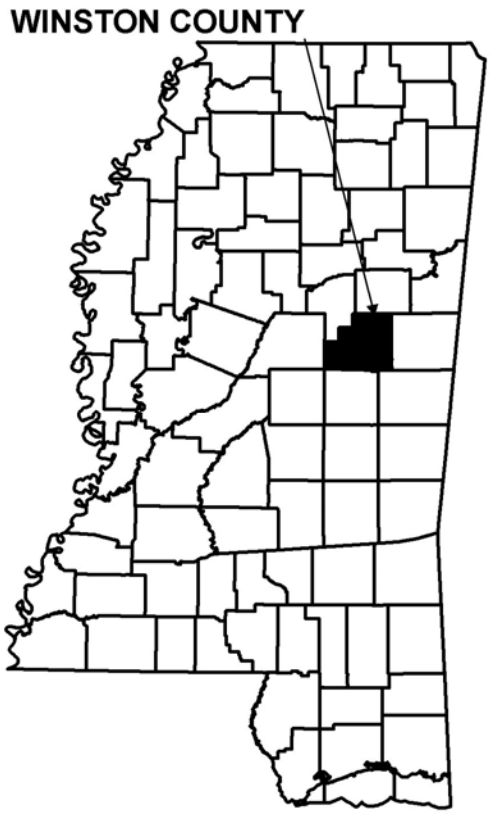
FLOOD INSURANCE STUDY

WINSTON COUNTY, MISSISSIPPI
AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
LOUISVILLE, CITY OF	280185
NOXAPATER, TOWN OF[1]	280400
WINSTON COUNTY (UNINCORPORATED AREAS)	280308

[1]Non-floodprone community



PRELIMINARY

FEB 17 2009

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
28159CV000A

NOTICE TO
FLOOD INSURANCE STUDY USERS

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

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

Initial Countywide FIS Effective Date: Month, Day, and Year

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FLOOD INSURANCE STUDY
WINSTON 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 Winston County, Mississippi, including the City of Louisville, Town of Noxapater, and unincorporated areas of Winston County (hereinafter referred to collectively as Winston County).

This FIS aids in 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 in the community that will be used to establish actuarial flood insurance rates. This information will also be used by Winston 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 Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

This FIS was prepared to include the unincorporated areas of, and incorporated communities within, Winston County in a countywide format. Information on the authority and acknowledgements for each jurisdiction included in this countywide FIS, as compiled from their previously printed FIS reports, is shown below.

Louisville, City of:	The hydrologic and hydraulic analyses for the December 1977 FIS report were performed by Michael Baker, Jr., Inc., for the Federal Insurance Administration (FIA), under Contract No. H-3800. That study, which was completed in April 1977, and covered all flooding sources affecting the City of Louisville (Reference 1).

The authority and acknowledgments for the Town of Noxapater, Winston County unincorporated areas are not available because no FIS reports were published for those communities.

For this countywide FIS, new hydrologic and hydraulic analyses were prepared by Watershed Concepts, a division of HSMM AECOM for FEMA, under Contract No. EMA-2006-CA-5617. This study was completed in September, 2008.

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

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

1.3 Coordination

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

The dates of the initial and final CCO meetings held for the communities within the boundaries of Winston County are shown in Table 1, "CCO Meeting Dates."

Table 1. CCO Meeting Dates

Community Name	Initial CCO Date	Final CCO Date
City of Louisville	March 6, 1975	April 6, 1977
Winston County (Countywide)	*	*

*Data not available

For this countywide FIS, an initial CCO meeting was held with the representatives from FEMA, the impacted communities, and the study contractor on December 12, 2006. A final meeting, the Preliminary DFIRM Community Coordination (PDCC) was held on Month DD, YEAR to review the results of this study.

2.0 AREA STUDIED

2.1 Scope of Study

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

No new detailed studies have been performed as part of this new countywide study.

Limited detail analyses were performed on Murphy Creek Tributary 17.

For this countywide study, limits of new limited detailed study streams are shown in Table 2. "Scope of Study."

Table 2. Scope of Study

Stream	Limits of Revised or New Limited Detail Study
Murphy Creek Tributary 17	From the confluence with Murphy Creek to a point approximately 0.3 mile upstream of McCullough Road

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, Winston County, and the Study Contractor.

Floodplain Boundaries of streams that have been previously studied by detailed methods were redelineated based on more detailed and up-to-date topographic mapping. Streams that were redelineated include Hughes Creek, Hughes Creek Tributary 1, Hughes Creek Tributary 2, Hughes Creek Tributary 3, Stream 1, Stream 2, Stream 2 Tributary 1, Town Creek, Town Creek Tributary 1, Town Creek Tributary 2, Town Creek Tributary 3, and Town Creek Tributary 4.

2.2 Community Description

Winston County, and its county seat, the City of Louisville, are located in east-central Mississippi. The county is bounded on the north by Choctaw and Oktibbeha Counties, on the east by Noxubee County, on the south by Leake, Neshoba, and Kemper Counties, and on the west by Attala County.

The floodplains of Winston County are located in the northeastern prairie section of the state. Soils consist mainly of a silty clay layer approximately 4 inches thick underlain by clay and chalk formations. Vegetation throughout the area consists of moderate stands of a large variety of hardwoods. Along stream banks the vegetative cover includes willow trees, brush, and many instances of thick grasses.

The population of Winston County was 19,708 according to the year 2006 census. The land area of Winston County covers approximately 610 square miles or 1,580 square kilometers (Reference 2).

The climate of Winston County is characterized by long, hot summers, and short mild winters. Temperatures average 31.3 degrees Fahrenheit (^{O}F) in January and 89.5°F in July. Annual precipitation over the study area averages 58.86 inches. The rainfall is evenly distributed throughout the year. The wettest month of the year is March with an average rainfall of 6.57 inches (Reference 3).

2.3 Principal Flood Problems

Intense seasonal rains and occasional tropical storms or hurricanes are the principal causes of flooding in the City of Louisville, and Winston County unincorporated areas. Low-lying areas

along Town and Hughes Creeks are subject to periodic flooding caused by the overflow of these streams. This flooding usually occurs during intense seasonal rains. Both of these drainage systems are significantly urbanized, which adds to the flooding problem. The remaining streams have experienced flooding that is attributed to rapid runoff from small watersheds.

Factors that may retard the normal runoff of heavy rainfall are undersized channels and bridges or culverts, which may have either inadequate capacity or be subject to constriction due to debris collection or siltation. An analysis of conditions immediately north of Vance Street on Hughes Creek Tributary 2 indicated that the culvert under the junior high school athletic field is not sufficient to carry the 2-, 1-, and 0.2-percent annual chance floods, thereby causing sheet flow conditions (Reference 1).

2.4 Flood Protection Measures

Flood protection measures that have been undertaken in Louisville consist of channel improvements (by either excavating or paving) and replacement of inadequate culverts and bridges (Reference 1).

3.0 ENGINEERING METHODS

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

3.1 Hydrologic Analyses

Pre-countywide Analyses

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

For the December 1977 City of Louisville FIS, the 10-, 2-, 1-, and 0.2-percent-annual-chance flood peak discharges on Hughes Creek, Hughes Creek Tributary 1, Hughes Creek Tributary 2, Hughes Creek Tributary 3, Stream 1, Stream 2, Stream 2 Tributary 1, Town Creek, Town Creek Tributary 1, Town Creek Tributary 2, Town Creek Tributary 3, and Town Creek Tributary 4 were estimated using regional methods described in the USGS report titled "Flood Frequency of Mississippi Streams" (Reference 4). This report is applicable to un-

urbanized drainage basins in the State of Mississippi that are larger than 0.04 square mile but less than 6,630 square miles. This technique for estimating future flood magnitudes was developed using synthetic records of annual flood peaks for 89 drainage basins and recorded annual peak flow data for 221 stream gaging stations. The length of record for 82 of the 221 stations with actual records is 25 years or more. Multiple regression analyses were used to relate flood frequency to basin characteristics, the most significant being drainage area, slope, and length. Because the regional analysis is applicable only to un-urbanized basins, adjustment factors were applied to include consideration for urbanization in many stream basins in the study area (Reference 1).

A summary of the drainage area-peak discharge relationships for the streams studied by detailed methods is shown in Table 3, "Summary of Discharges."

Countywide Analyses

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

Discharges for the 1-percent-annual-chance recurrence interval for all new limited detail and approximate study streams in Winston County were determined using the Rural-East Region USGS regression equations for Mississippi as described in the USGS Water-Resources Investigations report 94-4002 (Reference 5).

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.

TABLE 3 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. mi.)	PEAK DISCHARGES (cfs) 10-Percent Chance	2-Percent Chance	1-Percent Chance	0.2-Percent Chance
HUGHES CREEK					
Approximately 3,000 feet downstream of the confluence of Hughes Creek Tributary 1	3.86	1,790	2,706	3,554	4,814
At Cross Section A	3.84	1,782	2,695	3,539	4,792
At Cross Section B	3.68	1,724	2,602	3,409	4,616
At the confluence of Hughes Creek Tributary 1	3.45	1,639	2,468	3,222	4,362

TABLE 3 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. mi.)	PEAK DISCHARGES (cfs) 10-Percent Chance	2-Percent Chance	1-Percent Chance	0.2-Percent Chance
HUGHES CREEK					
At State highway 15S	2.66	1,336	1,994	2,567	3,473
At Cross Section G	2.47	1,261	1,876	2,406	3,254
At Baremore Road	2.26	1,176	1,744	2,226	3,010
At the confluence of Hughes Creek Tributaries 2 and 3	1.27	748	1,087	1,345	1,816
At Vance Street	1.11	673	973	1,196	1,613
At Cross Section M	1.03	635	915	1,120	1,511
At State Highway 25	0.91	576	827	1,005	1,355
At State Highway 14	0.75	495	706	849	1,144
HUGHES CREEK TRIBUTARY 1					
At Georgia-Pacific Spur Line	0.68	655	860	978	1,342
At Georgia-Pacific Plant Road	0.65	630	833	946	1,295
At Georgia-Pacific Plant Road	0.59	580	778	880	1,200
At Georgia-Pacific Spur Line	0.48	510	671	756	1,019
At Armstrong Street	0.41	455	600	673	900
At Hemlock Street	0.20	275	360	396	510
At Oak Street	0.17	255	320	351	449
HUGHES CREEK TRIBUTARY 2					
At the confluence of Hughes Creek	0.33	400	514	573	758
At Vance Street	0.28	355	457	507	666
At Cagle Street	0.22	290	385	424	550
HUGHES CREEK TRIBUTARY 3					
At the confluence of Hughes Creek	0.38	440	568	636	848
At Vance Street	0.36	415	547	611	812
At West Street	0.33	400	514	573	758
At State Highway 14	0.27	345	445	494	647
STREAM 1					
Approximately 100 feet downstream Files Road	1.42	732	1,084	1,251	1,840
At Cross Section B	1.31	690	1,018	1,174	1,721
At Cross Section C	1.19	667	977	1,123	1,634
At Smyth Road	1.11	630	919	1,056	1,531
At Cross Section E	0.96	604	873	989	1,417
At Cross Section F	0.83	568	814	912	1,293

TABLE 3 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. mi.)	PEAK DISCHARGES (cfs) 10-Percent Chance	2-Percent Chance	1-Percent Chance	0.2-Percent Chance
STREAM 1					
At Cross Section G	0.45	380	530	573	785
STREAM 2					
Approximately 425 feet downstream of the confluence of Stream 2 Tributary 1	0.98	517	756	887	1,296
At Cross Section B	0.54	307	442	515	741
At Cross Section C	0.49	304	433	499	709
At Cross Section D	0.36	245	345	395	554
At Cross Section F	0.17	128	175	200	273
STREAM 2 TRIBUTARY 1					
At the confluence of Stream 2	0.43	320	447	522	702
At Cross Section A	0.39	297	413	479	645
At Cross Section B	0.27	222	305	348	467
TOWN CREEK					
Approximately 3,300 feet downstream of the confluence of Town Creek Tributary 1	4.33	2,250	3,219	3,846	5,796
At the Confluence of Town Creek Tributary 1	3.99	2,150	3,037	3,621	5,433
At State Highway 14	3.33	1,850	2,750	3,250	4,800
At the Confluence of Town Creek Tributary 3	3.23	1,800	2,612	3,097	4,598
At East Ridge Drive	2.29	1,500	2,100	2,500	3,500
At State Highway 25	2.00	1,299	1,856	2,172	3,148
At the Confluence of Town Creek Tributary 4	1.35	1,025	1,400	1,600	2,250
At Ivy Avenue	0.96	815	1,150	1,250	1,700
At Airport Road	0.67	650	851	967	1,327
At Cross Section Q	0.37	435	590	640	850
TOWN CREEK TRIBUTARY 1					
At the Confluence of Town Creek	0.32	254	351	403	542
At Cross Section B	0.10	102	135	146	195

TABLE 3 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. mi.)	PEAK DISCHARGES (cfs) 10-Percent Chance	2-Percent Chance	1-Percent Chance	0.2-Percent Chance
TOWN CREEK TRIBUTARY 2					
At the Confluence of Town Creek	0.22	189	258	291	390
At Cross Section B	0.13	125	168	184	246
At Cross Section C	0.11	112	152	167	224
TOWN CREEK TRIBUTARY 3					
At the Confluence of Town Creek	0.35	272	378	436	586
At Cross Section A	0.22	182	248	279	375
At Cross Section C	0.10	100	130	145	195
TOWN CREEK TRIBUTARY 4					
At the Confluence of Town Creek	0.59	410	579	688	927
At Adam Allen Drive	0.41	308	430	501	674
At Ivy Drive	0.27	222	305	348	467

3.2 Hydraulic Analyses

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

Pre-Countywide Analyses

For the December 1977 City of Louisville incorporated Areas FIS (Reference 1), the cross sections and structural geometry of the bridges and culverts were obtained by field surveys.

