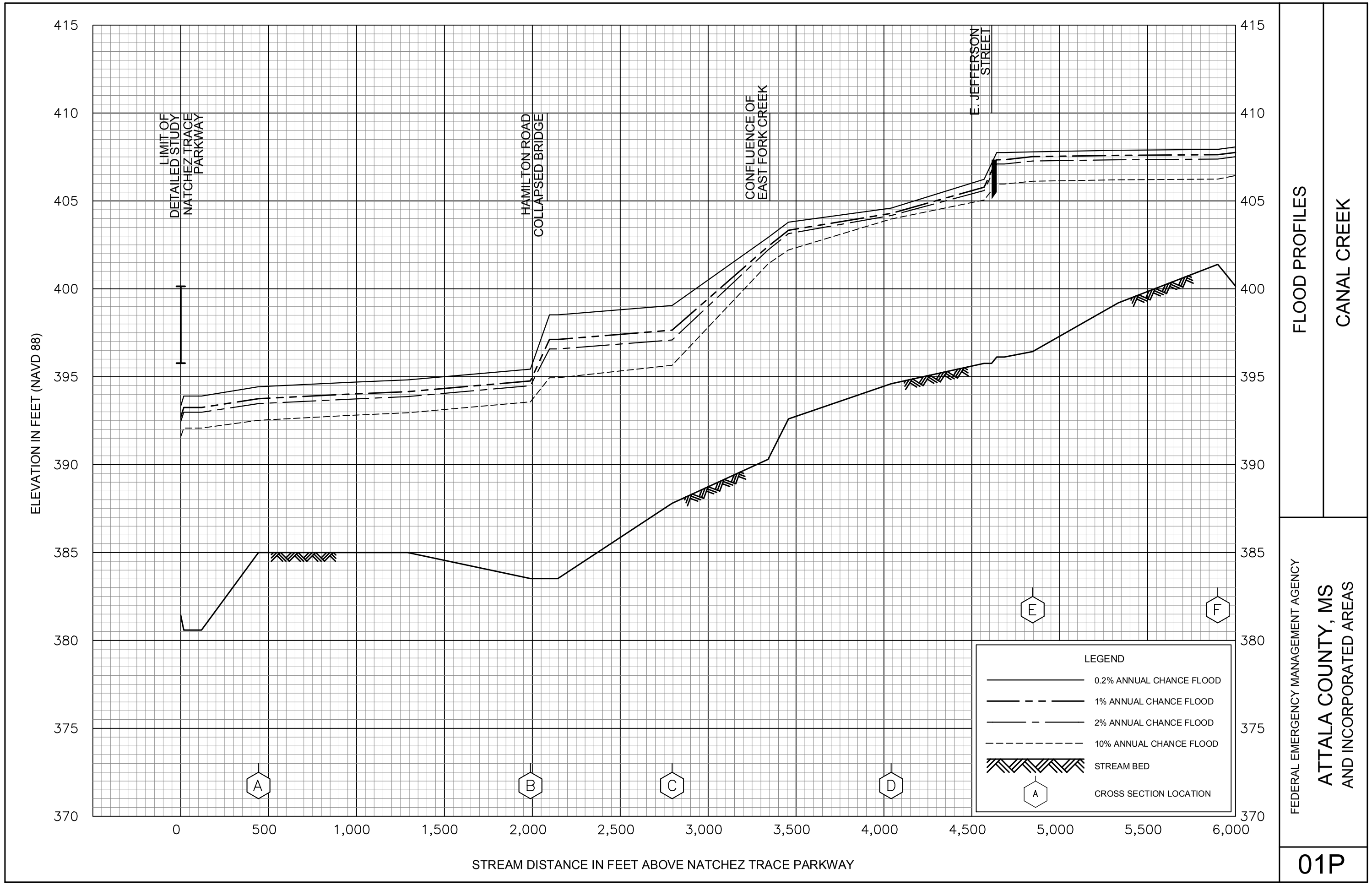
U.S. Census Bureau, Website–2008 Population Estimate, March 9, 2010.

U.S. Census Bureau, Website–2008 Economic Fact Sheet, October 14, 2008.

