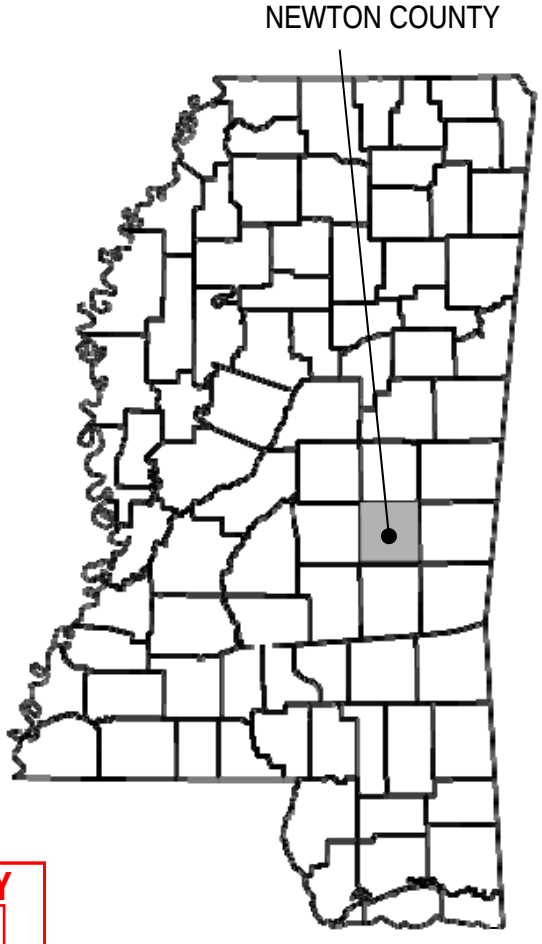
FLOOD INSURANCE STUDY



NEWTON COUNTY, MISSISSIPPI
AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
CHUNKY, TOWN OF	280240
DECATUR, TOWN OF	280251
HICKORY, TOWN OF	280311
NEWTON, CITY OF	280121
NEWTON COUNTY (UNINCORPORATED AREAS)	280231
UNION, TOWN OF	280122

PRELIMINARY

DEC 10 2009

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
28101CV000A

NOTICE TO
FLOOD INSURANCE STUDY USERS

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

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

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

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

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

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FLOOD INSURANCE STUDY
NEWTON AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and updates information on the existence and severity of flood hazards in the geographic area of Newton County, including the City of Newton; the Towns of Chunky, Decatur, Hickory, Lake and Union; and the unincorporated areas of Newton County (referred to collectively herein as Newton County), and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood-risk data for various areas of the community that will be used to establish actuarial flood insurance rates and to assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

Please note that the Town of Union is geographically located in Neshoba, and Newton Counties. The Town of Union is included in its entirety in this FIS report. Also note that the Town of Lake is located in counties Newton and Scott. The flood-hazard information for the Town of Lake is not included in this FIS report. See separately published Scott County FIS report and Flood Insurance Rate Map (FIRM).

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

1.2 Authority and Acknowledgments

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

The hydrologic and hydraulic analyses for the 1979 studies of the City of Newton, Town of Union, and Newton County Unincorporated were performed by Michael Baker, Jr., Inc., for the Federal Insurance Administration under Contract No. H-4588. The studies were completed in:

City of Newton	March 1978
Town of Union	February 1978
Newton County Unincorporated Areas	April 1978

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

The hydrologic and hydraulic analyses for Chunky Creek, Chunky Creek Tributary 1 and 2, Potterchitto Creek, Potterchitto Creek Tributary 1, Riser Creek and Stream 1 were taken from the Flood Insurance Studies of the Town of Newton, Town of Union and Newton County Unincorporated studies.

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

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

1.3 Coordination

An initial Consultation Coordination Officers (CCO) meeting is held with representatives from FEMA, the State of Mississippi, the communities, 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 communities, and the study contractor to review the results of the study. A summary of CCO meeting dates for previous studies is found in Table 1.

Table 1. Summary of Previous Consultation Coordination Officers Meetings

Community	Final CCO Dates	Attendees
Newton (Unincorporated Areas)	February 27, 1979	Representatives of Newton County Federal Insurance Administration State Coordinating Agency Michael Baker, Jr., Inc.
City of Newton	February 27, 1979	Representatives of the City of Newton Federal Insurance Administration Michael Baker, Jr., Inc.
Town of Union	February 22, 1979	Representatives of the Town of Union Federal Insurance Administration Michael Baker, Jr., Inc.

For this countywide FIS, an initial CCO meeting was held with the representatives from FEMA, the impacted communities, and the study contractor to explain the nature and purpose of a FIS, and to identify the streams to be studied by detailed methods on April 1, 2008. A final meeting, the Preliminary DFIRM Community Coordination (PDCC) was held on _____ to review the results of this study.

For this countywide FIS, the Project Scoping Meeting was held on April 1, 2008 in Newton County, MS. Attendees for these included representatives from the Mississippi Department of Environmental Quality, Mississippi Emergency Management Agency, FEM National Service Provider, Newton County, and Study Contractors. 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.

2.0 AREA STUDIED

2.1 Scope of Study

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

No new detail studies have been performed for this countywide study. Studies of flooding caused by overflow of the Chunky Creek, Chunky Creek Tributary 1, Chunky Creek Tributary 2, Potterchitto Creek, Potterchitto Creek Tributary 1, Riser Creek, and Stream 1 were redelineated.

Enhanced Approximate studies were performed along Chunky Creek, Chunky Creek Tributary 10, Chunky River, Chunky River Tributary, Okahatta Creek, Potterchitto Creek, Potterchitto Creek Tributary 1, Potterchitto Creek Tributary 2, and Potterchitto Creek Tributary 3.

The Scope of Study for the Redelineated Streams and new Enchanced Approximate study streams are presented in Table 2. Scope of Study.

Table 2. Scope of Study

Stream	Limits of New Enhanced Approximate Study
Chunky Creek	From approximately 0.45 mile downstream of Tatum Road to approximately 1.23 miles upstream of Tatum Road.
Chunky Creek Tributary 10	From the confluence with Chunky Creek to approximately 0.4 mile upstream of Highway 489.
Chunky River	From approximately 0.38 mile downstream of Grifis-Fountain Road to approximately 0.56 mile upstream of Grifis-Fountain Road
Chunky River Tributary	From the confluence with Chunky River to the 0.65 mile upstream of Adams Street
Okahatta Creek	From approximately 0.57 mile downstream of Chapel Hill Road to approximately 850 feet upstream of Little Rock Decatur Road.
Potterchitto Creek Tributary 1	From approximately 50 feet downstream of Northside Drive to approximately 445 feet upstream of Ford Avenue.
Potterchitto Creek Tributary 2	From the confluence with Potterchitto Creek to approximately 40 feet upstream of East Polk Street.
Potterchitto Creek Tributary 3	From the confluence with Potterchitto Creek to approximately 1,500 feet upstream of Hickory Little Rock 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, Newton County, and the Study Contractor.