Cross sections of stream channels and bottomlands were field surveyed along with bridge and culvert waterway openings following field reconnaissance by engineers. Several road profiles were obtained from the Mississippi State Highway Department and correlated with field information for use in the study.

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

With stream characteristics determined by field observation, water surface elevations were computed using the HEC-2 step-backwater computer model (Reference 6).

The beginning portion of Hughes Creek Tributary 3 is controlled by Hughes Creek due to the closeness of both streams as they flow almost parallel to their confluence. Thus, the elevations shown in the Flood Profiles (Exhibit 1) for this portion of Hughes Creek Tributary 3 are slightly higher, reflecting the Hughes Creek influence (Reference 1). Starting water-surface elevations for all streams studied in detail were determined by the slope area method.

For the sheet flow area immediately north of Vance Street on Hughes Creek Tributary 2, flood elevations were calculated using hydraulic charts for culverts (Reference 4). These elevations reflect headwaters required to pass the peak discharges at the junior high school athletic field (Reference 1).

Roughness coefficients (Manning's "n") for this study were chosen by engineering judgment and based on field observation of the channel and floodplain areas. Table 4. "Manning's "n" Values for Detailed Study Streams," contains the channel and overbank "n" values for the streams studied by detailed methods.

Table 4. Manning's "n" Values for Detailed Study Streams

Flooding Source	Channel "n"	Overbank "n"
HUGHES CREEK	0.030-0.055	0.075-0.120
HUGHES CREEK TRIBUTARY 1	0.020-0.055	0.075-0.120
HUGHES CREEK TRIBUTARY 2	0.040-0.060	0.080-0.130
HUGHES CREEK TRIBUTARY 3	0.045-0.055	0.080-0.120
STREAM 1	0.055-0.060	0.075-0.140
STREAM 2	0.040-0.050	0.070-0.100
STREAM 2 TRIBUTARY 1	0.050-0.065	0.110-0.135
TOWN CREEK	0.030-0.060	0.075-0.120
TOWN CREEK TRIBUTARY 1	0.045	0.070-0.080
TOWN CREEK TRIBUTARY 2	0.045-0.050	0.075-0.100
TOWN CREEK TRIBUTARY 3	0.045-0.055	0.086-0.090
TOWN CREEK TRIBUTARY 4	0.045-0.060	0.065-0.120

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 (Reference 1).

Countywide Analyses

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

For this countywide study, water-surface profiles were computed for limited detail and approximate study streams through the use of the U.S. Army Corps of Engineers HEC-RAS version 3.1.2 computer program (Reference 7). Water surface profiles were produced for the 1-percent-annual-chance storms for limited detail and approximate studies.

The limited detail and approximate study methodology used Watershed Information SystEm

(WISE) (Reference 8) 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.

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 Winston County are referenced to NAVD88. Ground, structure, and flood elevations may be compared and/or referenced to NGVD29, add -0.08 feet to the NAVD88 elevation. The -0.08 feet value is an average for the entire county. The BFEs shown on the FIRM represent whole-foot rounded values. For example, a BFE of 12.4 feet will appear as 12 feet on the FIRM and 12.6 feet as 13 feet. Users who wish to convert the elevations in this FIS report to NGVD29 should apply the stated conversion factor to elevations shown on the Flood Profiles and supporting data tables in the FIS report, which are shown at a minimum to the nearest 0.1 foot.

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

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

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 for this community. Interested individuals may contact FEMA to access these data.

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 methods, the 1 and 0.2-percent-annual-chance floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at a scale of 1" = 400' with a contour interval of 5 feet.

For each stream studied by approximate methods, 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).

The 1 and 0.2 percent-annual-chance floodplain boundaries are shown on the FIRM (Exhibit 2). On this map, the 1 percent-annual-chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A, AE, and X) and 0.2-percent-annual-chance floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 1 and 0.2 percent-annual-chance floodplain boundaries are close together, only the 1 percent-annual-chance floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations, but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

For the streams studied by approximate methods, only the 1-percent-annual-chance floodplain boundary is shown on the Flood Insurance Rate Map (Exhibit 2).

4.2 Floodways

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

additional floodway studies.

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 5, "Floodway Data." The computed floodways are shown on the FIRM (Exhibit 2). In cases where the floodway and 100-year floodplain boundaries are either close together or collinear, only the floodway boundary is shown.

Encroachment into areas subject to inundation by floodwaters having hazardous velocities aggravates the risk of flood damage and heightens potential flood hazards by further increasing velocities. To reduce the risk of property damage in areas where the stream velocities are high, the community may wish to restrict development in areas outside the floodway.

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

Along streams where floodways have not been computed, the community must ensure that the cumulative effect of development in the floodplain will not cause more than a 1.0-foot increase in the BFEs at any point within the community.

The area between the floodway and 1-percent-annual-chance floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 1-percent-annual-chance flood more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 1, "Floodway Schematic."

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

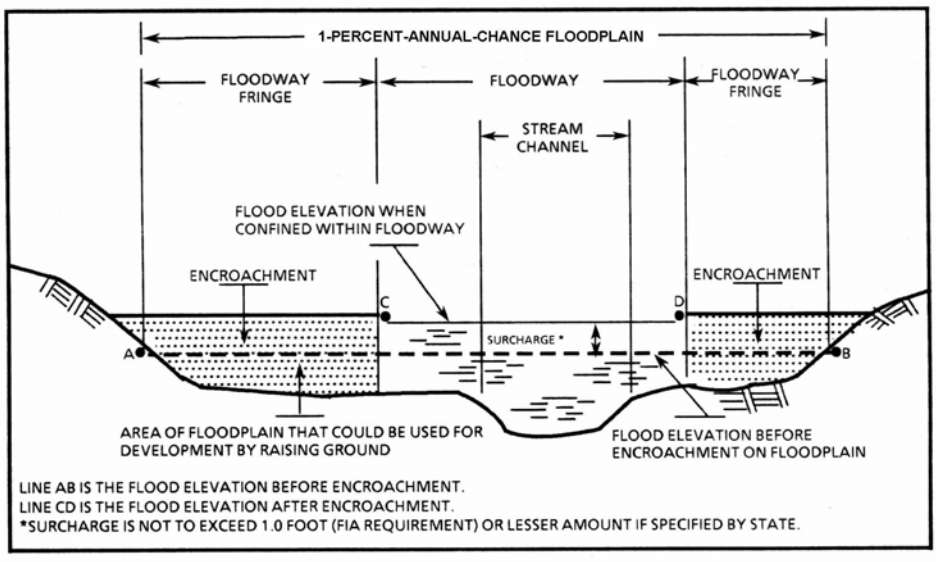

Figure 1. Floodway Schematic

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (NAVD)	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE
HUGHES CREEK								
A	340	262	1,341	2.6	487.8	487.8	488.6	0.8
B	2,290	302	1,659	2.1	490.2	490.2	491.0	0.8
C	3,115	213	1,438	2.2	493.0	493.0	493.5	0.5
D	4,005	190	1,182	2.7	493.5	493.5	494.4	0.9
E	5,135	335	1,254	2.0	497.6	497.6	497.6	0.0
F	5,435	204	993	2.6	497.7	497.7	497.7	0.0
G	6,125	303	1,182	2.0	497.9	497.9	498.4	0.5
H	7,135	377	1,275	1.9	500.2	500.2	500.5	0.3
I	7,665	154	984	2.3	504.3	504.3	505.0	0.7
J	8,947	615	559	2.4	504.6	504.6	505.4	0.8
K	10,425	170	460	2.9	509.2	509.2	509.8	0.6
L	11,053	493	1,928	0.6	513.4	513.4	513.5	0.1
M	11,715	160	333	3.4	514.9	514.9	515.2	0.3
N	13,155	229	793	1.4	518.6	518.6	519.6	1.0
O	13,498	31	236	4.3	522.4	522.4	522.5	0.1
P	13,870	193	741	1.4	522.5	522.5	523.2	0.7
Q	14,242	280	865	1.0	523.9	523.9	524.8	0.9
R	15,012	79	243	3.5	524.7	524.7	525.3	0.6
S	16,812	104	290	2.9	532.9	532.9	533.7	0.8
T	18,712	81	250	3.4	539.8	539.8	540.5	0.7

[1] Stream distance in feet above Limit of Detailed Study approximately 3,000 feet downstream of the confluence of Hughes Creek Tributary 1

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

FLOODWAY DATA

HUGHES CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (NAVD)	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE
HUGHES CREEK TRIBUTARY 1								
A	620	24	125	7.8	491.0	491.0[2]	491.3	0.3
B	930	163	535	1.8	493.5	493.5	493.8	0.3
C	1,180	36	248	3.9	493.8	493.8	494.2	0.4
D	1,900	81	366	2.6	497.6	497.6	498.6	1.0
E	2,500	195	841	1.1	498.4	498.4	499.4	1.0
F	2,700	87	304	2.9	499.1	499.1	499.9	0.8
G	3,480	42	145	6.1	504.3	504.3	504.5	0.2
H	3,820	40	425	1.8	510.7	510.7	511.3	0.6
I	4,257	79	573	1.3	510.7	510.7	511.6	0.9
J	4,517	72	313	2.2	513.2	513.2	513.7	0.5
K	5,385	23	155	4.3	513.8	513.8	514.6	0.8
L	6,365	75	332	1.2	517.7	517.7	518.7	1.0
M	6,741	303	828	0.4	519.6	519.6	520.4	0.8
N	6,907	31	95	3.7	520.0	520.0	520.8	0.8
O	7,068	32	73	4.8	521.9	521.9	522.2	0.3

[1] Stream distance in feet above confluence with Hughes Creek
[2] Elevation computed without consideration of backwater effects from Hughes Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

FLOODWAY DATA

HUGHES CREEK TRIBUTARY 1

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (NAVD)	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE
HUGHES CREEK TRIBUTARY 2								
A	1,030	79	231	2.2	508.5	508.5	509.5	1.0
B	1,410	32	109	4.7	510.8	510.8	511.7	0.9
C	2,146	155	924	0.5	519.1	519.1	520.1	1.0
D	2,526	109	539	0.8	519.1	519.1	520.1	1.0
E	2,746	39	129	3.3	519.2	519.2	520.2	1.0
F	2,926	169	411	1.0	520.1	520.1	520.8	0.7

[1] Stream distance in feet above confluence with Hughes Creek

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (NAVD)	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE
HUGHES CREEK TRIBUTARY 3								
A	870	91	224	2.8	509.3	507.3[2]	508.3	1.0
B	1,281	138	690	0.9	513.3	512.6[2]	513.6	1.0
C	2,325	99	263	2.2	514.1	514.1	515.1	1.0
D	2,628	27	129	4.4	517.6	517.6	517.8	0.2
E	3,192	24	82	6.0	523.1	523.1	523.2	0.1
F	3,598	25	182	2.7	527.6	527.6	528.3	0.7
G	3,823	32	208	2.4	527.6	527.6	528.6	1.0

[1] Stream distance in feet above confluence with Hughes Creek
[2] Elevation computed without consideration of backwater effects from Hughes Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

FLOODWAY DATA

HUGHES CREEK TRIBUTARY 3

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (NAVD)	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE
STREAM 1								
A	160	139	475	2.6	497.9	497.9	498.9	1.0
B	900	225	852	1.4	498.4	498.4	499.3	0.9
C	2,100	142	349	3.4	503.2	503.2	503.8	0.6
D	3,292	37	238	4.4	511.9	511.9	512.4	0.5
E	4,092	184	627	1.6	512.2	512.2	513.2	1.0
F	5,625	203	715	1.3	518.7	518.7	519.7	1.0
G	6,205	69	217	2.6	521.0	521.0	521.9	0.9
H	6,847	84	201	2.8	525.9	525.9	526.3	0.4

[1] Stream distance in feet above Limit of Detailed Study approximately 100 feet downstream of Files Road

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

FLOODWAY DATA

STREAM 1

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (NAVD)	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE
STREAM 2								
A	200	120	295	3.0	484.5	484.5	485.5	1.0
B	850	40	165	3.1	488.6	488.6	489.4	0.8
C	1,872	126	185	2.7	496.5	496.5	496.7	0.2
D	3,632	31	111	3.6	503.9	503.9	504.9	1.0
E	4,680	58	128	3.1	512.0	512.0	512.7	0.7
F	6,580	30	78	2.6	519.9	519.9	520.9	1.0