U.S. Deparment of the Interior, Geological Survey, 7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 10 feet: Durant, Mississippi, 1964; Ethel North, Mississippi, 1964; Ethel SE, Mississippi, 1972; Ethel South, Mississippi, 1972; French Camp, Mississippi, 1966; Four Corners, Mississippi, 1989; Goodman, Mississippi, 1964; Hesterville, Mississippi, 1964; Joseph, Mississippi, 1989; Kosciusko, Mississippi, 1964; Kosciusko NE, Mississippi, 1964; McAdams, Mississippi, 1964; McCool, Mississippi, 1972; Newport, Mississippi, 1964; Poplar Creek, Mississippi, 1966; Vaiden, Mississippi, 1966; Weir, Mississippi, 1966; Zama, Mississippi, 1989.

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

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



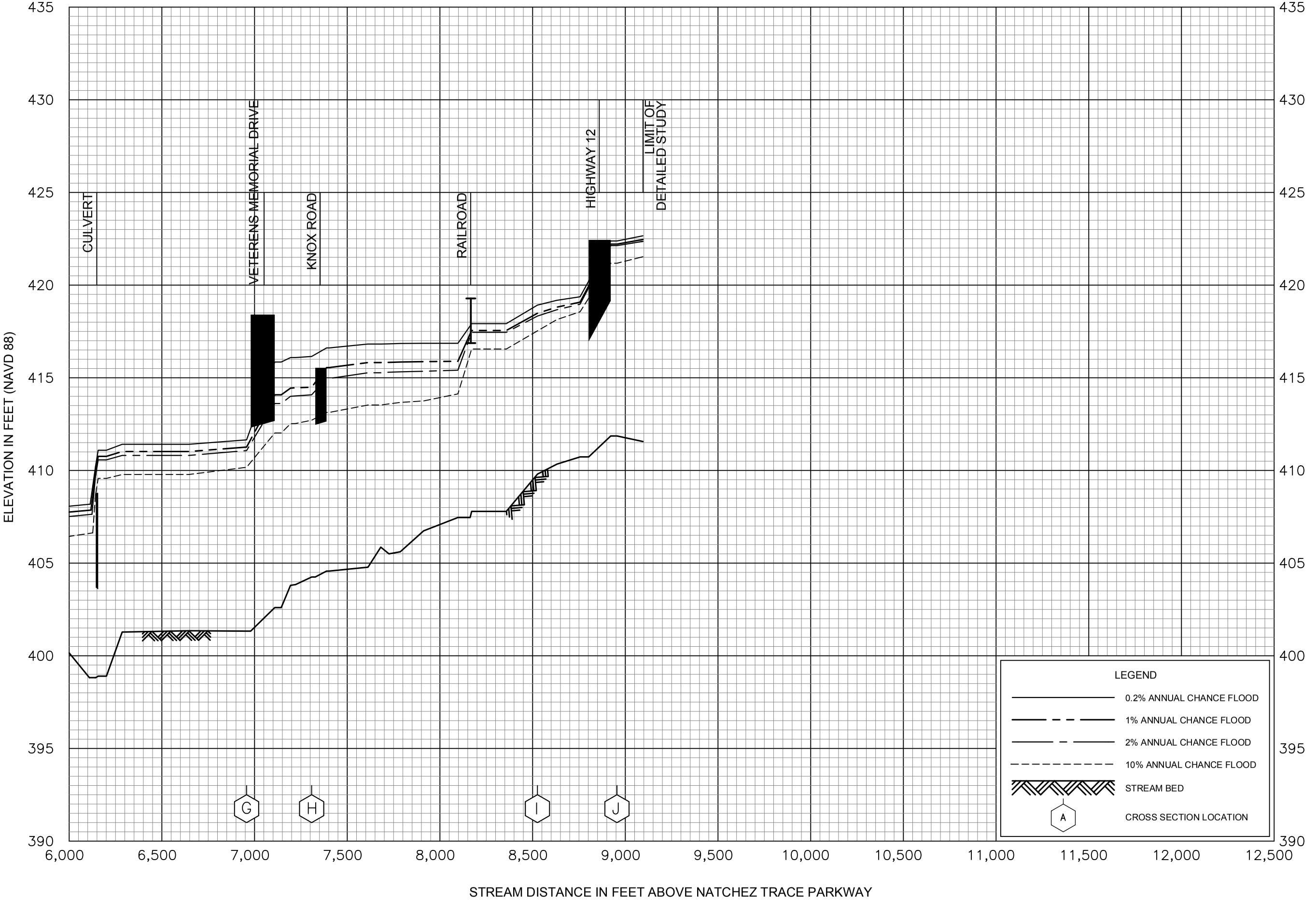
FLOOD PROFILES

CANAL CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ATTALA COUNTY, MS
AND INCORPORATED AREAS

01P



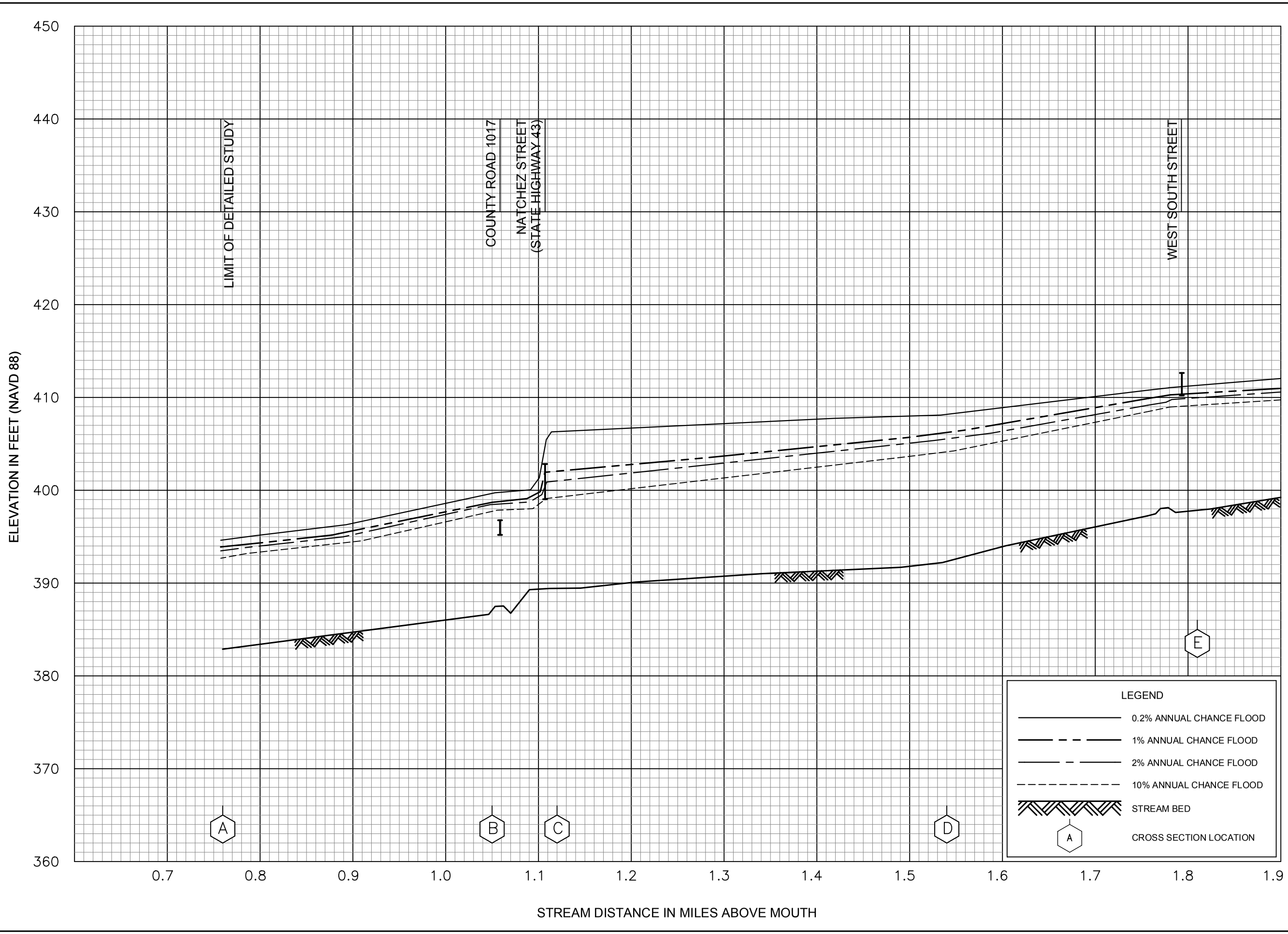
FLOOD PROFILES

CANAL CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ATTALA COUNTY, MS
AND INCORPORATED AREAS

02P