2.2 Community Description

Newton County is located in the east-central portion of Mississippi. The total land area contained within the county is 575 square miles. It is situated approximately 9 miles west of Meridian, Mississippi, and 50 miles east of Jackson, Mississippi. According to U.S. Census Bureau figures, the 2008 population for Newton County, Mississippi was approximately 22,355 (U.S. Census Bureau, 2009).

Newton County is bordered by four counties, Neshoba County to the North, Lauderdale

County to the east, Jasper County to the south, and Scott County to the west. Its county seat is Decatur. The county is served by the Illinois Central Gulf Railroad State Highways 15, 489, 492, 503, and 504, with Interstate Highway 20 and U.S. Highway 80 crossing the south-central portion of the county. Agriculture, forest products, and trade have been the mainstays of Newton County's economy.

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 varies from mostly pine and hardwoods with heavy undergrowth to mild grassland and light undergrowth.

Newton County has a warm, humid climate and abundant rainfall which annually averages 53.4 inches. Temperatures range from an average of 79.9 degrees F for the hottest month to an average of 47.6 degrees Fahrenheit for the coldest month (Mississippi Power Company, 1977).

2.3 Principal Flood Problems

Intense seasonal rains and occasional tropical storms or hurricanes are the cause of periodic flooding in Newton County. The principal flood problems in Newton County arise from overflow into the relatively flat, developed overbanks along some streams in the town.

Minor flood damage to residential properties has occurred along Potterchitto Creek and Riser Creek. Floods on record occurred on January 7, 1950 and February 22, 1961 (U.S. DOI, 1975) at a old stream gage located on Chunky Creek near Chunky, Mississippi. The estimated return period for these floods has not been determined. These floods did not produce any significant damage in the county.

Factors which may contribute to flood problems are bridges, culverts, and stream reaches which have inadequate capacity or are subject to constriction due to debris collection or siltation.

2.4 Flood Protection Measures

Flood protection measures in the unincorporated areas of Newton County have consisted of re-channelization of various streams throughout the county by the Soil Conservation Service (SCS). Some of these streams are Chunky Creek and Okahatta Creek in the central portion of the county and Warner Creek in the western portion of the county.

No Flood protection measures have been instituted for the City of Newton and Town of Union other than normal channel maintenance and periodic replacement of aged and undersized drainage structures under streets and roadways.

Other protection measures undertaken by county officials include 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 community, standard hydrologic and hydraulic study methods were used to determine the flood-hazard data required for this study. Flood

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

3.1 Hydrologic Analyses

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

Peak discharge computations were based on a regional flood frequency report prepared by the U.S. Geological Survey (USGS) (USGS, 1976), applicable to un-urbanized basins in the State of Mississippi. Techniques for estimating flood magnitudes with 10-, 2-, 1-, and 0.2-percent chance of recurrence intervals were developed in the report using records of annual peaks for 89 basins and observed 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. The 0.2-percent-chance discharges were determined through linear extrapolation of the 10-, 2-, 1-, and 0.2-percent-chance data.

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 un-urbanized basins, adjustment factors were applied where applicable to include consideration for urbanization along the streams in the study area.

Peak discharge-drainage area relationships for the selected recurrence intervals are shown in Table 3, Summary of Discharges.

Table 3. Summary of Discharges

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (Square miles)	PEAK DISCHARGES (cfs) 10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
CHUNKY CREEK					
Approximately 0.45 mile upstream of Tatum Road	155.51	*	*	26,395	*
Approximately 1.23 miles upstream of Tatum Road	54.62	*	*	11,024	*
Approximately 0.5 miles downstream of the Illinois Central Gulf Railroad	3.72	1,565	2,380	2,849	4,343
Confluence of Chunky Creek Tributary 1	3.60	1,522	2,313	2,768	4,216
Illinois Central Gulf Railroad	2.61	1,162	1,748	2,087	3,149
Main Street	1.77	839	1,247	1,483	2,213
Mississippi Highway 492	1.66	795	1,180	1,402	2,088
Confluence of Chunky Creek Tributary 2	1.30	648	954	1,131	1,672
Town of Union Corporate Limits	0.53	305	437	513	741
CHUNKY CREEK TRIBUTARY 1					
Confluence with Chunky Creek	0.99	637	919	1,037	1,490
Front Street	0.90	581	837	945	1,355
Mississippi Highway 492	0.60	392	560	636	903
County Line Road	0.44	291	412	470	662
Town of Union Corporate Limits	0.24	162	226	260	361
CHUNKY CREEK TRIBUTARY 2					
Confluence with Chunky Creek	0.47	264	375	437	621
Kansas City Southern Railroad	0.37	244	343	398	560
CHUNKY CREEK TRIBUTARY 10					
Confluence with Chunky Creek	0.72	*	*	719	*
CHUNKY RIVER					
Approximately 0.38 mile downstream of Grifis-Fountain Road	364.17	*	*	42,421	*
CHUNKY RIVER TRIBUTARY					
Confluence with Chunky River	0.45	*	*	599	*
OKAHATTA CREEK					
Approximately 0.57 mile downstream of Chapel Hill Road	26.35	*	*	8,011	*
Approximately 0.38 mile downstream of Chapel Hill Road	22.88	*	*	7,427	*
Approximately 1.00 mile downstream of Chapel Hill Road	18.68	*	*	6,439	*

Table 3. Summary of Discharges

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (Square miles)	PEAK DISCHARGES (cfs) 10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
POTTERCHITTO CREEK					
U.S. Highway 80	33.94	5,394	8,900	10,938	18,005
State Route 15	30.15	4,948	8,143	10,003	16,423
Confluence of Riser Creek	23.28	4,100	6,705	8,229	13,435
Confluence of Dunnagin Creek	22.65	4,019	6,569	8,061	13,151
Interstate Highway 20	12.49	2,606	4,200	5,143	8,283
Confluence of Richardson Mill Creek	11.98	2,528	4,071	4,984	8,019
City of Newton downstream Corporate Limits	6.91	1,694	2,692	3,290	5,230
City of Newton upstream Corporate Limits	6.15	1,556	2,467	3,013	4,778
Illinois Central Gulf Railroad	5.28	1,393	2,200	2,686	4,244
POTTERCHITTO CREEK TRIBUTARY 1					
Confluence with Potterchitto Creek	0.39	*	*	647	*
U.S. Highway 80	0.31	229	320	358	498
POTTERCHITTO CREEK TRIBUTARY 2					
Confluence with Potterchitto Creek	0.35	*	*	361	*
Approximately 0.60 mile downstream Emanuel Street	0.24	*	*	303	*
Approximately 1,400 feet downstream Emanuel Street	0.13	*	*	209	*
POTTERCHITTO CREEK TRIBUTARY 3					
Approximately 0.60 mile downstream Kansas City Southern Railroad	2.28	*	*	1,567	*
Approximately 185 feet upstream of Highway 80	1.49	*	*	1,231	*
Approximately 840 feet downstream of Hickory Little Rock Road	1.29	*	*	1,110	*
RISER CREEK					
Confluence with Potterchitto Creek	6.39	1,600	2,539	3,101	4,922
County Road	6.00	1,529	2,421	2,953	4,687

Table 3. Summary of Discharges

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (Square miles)	PEAK DISCHARGES (cfs) 10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
STREAM 1					
City of Newton eastern Corporate Limits	1.05	792	1,114	1,298	1,842
Confluence of Tributary One	0.96	736	1,032	1,200	1,697
Illinois Central Gulf Railroad	0.82	648	902	1,045	1,469
Fifth Avenue	0.66	543	750	863	1,204
Adams Street	0.23	230	305	342	459
Main Street	0.12	136	175	193	253

Discharges for the 1-percent-annual-chance recurrence interval for all new enhanced approximate and approximate study streams in Newton County were determined using the Rural-East Region USGS regression equations for Mississippi as described in the USGS Water-Resources Investigations report 94-4002 (USGS, 1993).