[1] Stream distance in feet above Limit of Detailed Study approximately 425 feet downstream of the confluence of Stream 2 Tributary 1

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

FLOODWAY DATA

STREAM 2

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (NAVD)	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE
STREAM 2 TRIBUTARY 1								
A	1,200	92	267	1.8	487.9	487.9	488.9	1.0
B	2,280	64	126	2.8	500.0	500.0	500.1	0.1
C	3,680	64	105	3.3	519.1	519.1	520.0	0.9

[1] Stream distance in feet above confluence with Stream 2

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

FLOODWAY DATA

STREAM 2 TRIBUTARY 1

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (NAVD)	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE
TOWN CREEK								
A	192	728	2,095	1.8	490.9	490.9	491.9	1.0
B	2,392	1,167	2,702	1.3	495.8	495.8	496.4	0.6
C	4,042	177	673	4.8	497.9	497.9	498.7	0.8
D	5,432	340	1,199	2.7	502.6	502.6	502.7	0.1
E	6,082	60	440	7.0	503.4	503.4	504.0	0.6
F	7,882	46	345	9.0	508.6	508.6	508.7	0.1
G	8,509	871	4,385	0.6	509.5	509.5	510.5	1.0
H	9,359	809	1,951	1.3	509.7	509.7	510.6	0.9
I	10,407	873	2,023	1.1	514.3	514.3	514.7	0.4
J	11,707	33	200	8.0	515.4	515.4	515.5	0.1
K	12,630	693	2,509	0.5	520.4	520.4	521.3	0.9
L	12,980	234	656	1.9	520.5	520.5	521.3	0.8
M	13,510	118	424	2.9	521.5	521.5	521.9	0.4
N	14,360	144	291	3.3	523.6	523.6	524.1	0.5
O	14,843	255	1,438	0.7	530.2	530.2	530.7	0.5
P	15,843	100	230	4.2	532.2	532.2	532.3	0.1
Q	17,663	48	141	4.5	537.9	537.9	538.6	0.7

[1] Stream distance in feet above Limit of Detailed Study approximately 3,300 feet downstream of the confluence of Town Creek Tributary 1

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

FLOODWAY DATA

TOWN CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (NAVD)	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE
TOWN CREEK TRIBUTARY 1								
A	1,700	46	138	2.9	503.5	503.5	504.5	1.0
B	3,000	42	107	1.4	507.3	507.3	508.3	1.0

[1] Stream distance in feet above confluence with Town Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

FLOODWAY DATA

TOWN CREEK TRIBUTARY 1

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (NAVD)	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE
TOWN CREEK TRIBUTARY 2								
A	1,225	22	49	5.9	503.7	503.7	503.7	0.0
B	2,345	30	86	2.1	509.6	509.6	510.6	1.0
C	3,695	8	28	6.0	518.8	518.8	519.5	0.7

[1] Stream distance in feet above confluence with Town Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

FLOODWAY DATA

TOWN CREEK TRIBUTARY 2

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (NAVD)	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE
TOWN CREEK TRIBUTARY 3								
A	1,925	60	170	1.6	506.3	506.3	507.3	1.0
B	2,775	74	155	1.8	508.3	508.3	509.3	1.0
C	3,725	68	172	0.8	512.9	512.9	513.9	1.0

[1] Stream distance in feet above confluence with Town Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

FLOODWAY DATA

TOWN CREEK TRIBUTARY 3

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (NAVD)	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE
TOWN CREEK TRIBUTARY 4								
A	800	26	145	4.7	514.4	512.9[2]	513.6	0.7
B	1,184	42	221	3.1	514.4	514.4	515.4	1.0
C	2,109	89	202	2.5	518.9	518.9	518.9	0.0
D	3,309	46	126	4.0	524.3	524.3	525.3	1.0
E	4,095	302	1,507	0.2	530.1	530.1	531.1	1.0
F	4,675	47	155	2.2	530.1	530.1	531.1	1.0

[1] Stream distance in feet above confluence with Town Creek
[2] Elevation computed without consideration of backwater effects from Town Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

FLOODWAY DATA

TOWN CREEK TRIBUTARY 4

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 Flood Insurance Study by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base (1-percent-annual-chance) flood elevations (BFEs) or depths are shown within this zone.

Zone AE

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

Zone X

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

6.0 FLOOD INSURANCE RATE MAP

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

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0. Insurance agents use the zones and BFEs in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols, the 1- and 0.2-percent-annual-chance floodplains, floodways, and the locations of selected cross sections used in the hydraulic analyses and floodway computation. The countywide Flood Insurance Rate Map presents flooding information for the entire geographic area of Winston County. Previously, Flood Insurance Rate Maps were prepared for each incorporated community and the unincorporated areas of the County identified as flood-prone. This countywide Flood Insurance Rate Map also includes flood-hazard information that was presented separately on Flood Boundary and Floodway Maps, where applicable. Historical data relating to the maps prepared for each community are presented in Table 6, “Community Map History.”

COMMUNTIY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
Louisville, City of	June 28, 1974	July 2, 1976	June 15, 1978	None
Noxapater, Town of[1]	None	None	None	None
Winston County (Unincorporated Areas)	December 2, 1977	None	August 19, 1985	None

[1]Non-floodprone community

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS
AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

7.0 OTHER STUDIES

The FIS published for the City of Louisville (Reference 1), and Flood Insurance Rate Maps Choctaw Oktibbeha, Noxubee, Leake, Neshoba, Kemper, and Attala Counties (References 9-15) are in agreement with this study.

Information pertaining to revised and unrevised flood hazards for each jurisdiction within Winston County has been compiled into this FIS. Therefore, this FIS report supersedes or is compatible with all previously printed FIS reports, FIRMs, and Flood Hazard Boundary Maps (FBFMs) for all jurisdictions within Winston 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 FIS can be obtained by contacting FEMA, Federal Insurance and Mitigation Administration, Koger Center - Rutgers Building, 3003 Chamblee Tucker Road, Atlanta, Georgia 30341.

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

9.0 BIBLIOGRAPHY AND REFERENCES

1. Federal Emergency Management Agency, Flood Insurance Study, City of Louisville, Winston County, Mississippi Unincorporated Areas, December 1977.

2. U.S. Census Bureau. http://www.census.gov/. Accessed August 20, 2008.

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

5. 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.

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

7. U.S. Army Corps of Engineers Hydrologic Engineering Center, HEC-RAS River Analysis System User's Manual, Version 3.1.2, April 2004.

8. Watershed Concepts, a Division of HSMM AECOM, Watershed Information SystEm Version 3.1.1, Greensboro, NC, July 2008.

9. Federal Emergency Management Agency, Flood Insurance Rate Map, Choctaw County, Unincorporated and Incorporated Areas, Mississippi, September 2007.

10. Federal Emergency Management Agency, Flood Insurance Rate Map, Oktibbeha County, Unincorporated and Incorporated Areas, Mississippi, December 2008.

11. Federal Emergency Management Agency, Flood Insurance Rate Map, Noxubee County, Unincorporated and Incorporated Areas, Mississippi, December 2008.

12. Federal Emergency Management Agency, Flood Insurance Rate Map, Leake County, Unincorporated Areas, Mississippi, September 15, 1989.

13. Federal Emergency Management Agency, Flood Insurance Rate Map, Neshoba County, Unincorporated and Incorporated Areas, Mississippi, December 2008.

14. Federal Emergency Management Agency, Flood Insurance Rate Map, Kemper County, Unincorporated and Incorporated Areas, Mississippi, September 5, 2007.

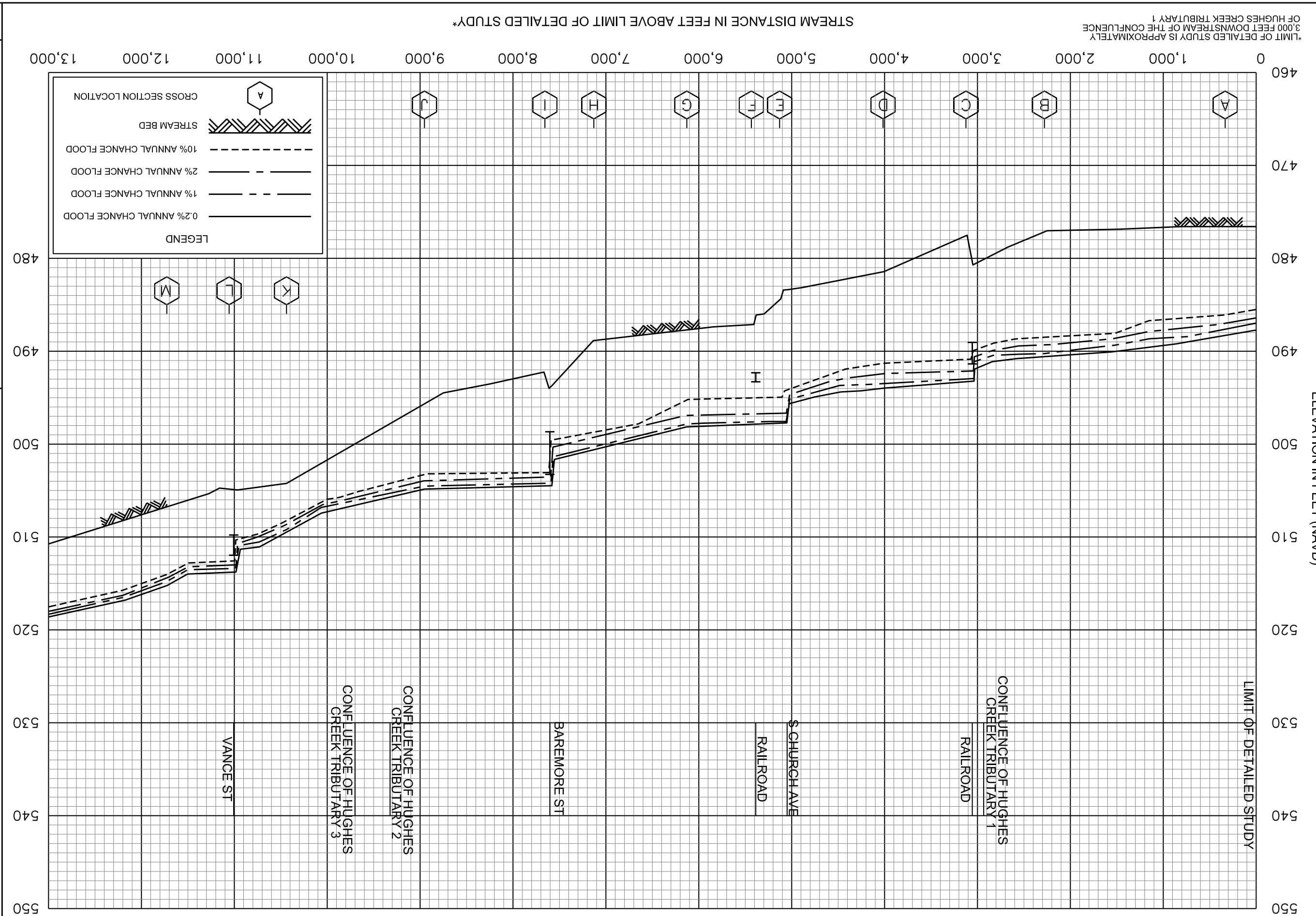
15. Federal Emergency Management Agency, Flood Insurance Rate Map, Attala County, Unincorporated Areas, Mississippi, June 11, 1988.