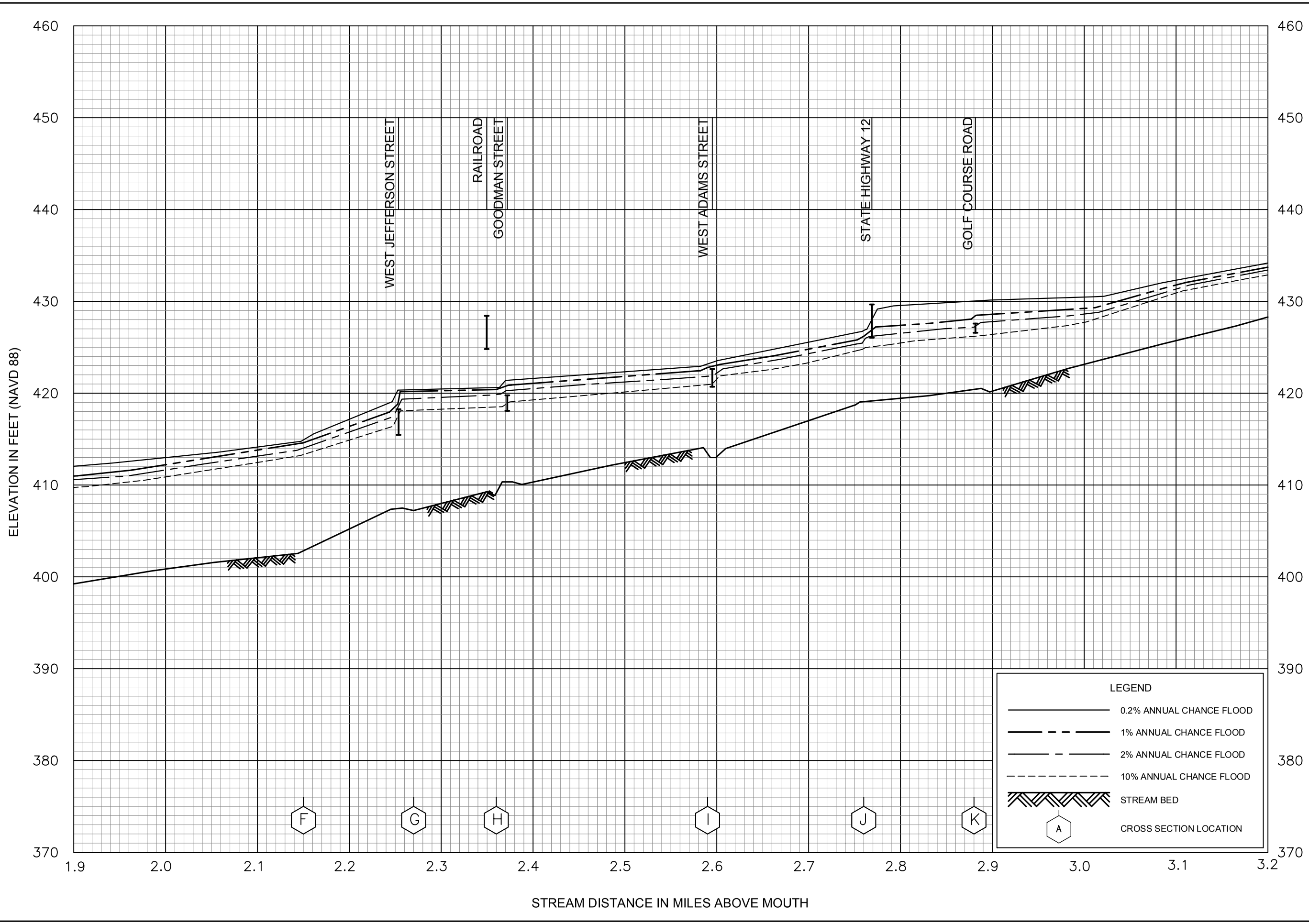
FLOOD PROFILES

DYE DITCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

ATTALA COUNTY, MS
AND INCORPORATED AREAS

03P



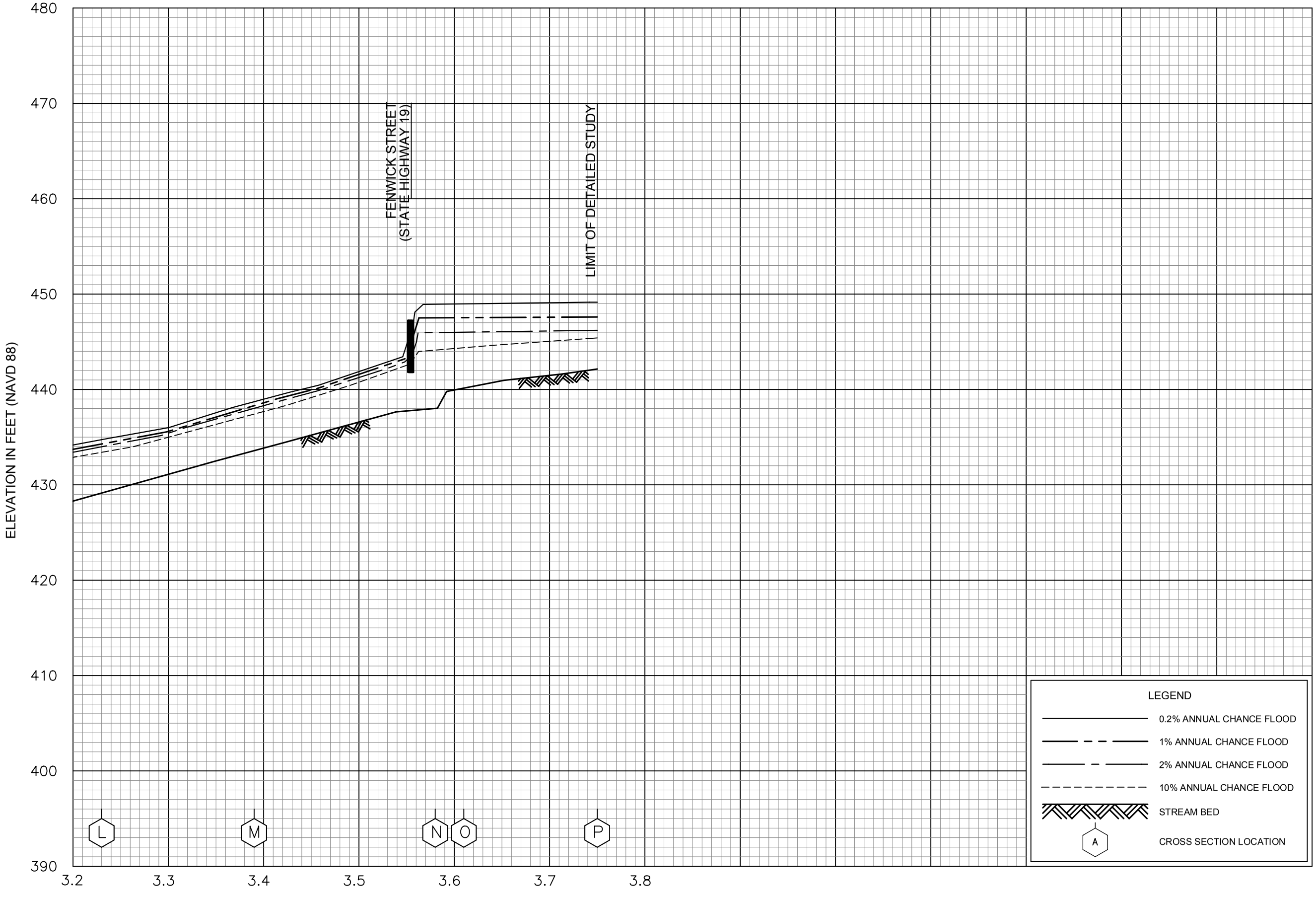
FLOOD PROFILES

DYE DITCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

ATTALA COUNTY, MS
AND INCORPORATED AREAS

04P



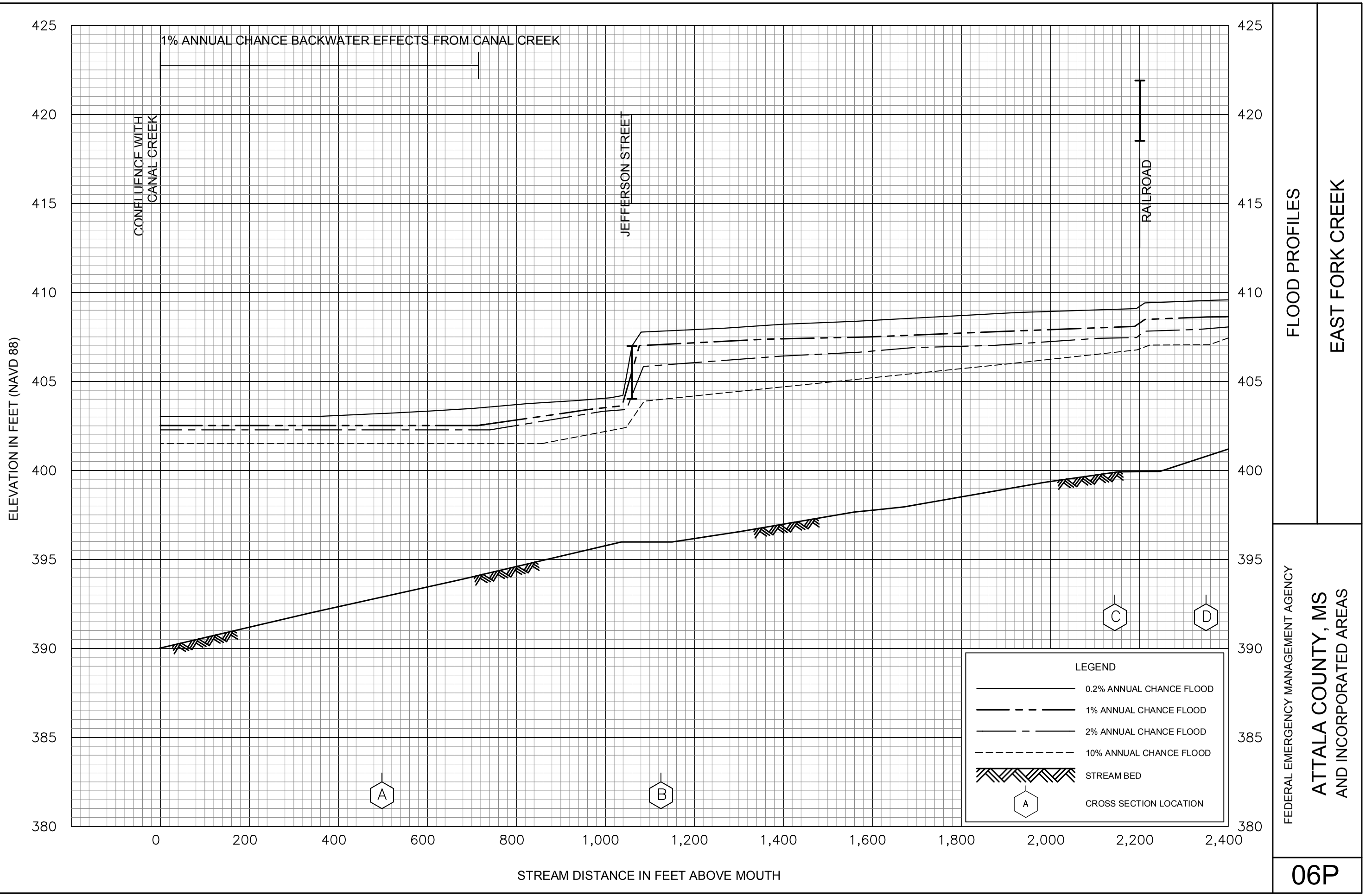