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

3.2 Hydraulic Analyses

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

Cross section data for streams that have been redelineated or studied by enhanced approximate methods were obtained by field surveys. All bridges and culverts were field surveyed to obtain elevation data and structural geometry. Cross sections were located at close intervals upstream and downstream of bridges and culverts in order to compute significant backwater effects of these structures. The locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiled (Exhibit 1).

Roughness coefficients (Manning's "n") for the computations were estimated on the basis of field inspection. The roughness coefficients ranged from 0.02 to 0.08 for the main channel and 0.04 to 0.20 for the overbank areas.

Water-surface elevations of floods for redelineated stream of the selected recurrence intervals were developed using the HEC-2 computer step-backwater model developed by the

U.S. Army Corps of Engineers (USACE, 1973). The starting water-surface elevations were obtained by use of the slope-area method.

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

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

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

The enhanced approximate and approximate study methodology used Watershed Information SystEm (WISE) (Watershed Concepts, 2008) as a preprocessor to HEC-RAS. Tools within WISE allowed the engineer to verify that the cross-section data was acceptable. The WISE program was used to generate the input data file for HEC-RAS. Then HEC-RAS was used to determine the flood elevation at each cross section of the modeled stream. No floodway was calculated for streams studied by approximate methods.

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

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

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

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

- Stability A: Monuments of the most reliable nature, expected to hold position/elevation well (e.g., mounted in bedrock)

- Stability B: Monuments which generally hold their position/elevation well (e.g., concrete bridge abutment)

- Stability C: Monuments which may be affected by surface ground movements (e.g., concrete monument below frost line)

- Stability D: Mark of questionable or unknown vertical stability (e.g., concrete monument above frost line, or steel witness post)

In addition to NSRS bench marks, the FIRM may also show vertical control monuments

established by a local jurisdiction; these monuments will be shown on the FIRM with the appropriate designations. Local monuments will only be placed on the FIRM if the community has requested that they be included, and if the monuments meet the aforementioned NSRS inclusion criteria.

To obtain current elevation, description, and/or location information for bench marks shown on the FIRM for this jurisdiction, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their Web site at www.ngs.noaa.gov.

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

3.3 Vertical Datum

All FIS reports and FIRMs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. Until recently, the standard vertical datum in use for newly created or revised FIS reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD 29). With the finalization of the North American Vertical Datum of 1988 (NAVD 88), many FIS reports and FIRMs are being prepared using NAVD 88 as the referenced vertical datum. Flood elevations shown in this FIS report and on the FIRM are referenced to NAVD 88. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. It is important to note that adjacent counties may be referenced to NGVD 29. This may result in differences in base flood elevations across county lines.

The elevations shown in the FIS report and on the FIRM for Newton County are referenced to NAVD88. Ground, structure, and flood elevations may be compared and/or referenced to NGVD29, add 0.01 feet to the NAVD88 elevation. The 0.01 feet value is an average for the entire county. The BFEs shown on the FIRM represent whole-foot rounded values. For example, a BFE of 12.4 feet will appear as 12 feet on the FIRM and 12.6 feet as 13 feet. Users who wish to convert the elevations in this FIS report to NGVD29 should apply the stated conversion factor to elevations shown on the Flood Profiles and supporting data tables in the FIS report, which are shown at a minimum to the nearest 0.1 foot.

For more information on NAVD 88, see Converting the National Flood Insurance Program to the North American Vertical Datum of 1988, FEMA Publication FI-20/June 1992, or contact the Vertical Network Branch, National Geodetic Survey, Coast and Geodetic Survey, National Oceanic and Atmospheric Administration, Rockville, Maryland 20910 (Internet address http: www.ngs.noaa.gov).

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. To assist in this endeavor, each FIS report provides 1-percent-annual-chance floodplain data, which may include a combination of the following: 10-, 2-, 1-, and 0.2-percent-annual-chance flood elevations; delineations of the 1- and 0.2-percent-annual-chance floodplains; and a 1-percent-annual-chance floodway. This information is presented on the FIRM and in many

components of the FIS report, including Flood Profiles, Floodway Data tables, and Summary of Stillwater Elevation tables. Users should reference the data presented in the FIS report as well as additional information that may be available at the local community map repository before making flood elevation and/or floodplain boundary determinations.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent-annual-chance flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent-annual-chance flood is employed to indicate additional areas of flood risk in the community.

For each stream studied by detailed and enhanced approximate methods, the 1- and/or 0.2-percent-annual-chance floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the detail boundaries were interpolated using topographic map enlarged to a scale of 1" = 600', with a contour interval of 10 feet (USGS, 1966, 1972). The enhanced approximate boundaries were interpolated using 3-foot interval topographic mapping developed from USGS 10 meter digital elevation models (DEM) (USGS, 1984).

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

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

Approximate 1-percent-annual-chance floodplain boundaries in some portions of the study area were taken directly from the Flood Hazard Boundary Map for the City of Newton; and the Town of Union.

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 1-percent-annual-chance floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that

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

The floodways presented in this study were computed for certain stream segments on the basis of equal-conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations are tabulated for selected cross sections (see Table 4, Floodway Data). In cases where the floodway and 1-percent-annual-chance floodplain boundaries are either close together or collinear, only the floodway boundary is shown.