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS
AND INCORPORATED AREAS

FLOOD PROFILES

HUGHES CREEK



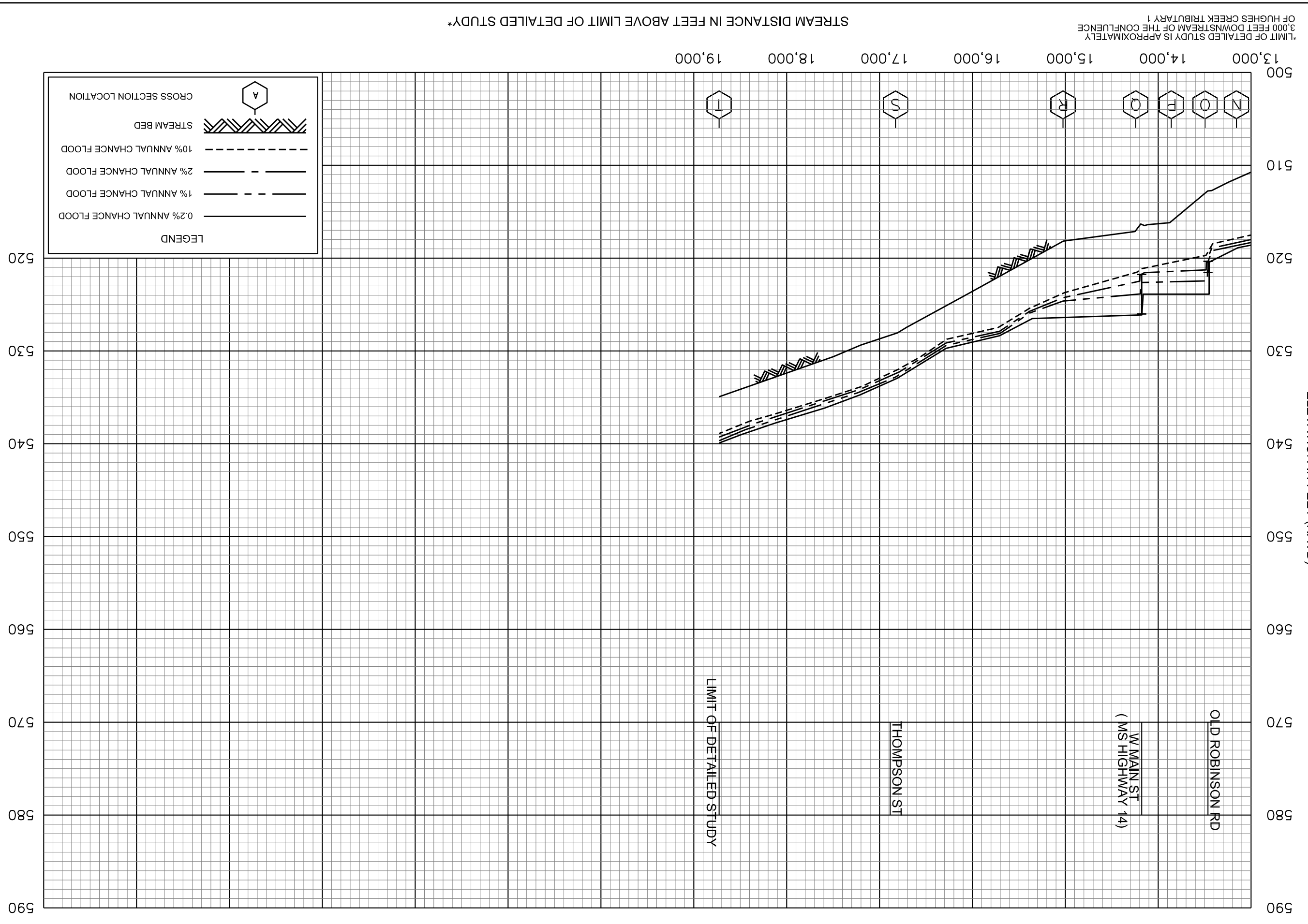
FEDERAL EMERGENCY MANAGEMENT AGENCY

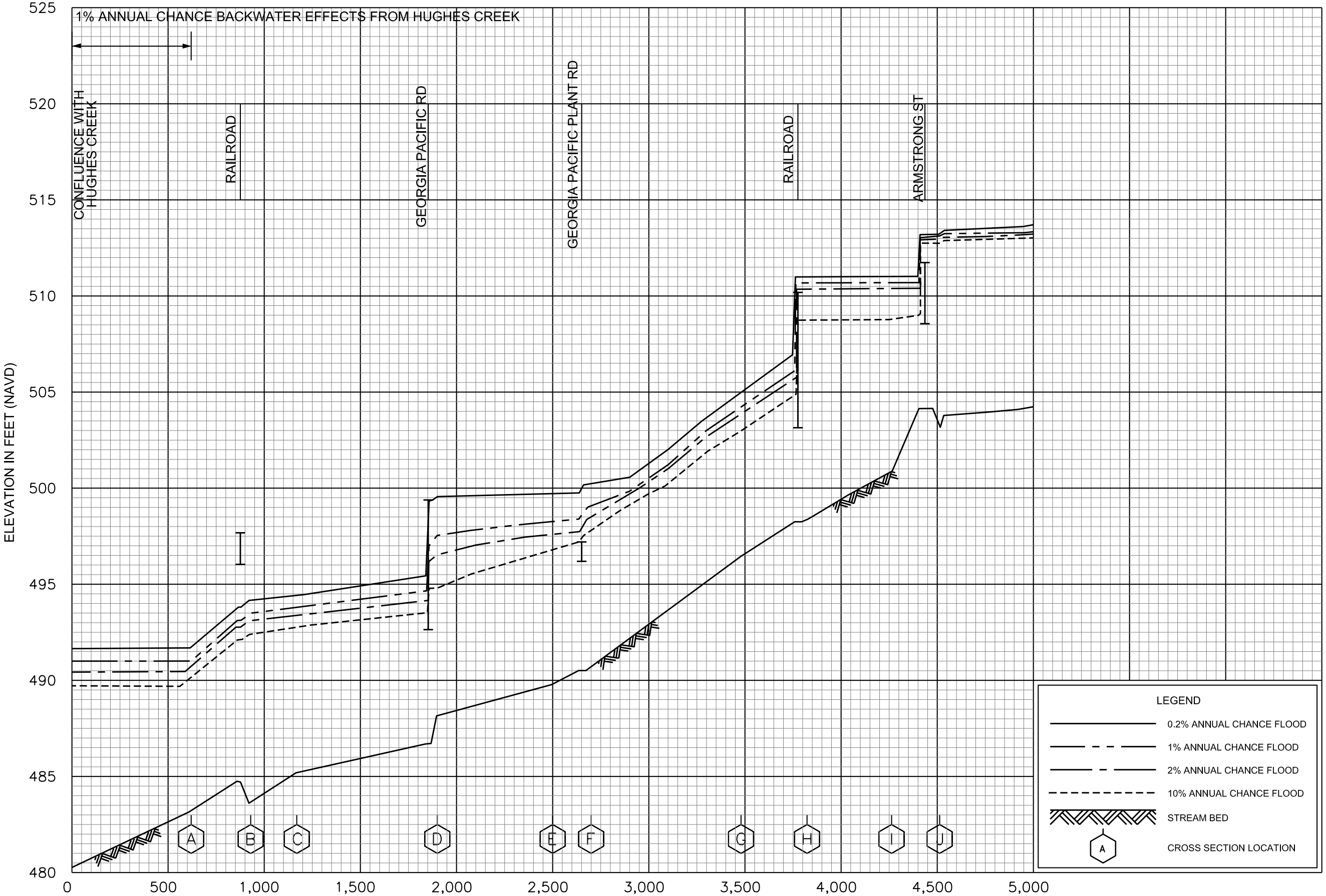
WINSTON COUNTY, MS
AND INCORPORATED AREAS

FLOOD PROFILES

HUGHES CREEK

02P





FLOOD PROFILES

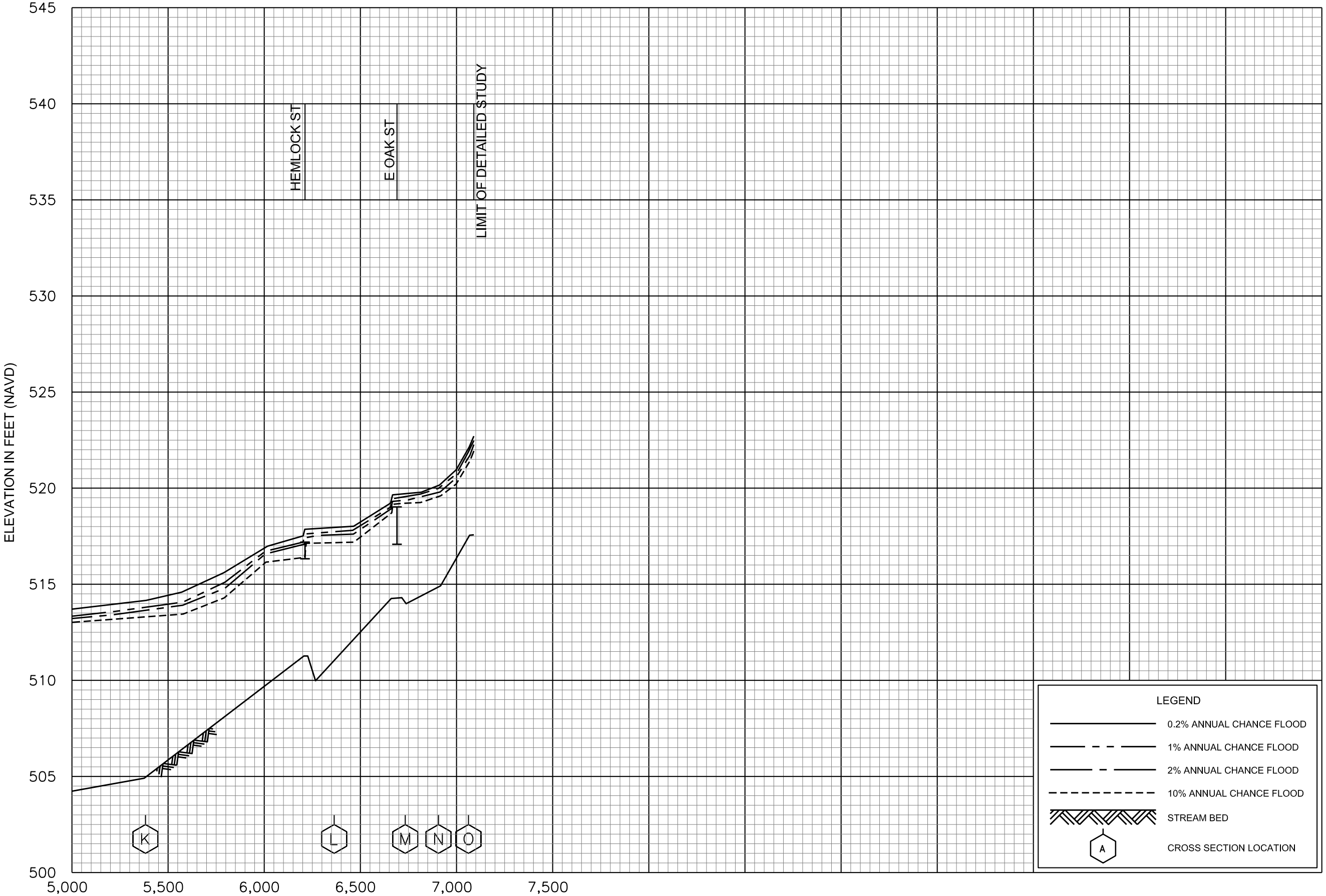
HUGHES CREEK TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

03P



FLOOD PROFILES

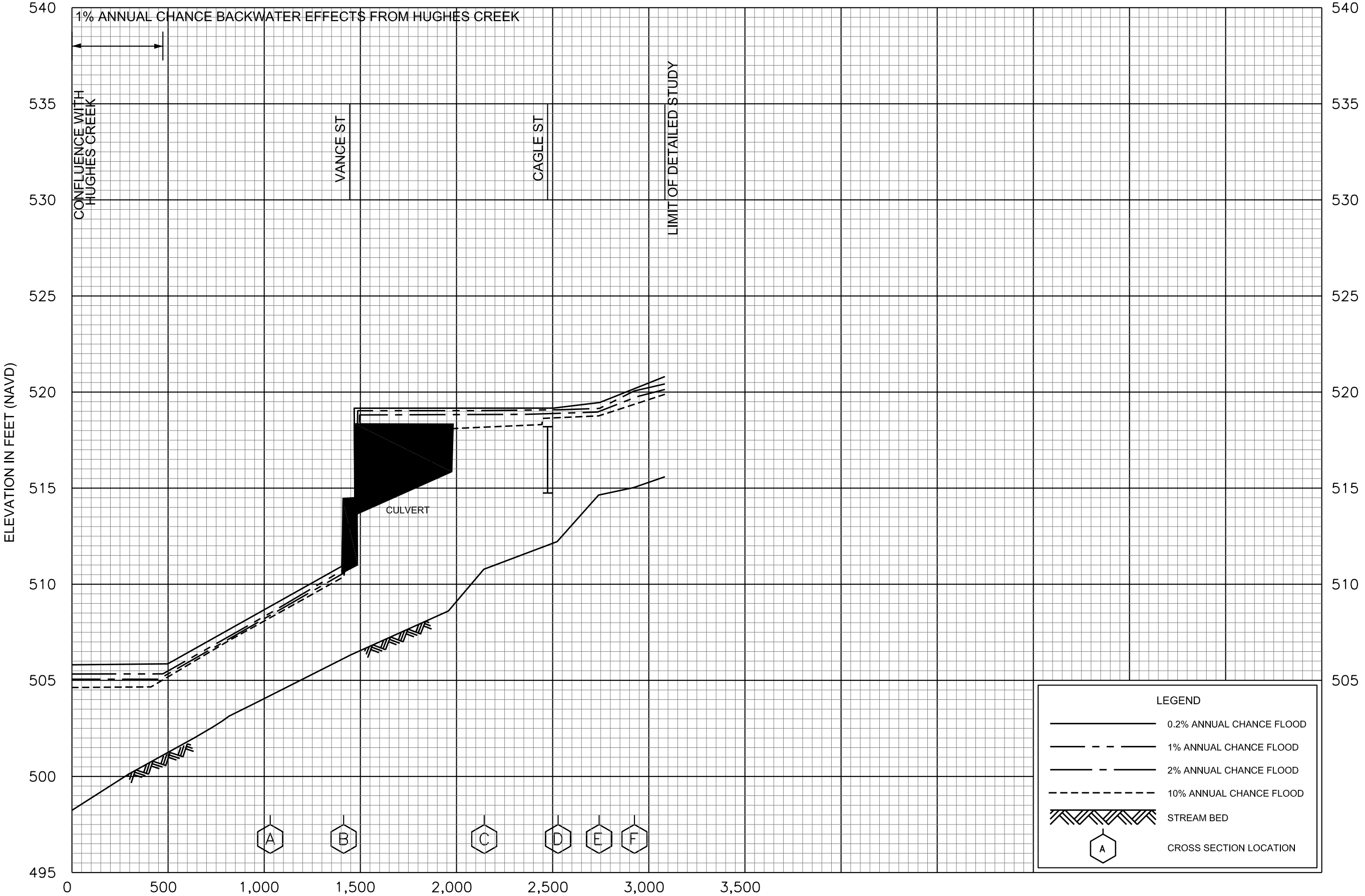
HUGHES CREEK TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