FLOOD PROFILES

DYE DITCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

ATTALA COUNTY, MS
AND INCORPORATED AREAS

05P



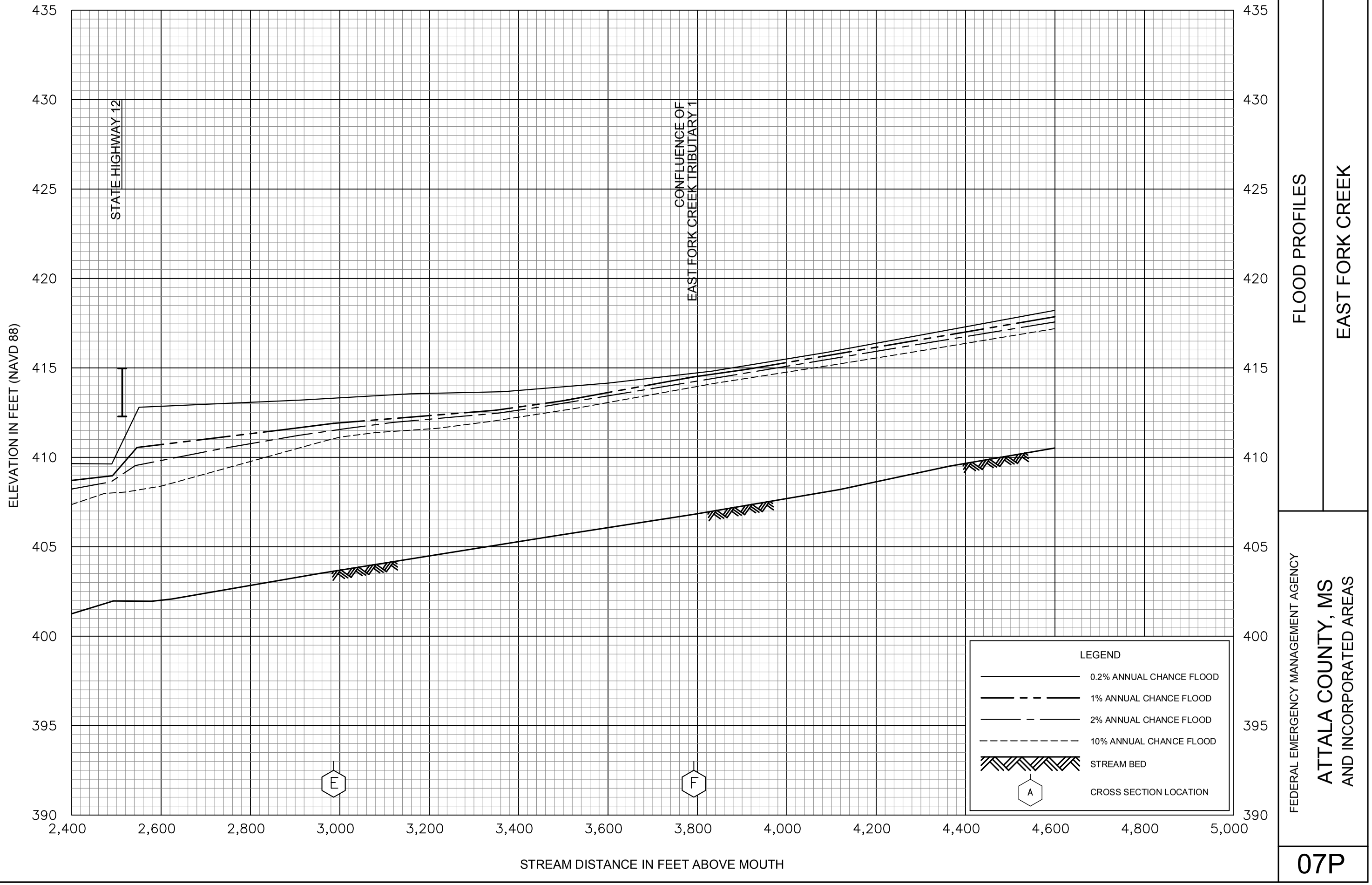
FLOOD PROFILES

EAST FORK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ATTALA COUNTY, MS
AND INCORPORATED AREAS

06P



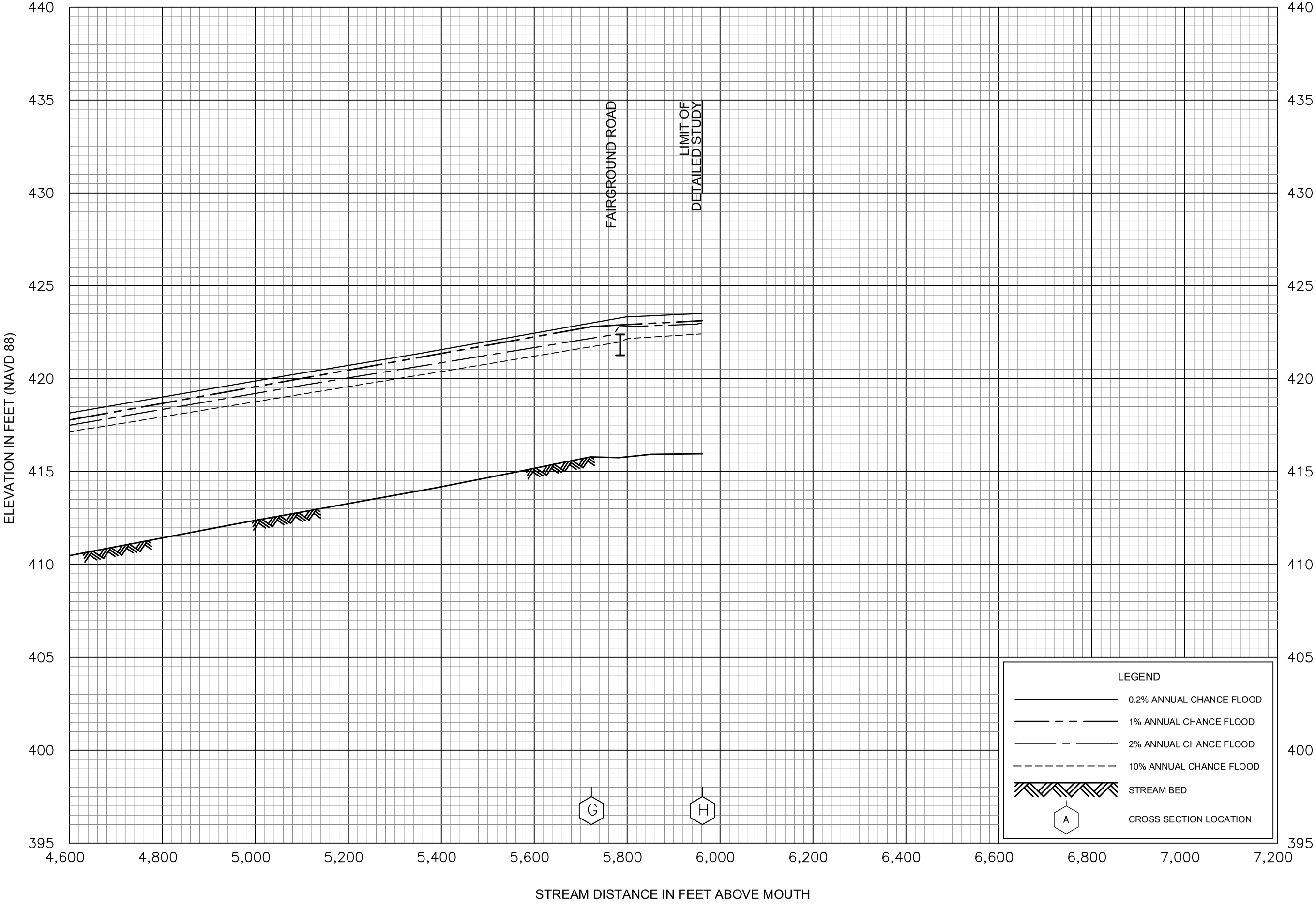
FLOOD PROFILES

EAST FORK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ATTALA COUNTY, MS
AND INCORPORATED AREAS

07P



FLOOD PROFILES

EAST FORK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ATTALA COUNTY, MS
AND INCORPORATED AREAS

08P

1% ANNUAL CHANCE BACKWATER EFFECTS FROM EAST FORK CREEK

CONFLUENCE WITH EAST FORK CREEK

LIMIT OF DETAILED STUDY

ELEVATION IN FEET (NAVD 88)

440
435
430
425
420
415
410
405
400
395

0 100 200 300 400 500 600 700 800 900 1,000 1,100 1,200

STREAM DISTANCE IN FEET ABOVE MOUTH

A

LEGEND

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

FLOOD PROFILES

EAST FORK CREEK TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

ATTALA COUNTY, MS
AND INCORPORATED AREAS

09P