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

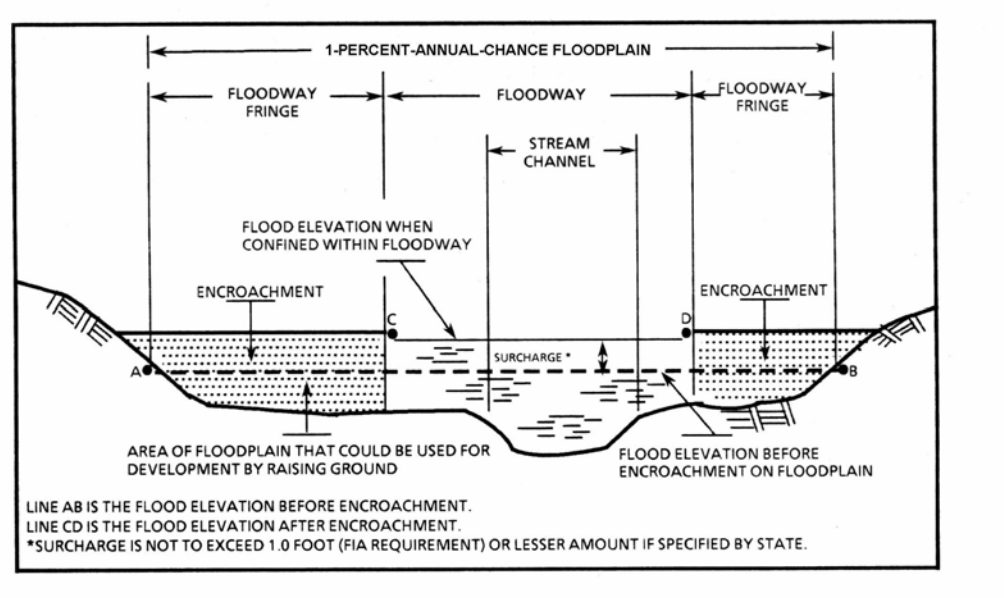

Figure 1. Floodway Schematic

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

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
CHUNKY CREEK								
A	0	535	1,817	1.6	458.1	458.1	459.1	1.0
B	2,452	148	544	5.1	464.7	464.7	465.4	0.7
C	3,609	130	500	3.7	467.2	467.2	468.2	1.0
D	5,293	239	743	2.0	472.6	472.6	473.6	1.0
E	6,093	294	916	1.5	473.7	473.7	474.7	1.0
F	6,957	192	856	1.3	476.7	476.7	477.7	1.0
G	7,972	85	339	3.3	480.7	480.7	481.7	1.0
H	9,279	35	207	3.4	488.7	488.7	489.5	0.8

[1]Feet above Limit of Detailed Study

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, MS AND INCORPORATED AREAS

FLOODWAY DATA

CHUNKY 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
CHUNKY CREEK TRIBUTARY 1								
A	198	91	313	3.3	465.0	465.0	465.7	0.7
B	1,339	210	846	1.2	468.7	468.7	469.6	0.9
C	1,659	156	230	4.1	469.5	469.5	470.4	0.9
D	1,907	177	398	2.4	470.1	470.1	471.0	0.9
E	2,913	85	360	2.6	474.8	474.8	475.8	1.0
F	3,168	22	154	6.1	478.6	478.6	479.1	0.5
G	3,497	55	249	3.8	480.2	480.2	481.2	1.0
H	3,648	55	347	1.8	481.0	481.0	482.0	1.0
I	5,251	24	183	2.6	489.6	489.6	489.8	0.2
J	6,875	14	47	5.5	501.3	501.3	501.6	0.3

[1]Feet above confluence with Chunky Creek

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, MS AND INCORPORATED AREAS

FLOODWAY DATA

CHUNKY CREEK TRIBUTARY 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
CHUNKY CREEK TRIBUTARY 2								
A	258	17	142	3.1	479.6	479.6	479.9	0.3
B	622	20	137	3.2	480.5	480.5	480.7	0.2
C	771	38	160	2.7	480.9	480.9	481.3	0.4
D	1,010	70	365	1.1	484.4	484.4	485.2	0.8
E	1,457	118	493	0.8	485.3	485.3	486.1	0.8
F	1,933	75	234	1.7	486.0	486.0	487.0	1.0
G	2,563	37	124	3.2	490.9	490.9	491.8	0.9

[1]Feet above confluence with Chunky Creek

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, MS AND INCORPORATED AREAS

FLOODWAY DATA

CHUNKY CREEK TIBUTARY 2

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
POTTERCHITTO CREEK								
A	1,012	405	3,775	2.9	348.3	348.3	349.3	1.0
B	5,491	237	2,605	4.2	356.3	356.3	357.3	1.0
C	11,923	1,895	13,819	0.8	357.3	357.3	358.3	1.0
D	14,109	630	3,894	2.6	358.6	358.6	359.4	0.8
E	16,479	1,154	6,756	1.2	362.0	362.0	362.8	0.8
F	17,954	806	3,724	2.2	362.7	362.7	363.3	0.6
G	20,058	1,073	5,685	1.4	365.0	365.0	366.0	1.0
H	24,112	87	835	6.2	375.1	375.1	375.4	0.3
I	24,620	83	1,031	5.0	375.7	375.7	376.4	0.7
J	27,852	957	5,065	1.0	377.4	377.4	378.4	1.0
K	28,210	600	2,688	1.9	377.6	377.6	378.6	1.0
L	29,699	459	1,447	2.3	379.5	379.5	380.5	1.0
M	31.310	307	1.213	2.9	382.2	382.2	383.2	1.0
N	33,598	82	845	3.6	386.9	386.9	387.5	0.6
O	34,564	108	804	3.7	388.8	388.8	389.4	0.6
P	36,796	188	627	4.3	392.9	392.9	393.9	1.0

[1]Feet above Limit of Detailed Study

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, MS AND INCORPORATED AREAS

FLOODWAY DATA

POTTERCHITTO 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
POTTERCHITTO CREEK TRIBUTARY 1								
A	510	65	74	4.8	379.1	379.1	380.1	1.0

[1]Feet above mouth

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, MS AND INCORPORATED AREAS

FLOODWAY DATA

POTTERCHITTO CREEK TRIBUTARY 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
RISER CREEK								
A	3,360	290	627	4.7	363.0[2]	363.0[2]	364.0	1.0
B	5,870	277	665	4.4	371.1	371.1	372.1	1.0

[1]Feet above mouth

[2]Elevation computed without considering backwater effects from Potterchitto Creek

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, MS AND INCORPORATED AREAS

FLOODWAY DATA

RISER 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
STREAM 1								
A	0	167	686	1.9	368.3	368.3	369.3	1.0
B	1,059	44	315	4.1	373.6	373.6	374.6	1.0
C	1,887	59	515	2.3	377.6	377.6	378.6	1.0
D	2,409	55	677	1.5	384.3	384.3	385.3	1.0
E	3,632	152	558	1.9	384.5	384.5	385.5	1.0
F	4,575	28	161	5.4	388.1	388.1	388.5	0.4
G	4,973	81	291	3.0	391.7	391.7	392.2	0.5
H	5,469	18	95	6.4	394.0	394.0	394.6	0.6
I	6,319	15	85	7.1	398.3	398.3	399.3	1.0
J	6,621	22	119	2.9	400.1	400.1	400.3	0.2
K	6,756	21	111	2.4	400.8	400.8	401.0	0.2
L	7,477	39	60	3.2	403.7	403.7	403.8	0.1

[1]Feet above Limit of Detailed Study.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, MS AND INCORPORATED AREAS

FLOODWAY DATA

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

Zone AE

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

Zone X

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

6.0 FLOOD INSURANCE RATE MAP

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

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

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

The countywide FIRM presents flooding information for the entire geographic area of Newton County. Previously, FIRMs were prepared for each incorporated community and the unincorporated areas of the County identified as flood-prone. This countywide FIRM also includes flood-hazard information that was presented separately on Flood Boundary and Floodway Maps (FBFMs), where applicable. Historical data relating to the maps prepared for each community are presented in Table 5, “Community Map History.”

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
Chunky, Town of	December 20, 1974	none	August 1, 1986	
Decatur, Town of[1]	January 2, 1980	none	January 2, 1980	
Hickory, Town of	---	none	---	
Newton, City of	February 1, 1974	January 16, 1976	April 15, 1980	
Newton County Unincorporated Areas	September 16, 1977	none	January 2, 1980	
Union, Town of	February 7, 1975	none	April 15, 1980	

[1]This community did not have its own FIRM prior to this countywide FIS. The land area for this community was previously shown on the FIRM for the unincorporated areas of Newton County, but was not identified as a separate NFIP community. Therefore, the dates for this community were taken from the 1980 FIRM for Newton County.