04P



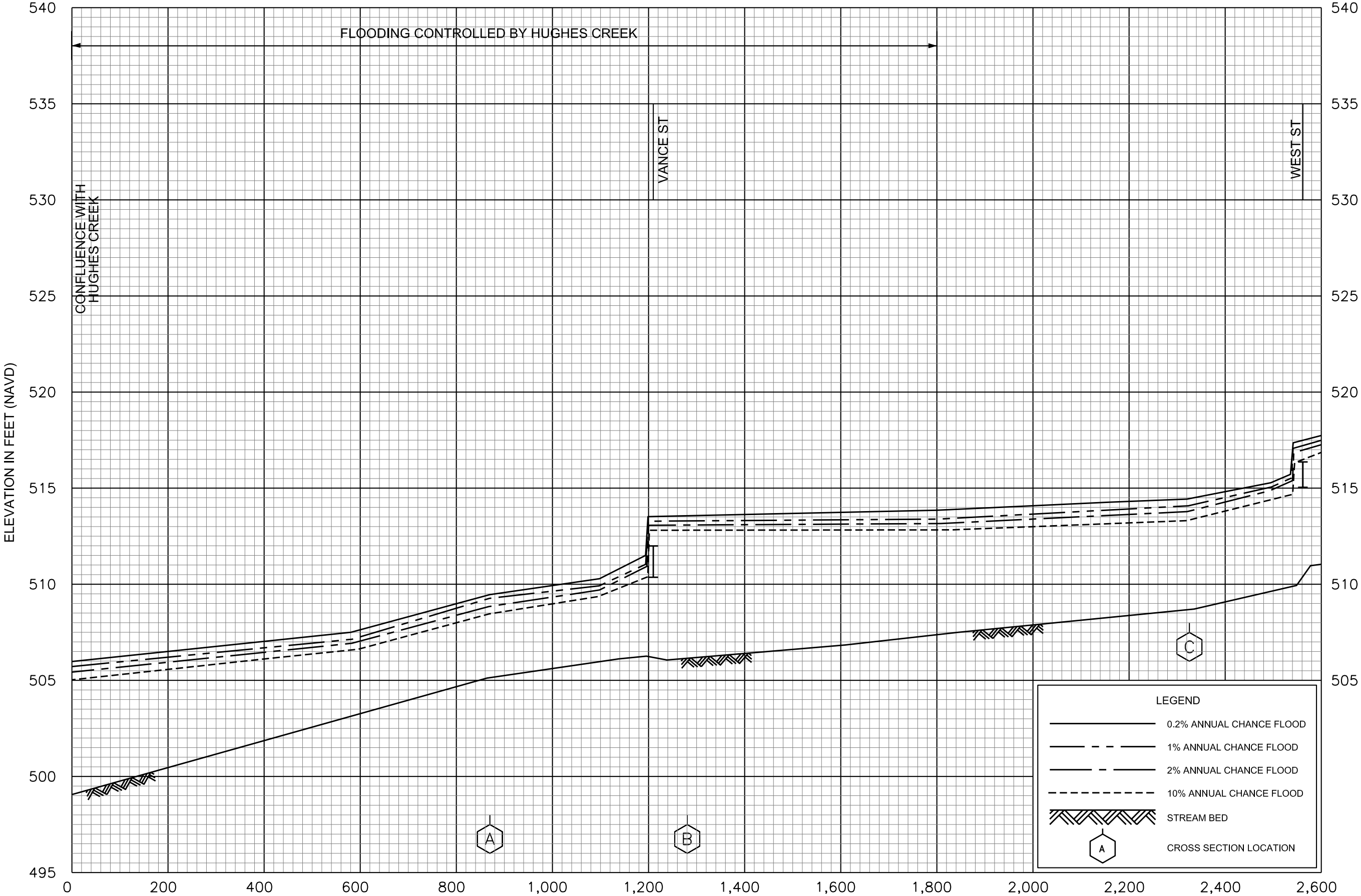
FLOOD PROFILES

HUGHES CREEK TRIBUTARY 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS
AND INCORPORATED AREAS

05P



FLOOD PROFILES

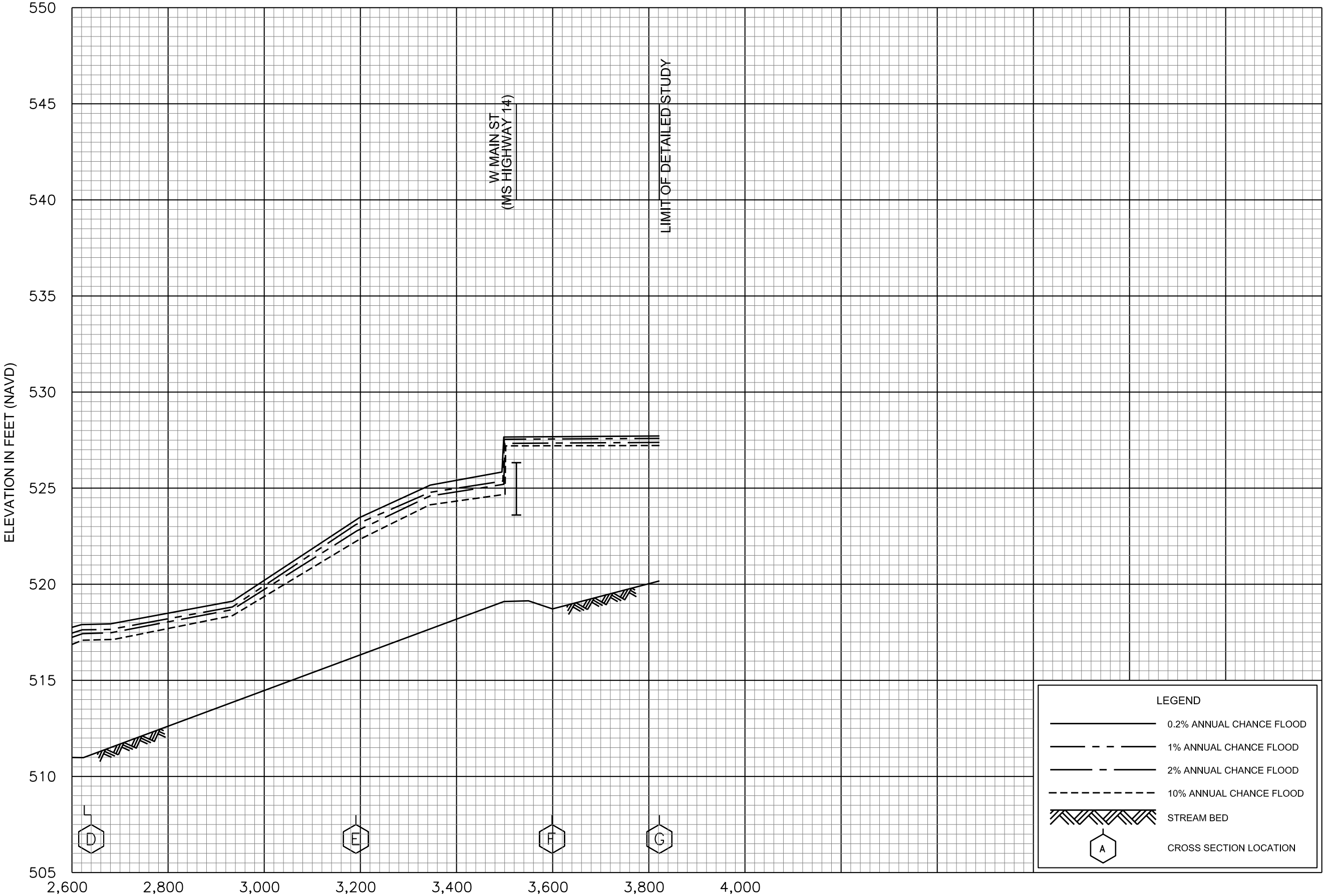
HUGHES CREEK TRIBUTARY 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

06P



FLOOD PROFILES

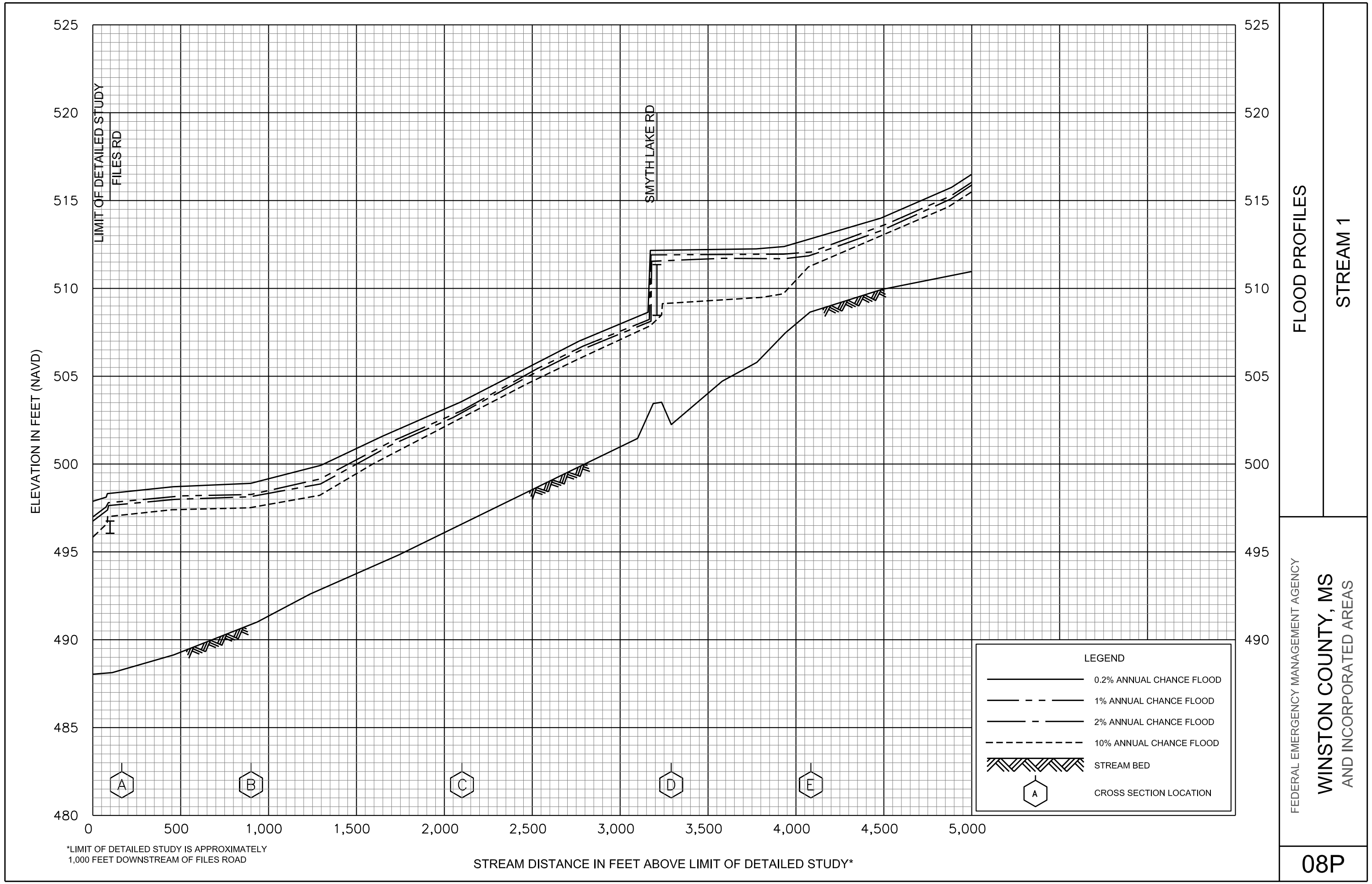
HUGHES CREEK TRIBUTARY 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