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, MS
AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

7.0 OTHER STUDIES

The Flood Insurance Rate Maps for Lauderdale, Jasper, Neshoba, and Scott Counties are in agreement with this study.

Information pertaining to revised and unrevised flood hazards for each jurisdiction within Newton 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 al jurisdictions within Newton County, and should be considered authoritative for the purposed of the NFIP.

8.0 LOCATION OF DATA

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

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

9.0 BIBLIOGRAPHY AND REFERENCES

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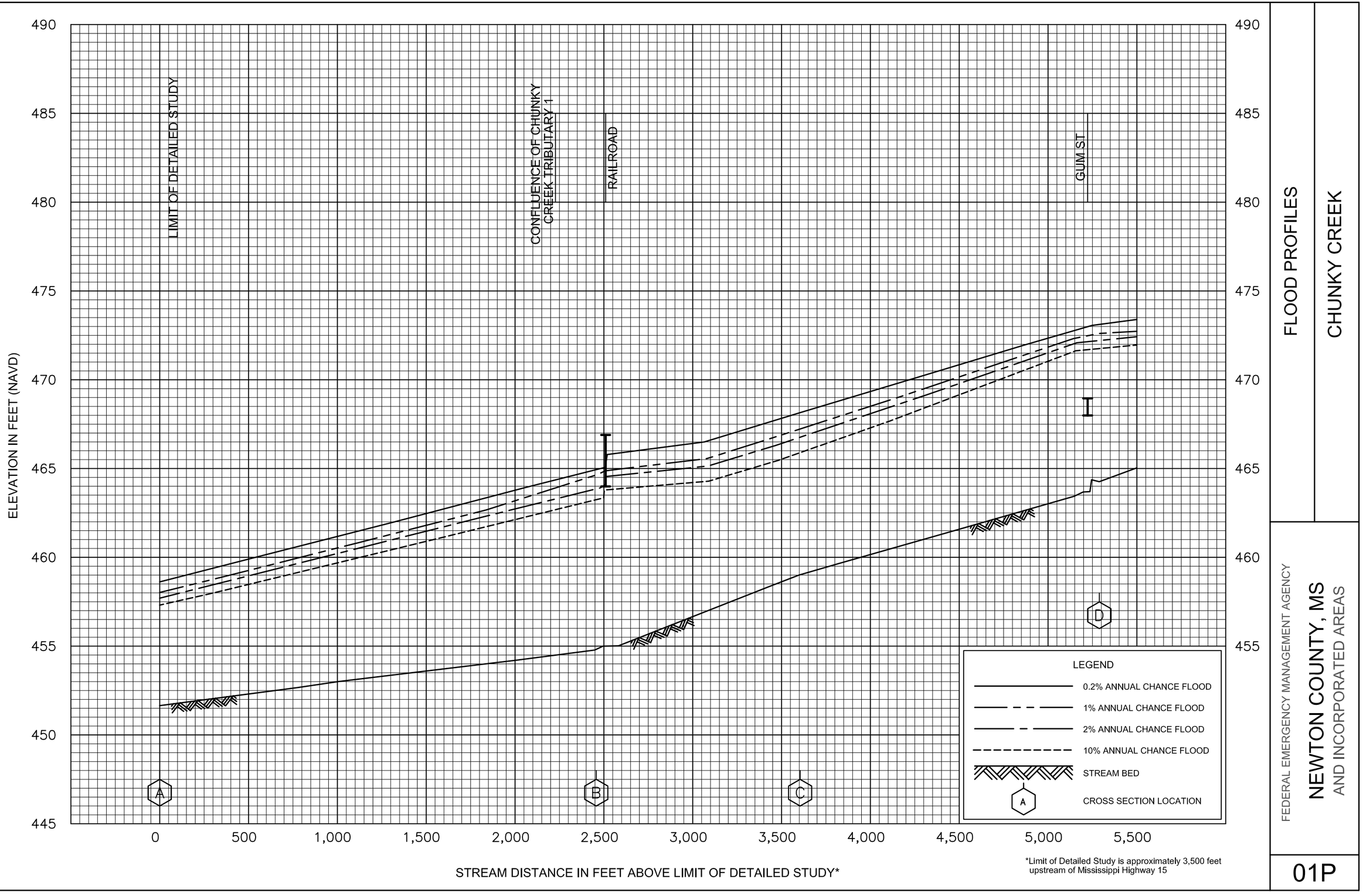


FLOOD PROFILES

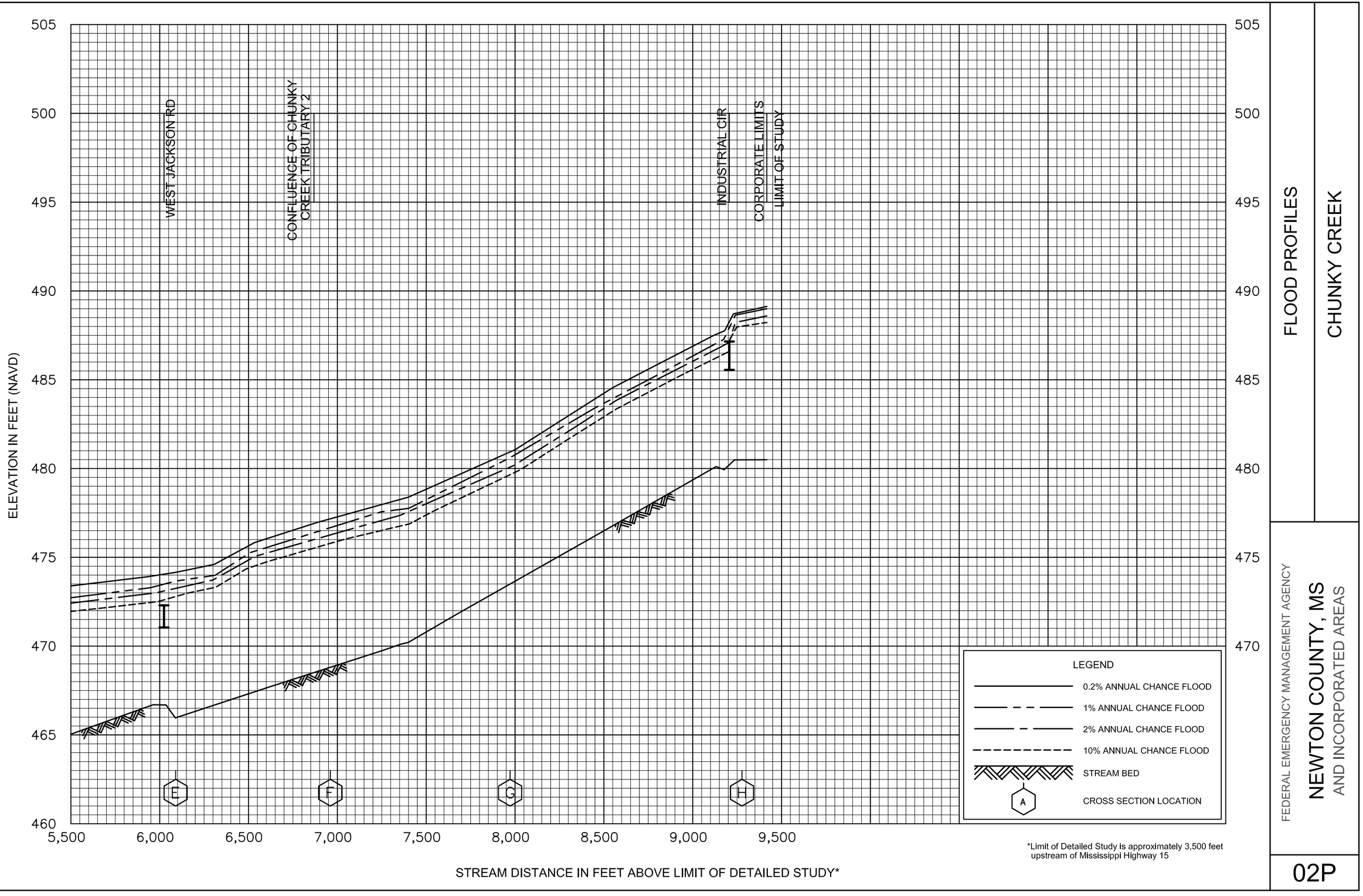
CHUNKY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, MS