07P



FLOOD PROFILES

STREAM 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

08P

09P

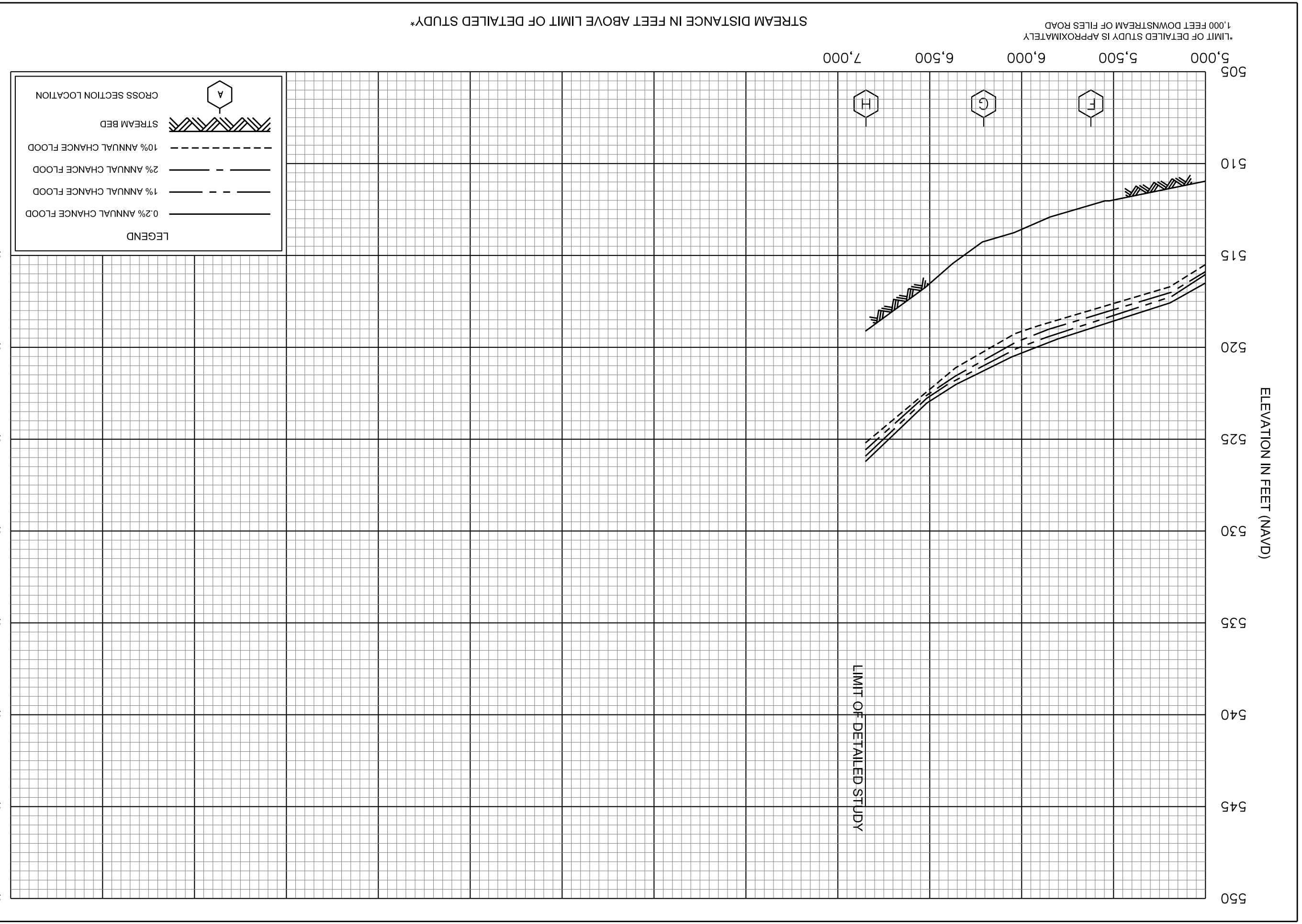
FEDERAL EMERGENCY MANAGEMENT AGENCY

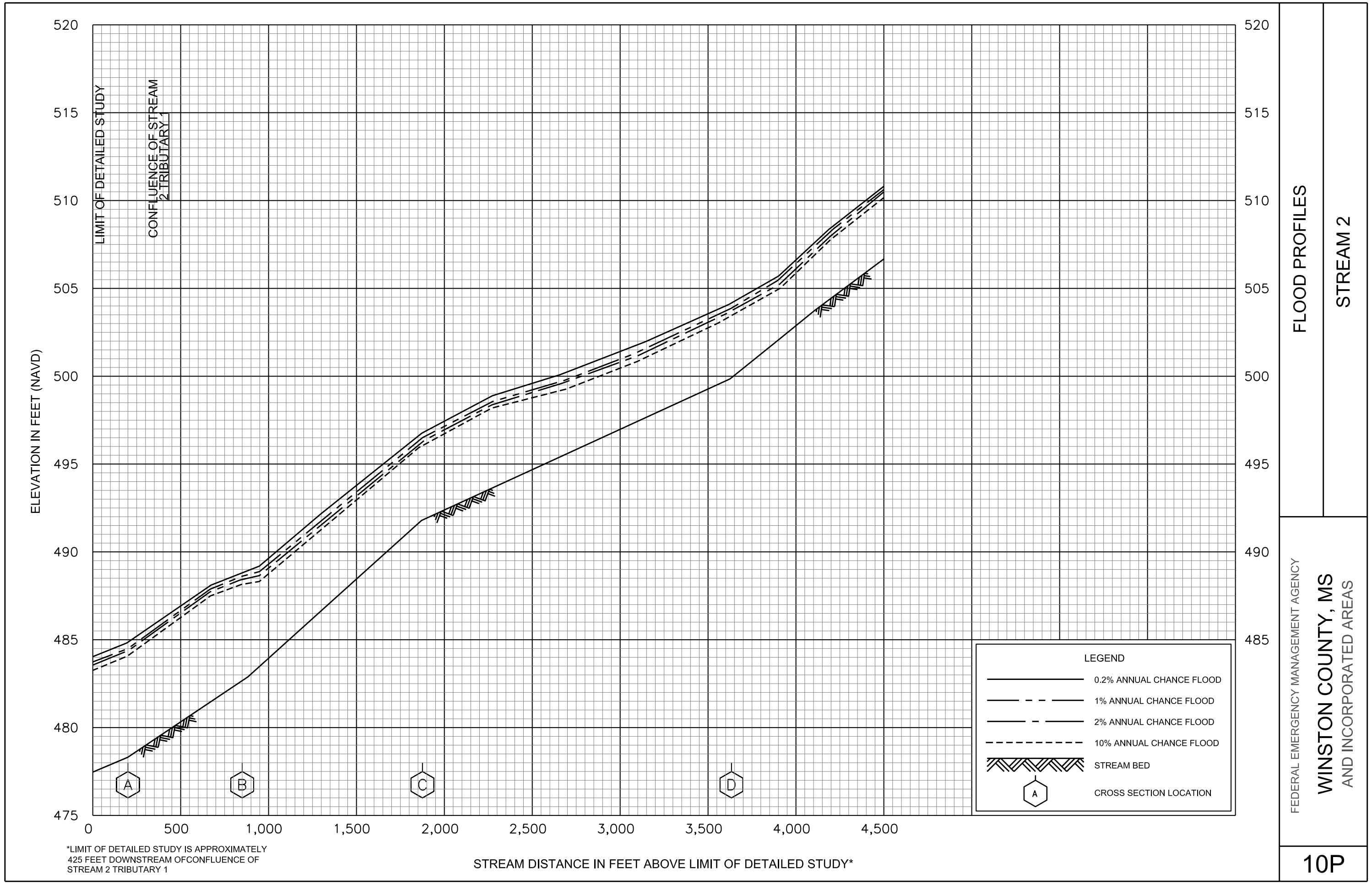
WINSTON COUNTY, MS

AND INCORPORATED AREAS

FLOOD PROFILES

STREAM 1





FLOOD PROFILES

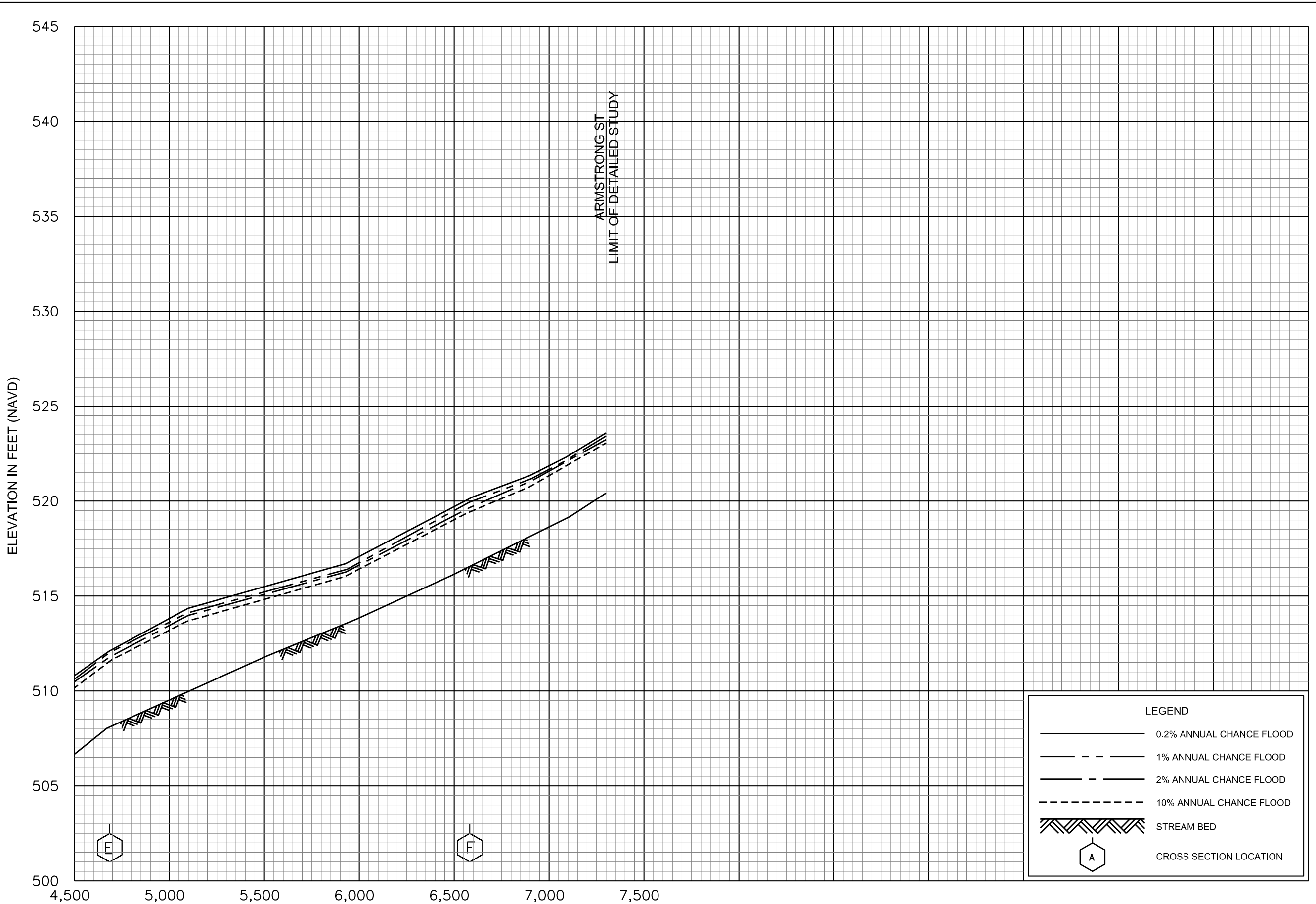
STREAM 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

10P



FLOOD PROFILES

STREAM 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

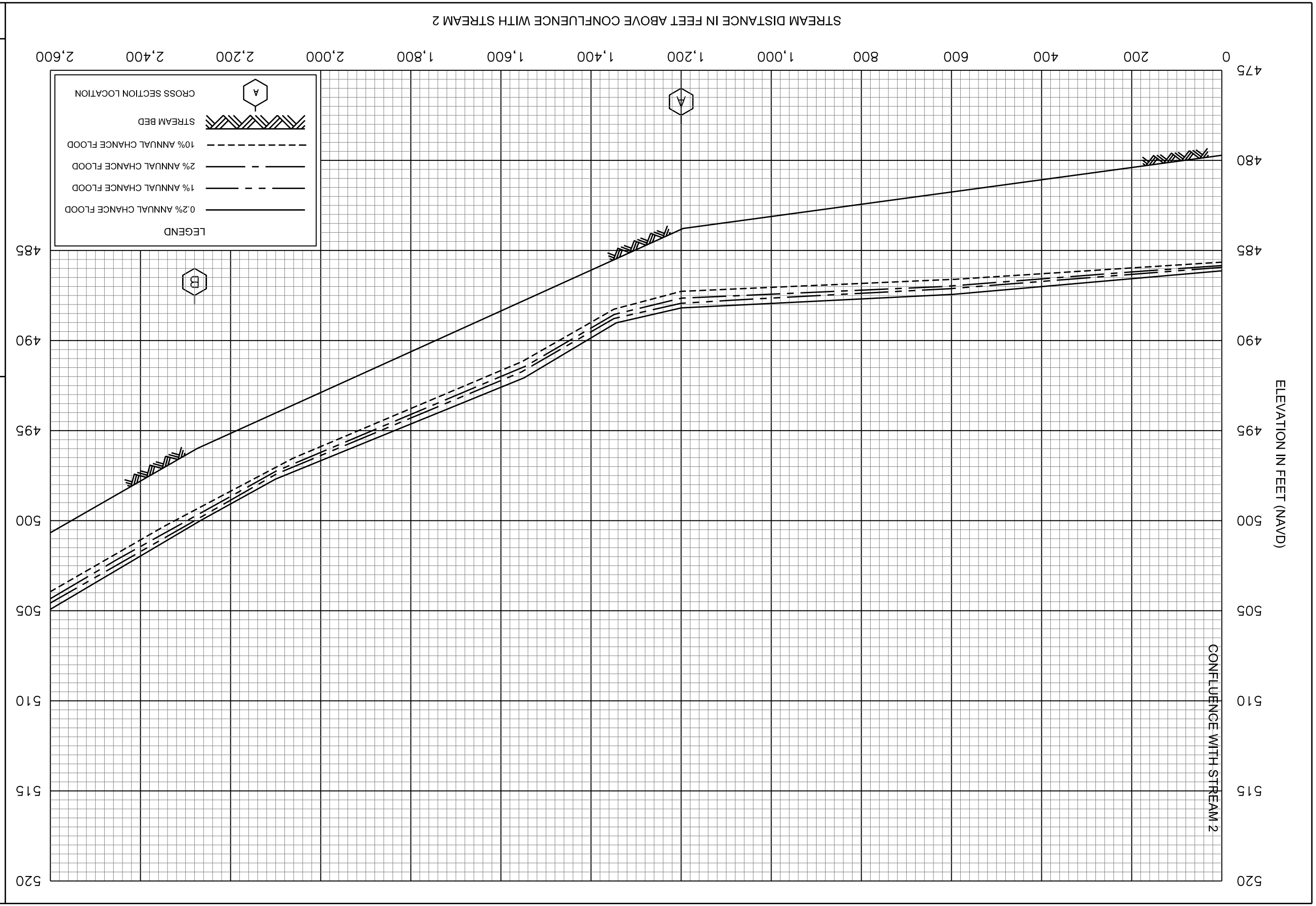
AND INCORPORATED AREAS

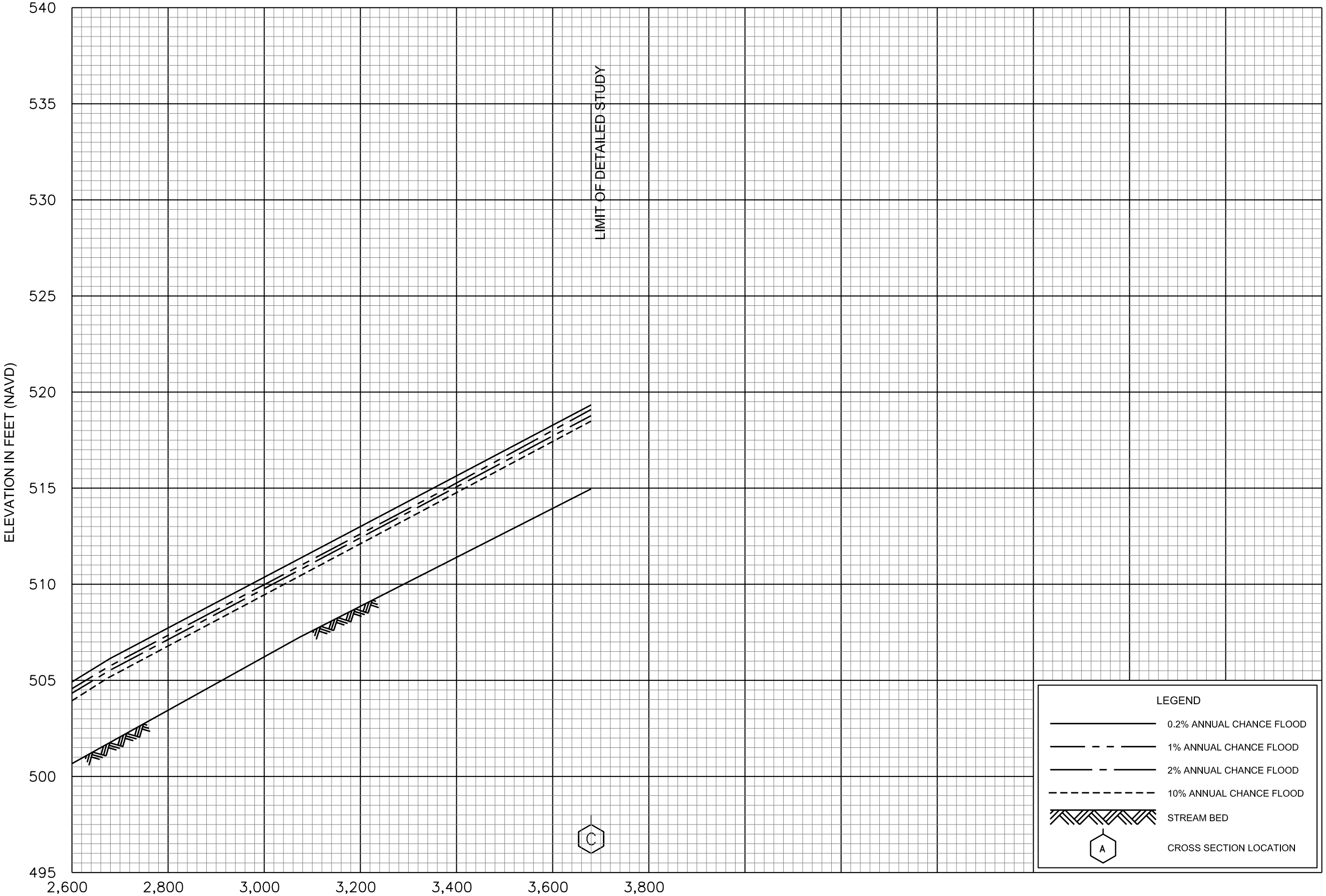
FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS
AND INCORPORATED AREAS

FLOOD PROFILES

STREAM 2 TRIBUTARY 1





FLOOD PROFILES

STREAM 2 TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

13P

ELEVATION IN FEET (NAVD)

470 480 490 500 510 520 530 540 550 560

0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 8,000 9,000 10,000

STREAM DISTANCE IN FEET ABOVE LIMIT OF DETAILED STUDY*

*LIMIT OF DETAILED STUDY IS APPROXIMATELY 3,300 FEET DOWNSTREAM OF THE CONFLUENCE OF TOWN CREEK TRIBUTARY 1

LIMIT OF DETAILED STUDY

CONFLUENCE OF TOWN CREEK TRIBUTARY 1

CONFLUENCE OF TOWN CREEK TRIBUTARY 2

MS HIGHWAY 14 (E MAIN ST)

CONFLUENCE OF TOWN CREEK TRIBUTARY 3

E RIDGE DR

A B C D E F G H I

LEGEND

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

490 500 510 520 530 540 550 560

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS
AND INCORPORATED AREAS

FLOOD PROFILES

TOWN CREEK

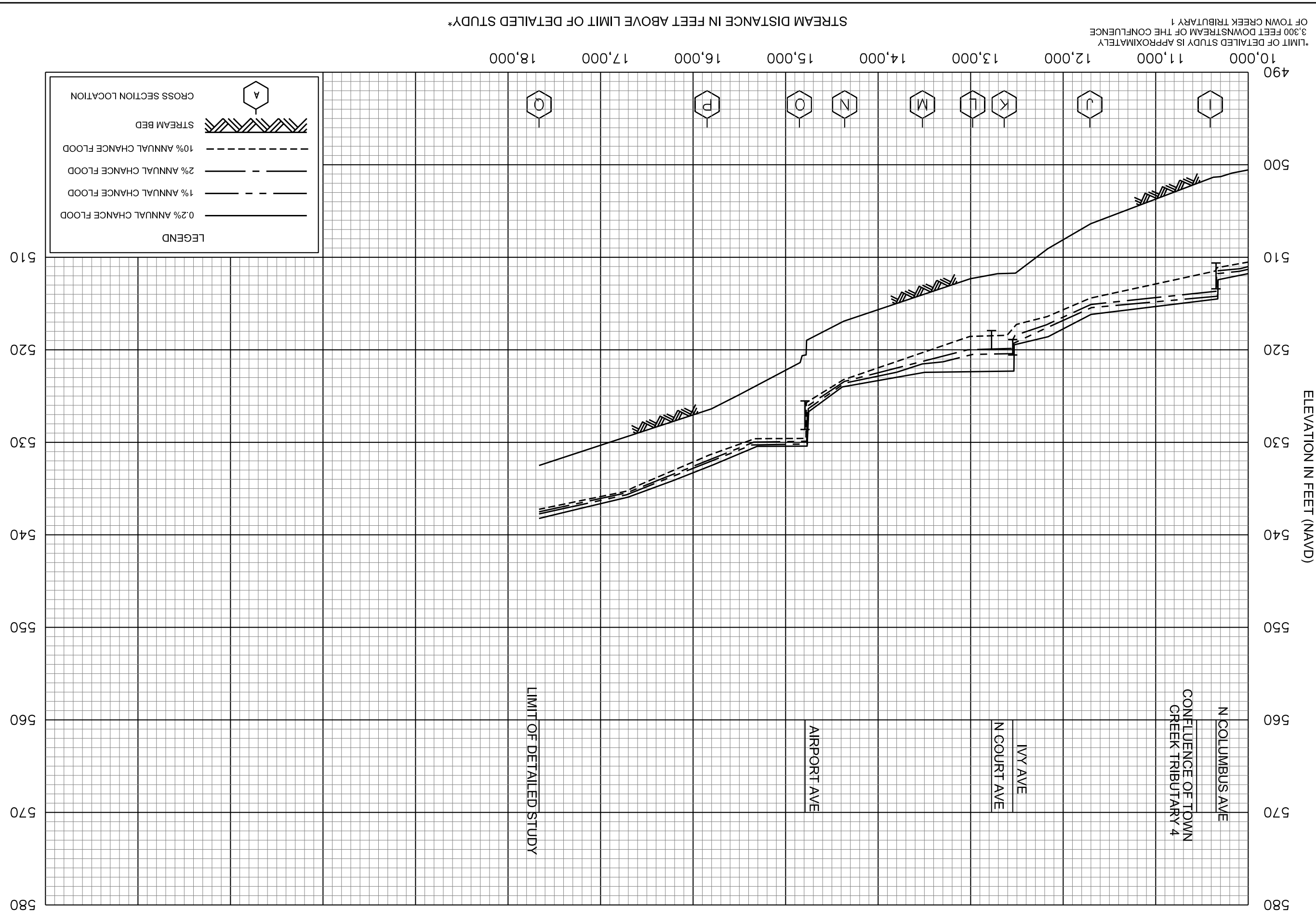
14P

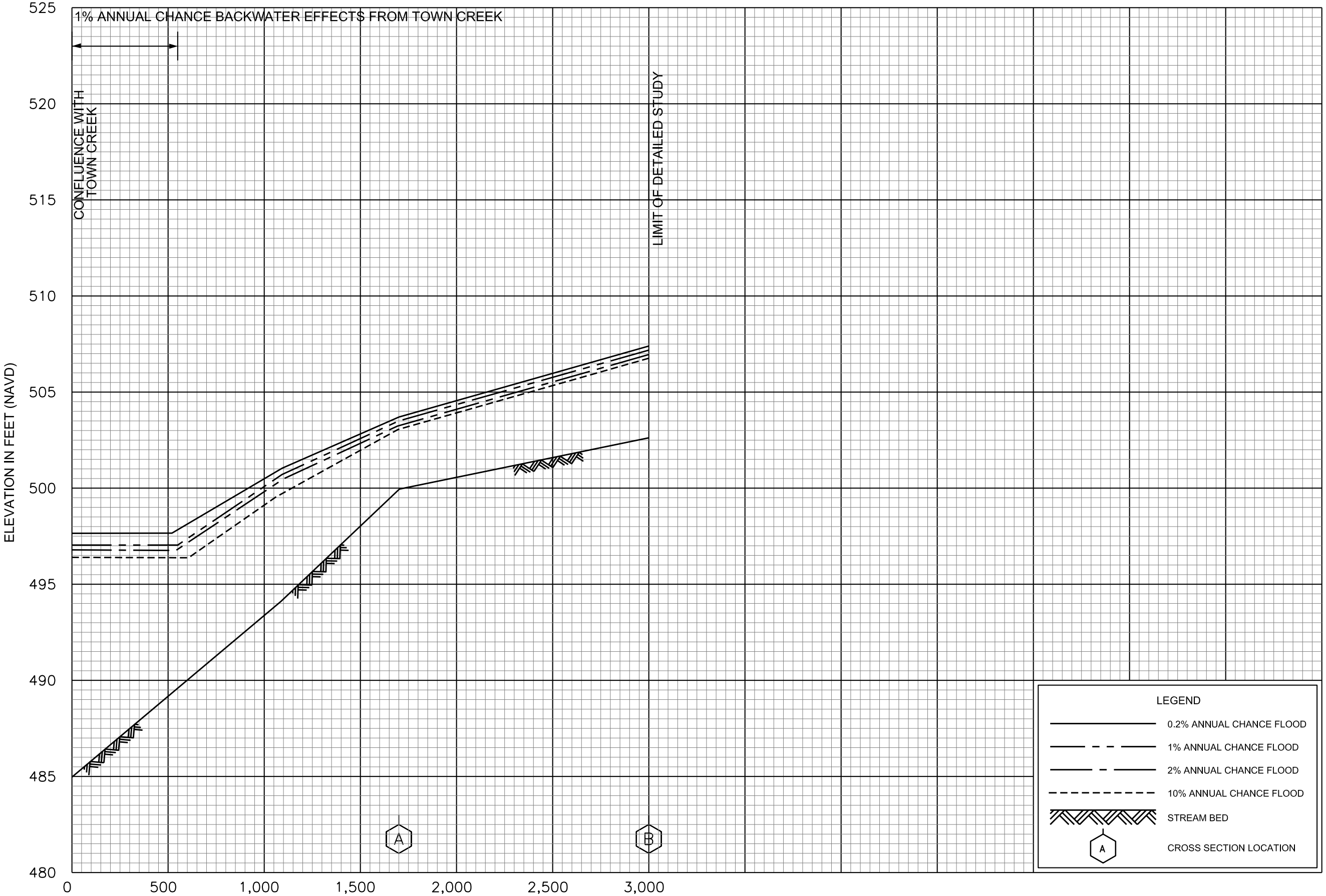
FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS
AND INCORPORATED AREAS