AND INCORPORATED AREAS

01P



FLOOD PROFILES

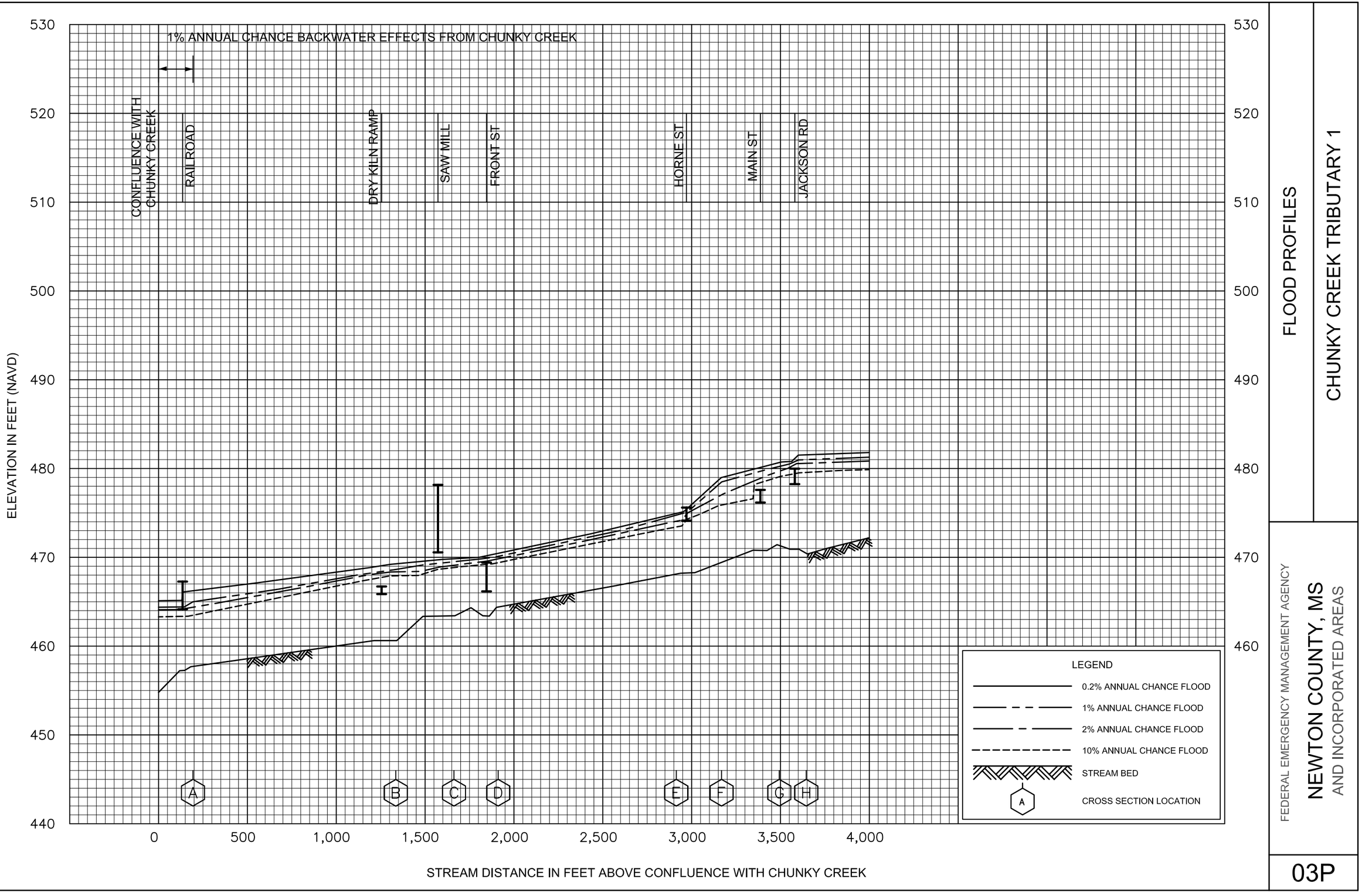
CHUNKY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, MS

AND INCORPORATED AREAS

02P



FLOOD PROFILES

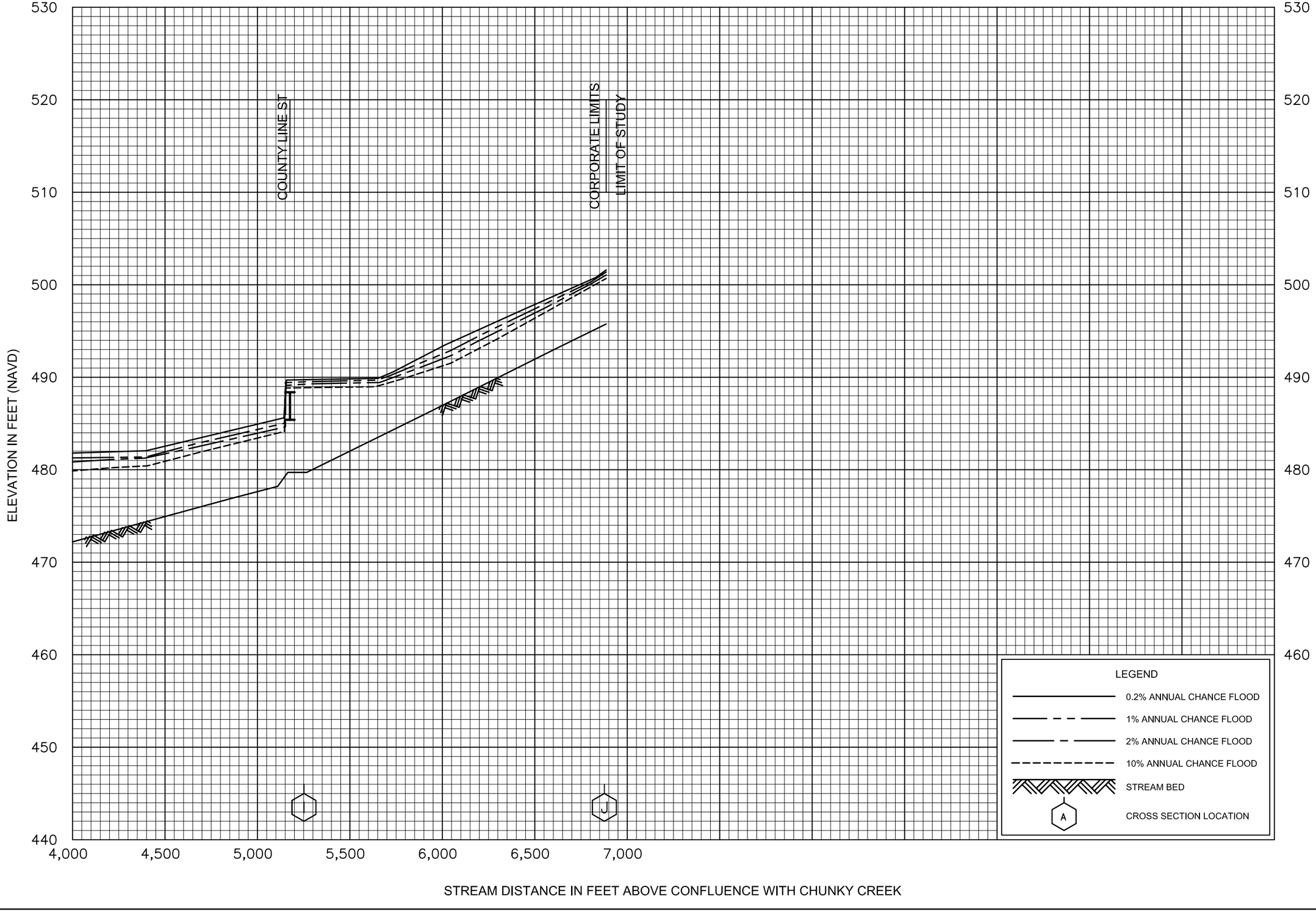
CHUNKY CREEK TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, MS

AND INCORPORATED AREAS

03P



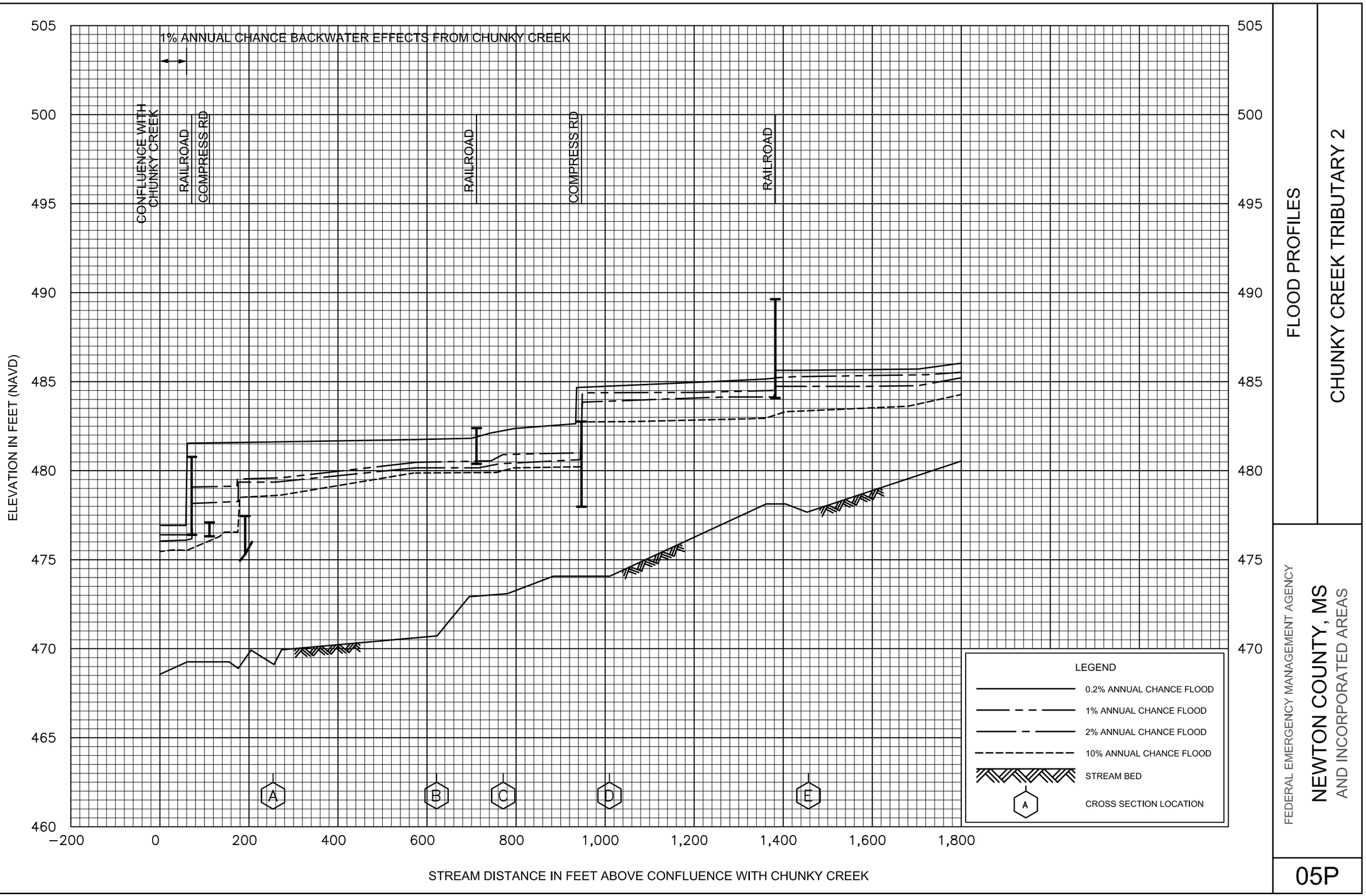
FLOOD PROFILES

CHUNKY CREEK TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, MS
AND INCORPORATED AREAS