FLOOD PROFILES

TOWN CREEK





FLOOD PROFILES

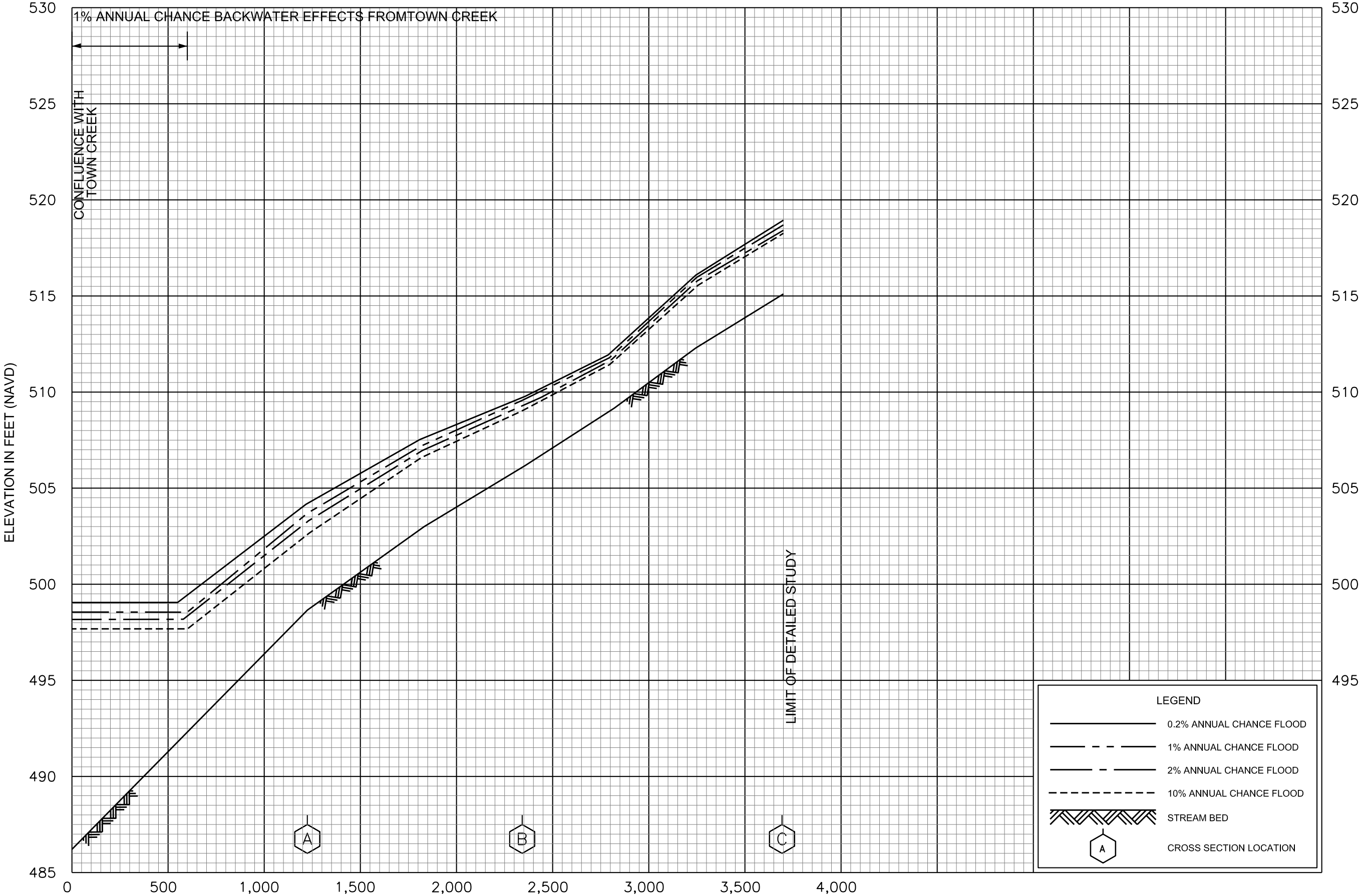
TOWN CREEK TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

16P



FLOOD PROFILES

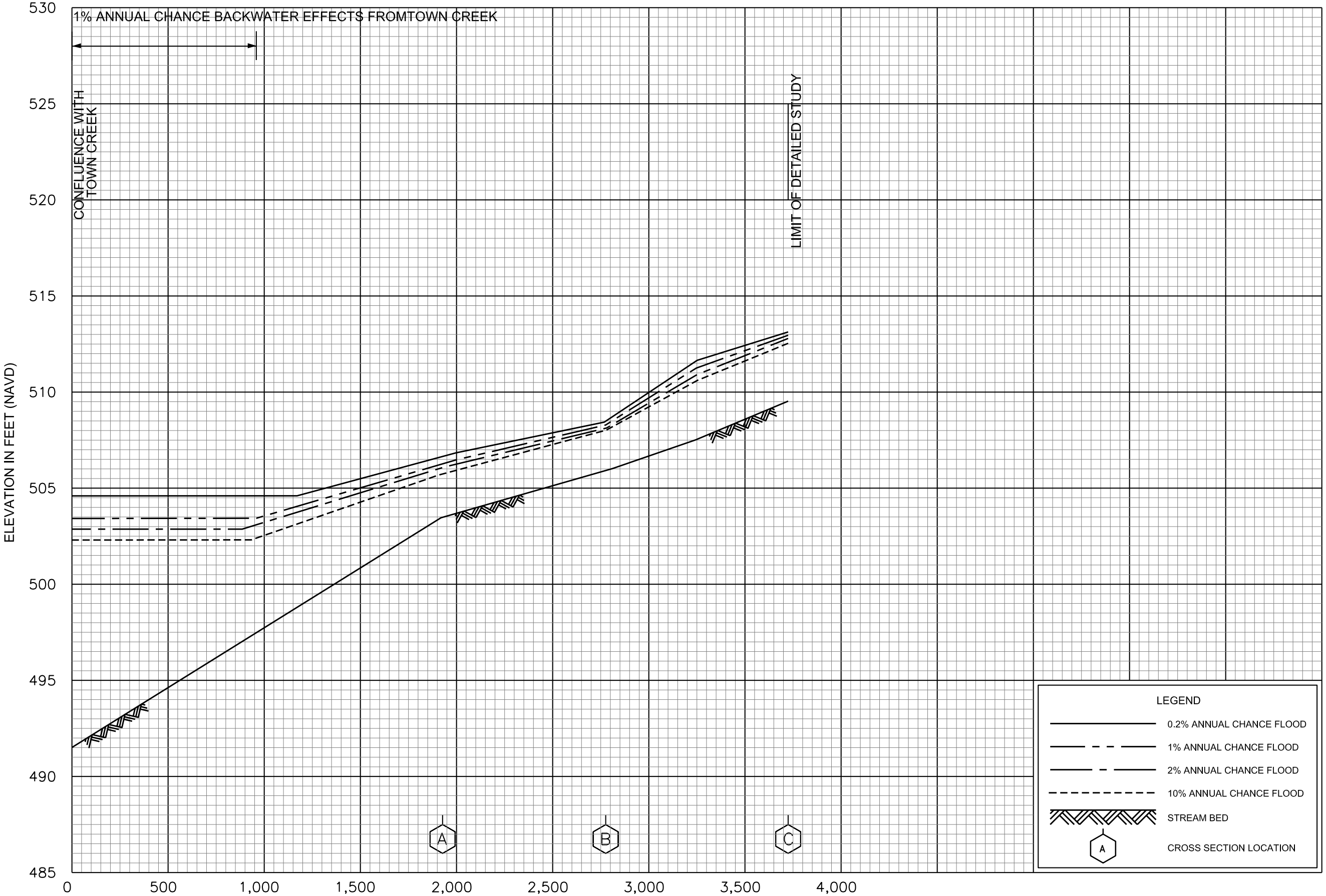
TOWN CREEK TRIBUTARY 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

17P



FLOOD PROFILES

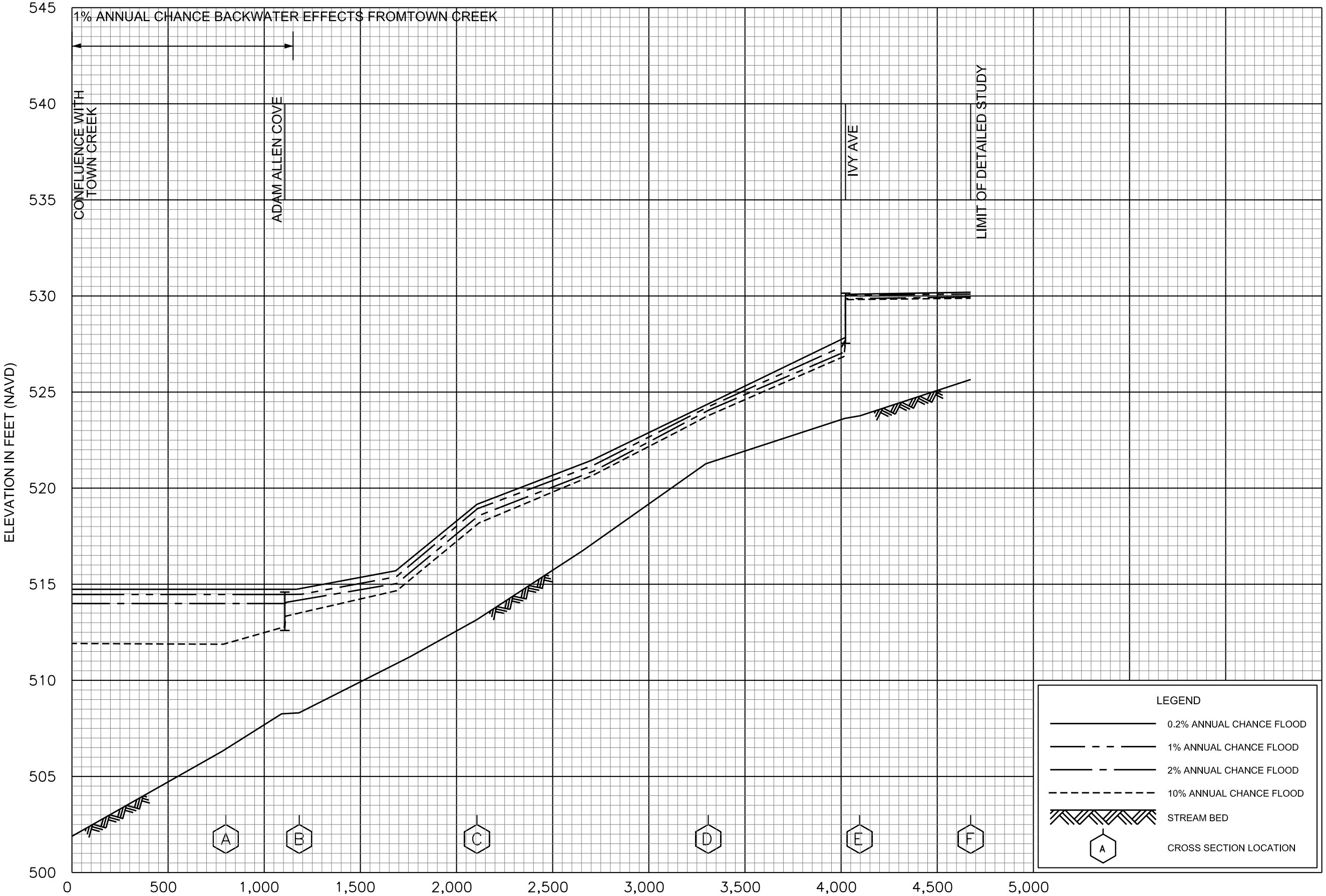
TOWN CREEK TRIBUTARY 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

18P



FLOOD PROFILES

TOWN CREEK TRIBUTARY 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

WINSTON COUNTY, MS

AND INCORPORATED AREAS

19P