04P



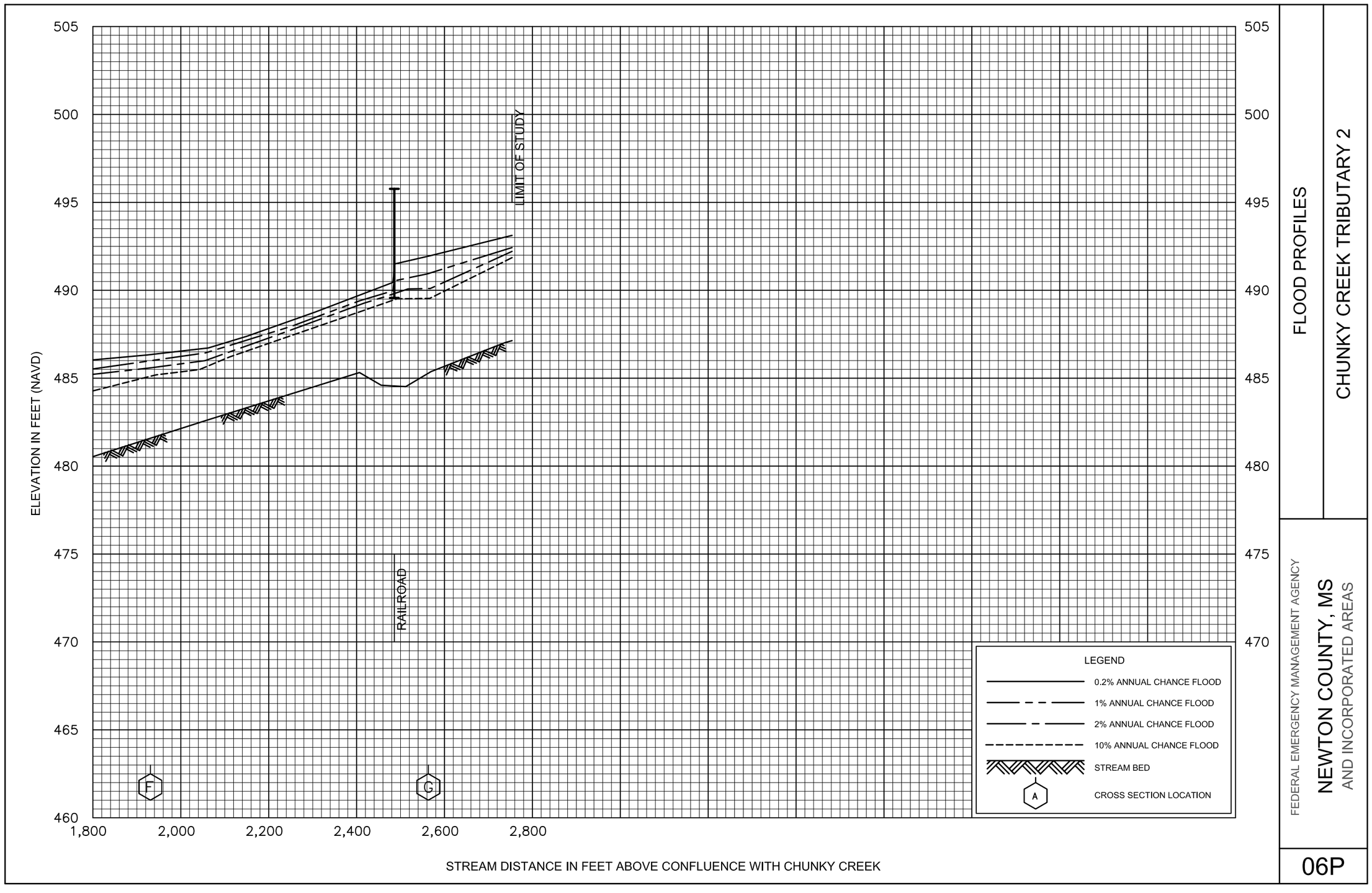
FLOOD PROFILES

CHUNKY CREEK TRIBUTARY 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, MS
AND INCORPORATED AREAS

05P



FLOOD PROFILES

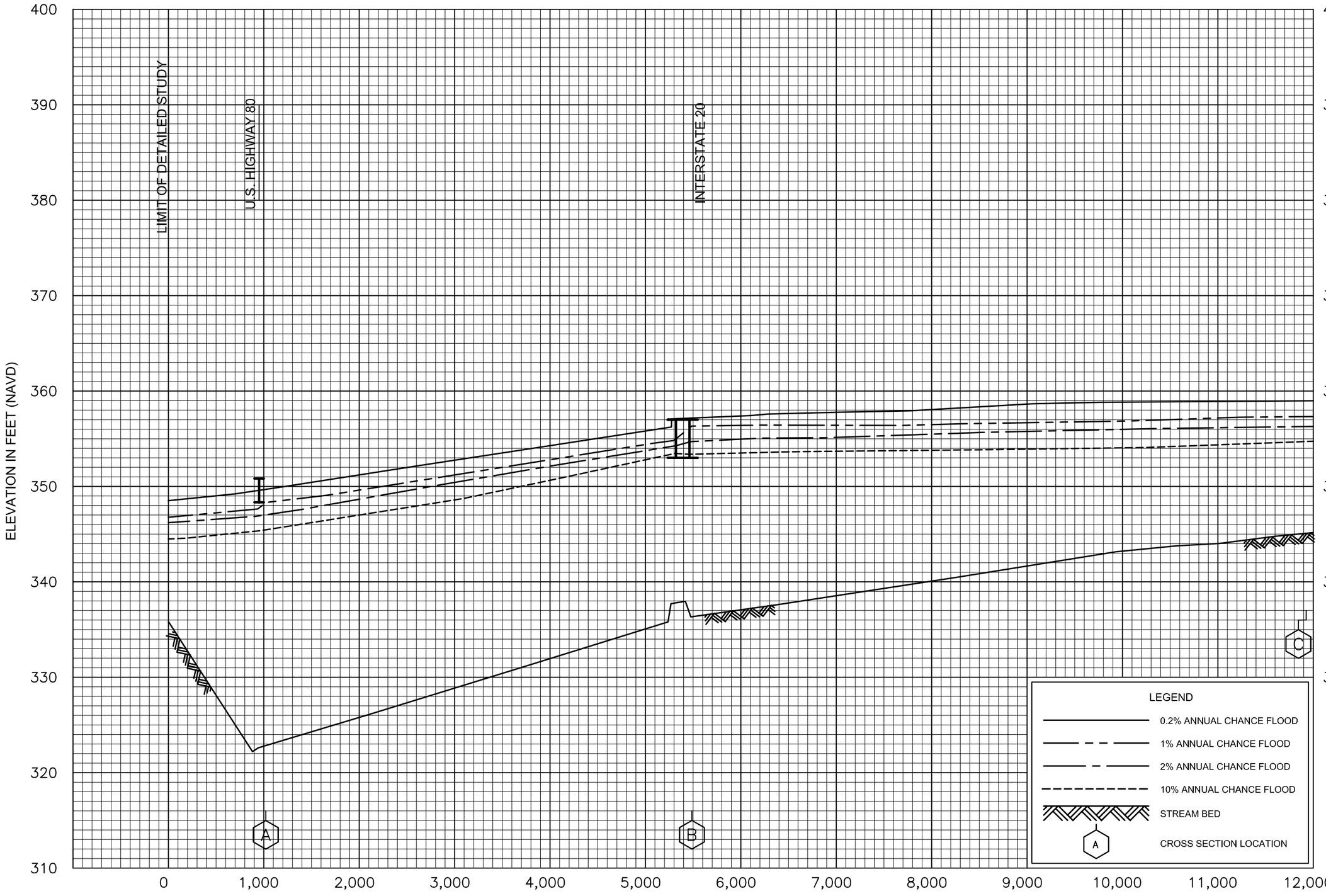
CHUNKY CREEK TRIBUTARY 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, MS

AND INCORPORATED AREAS

06P



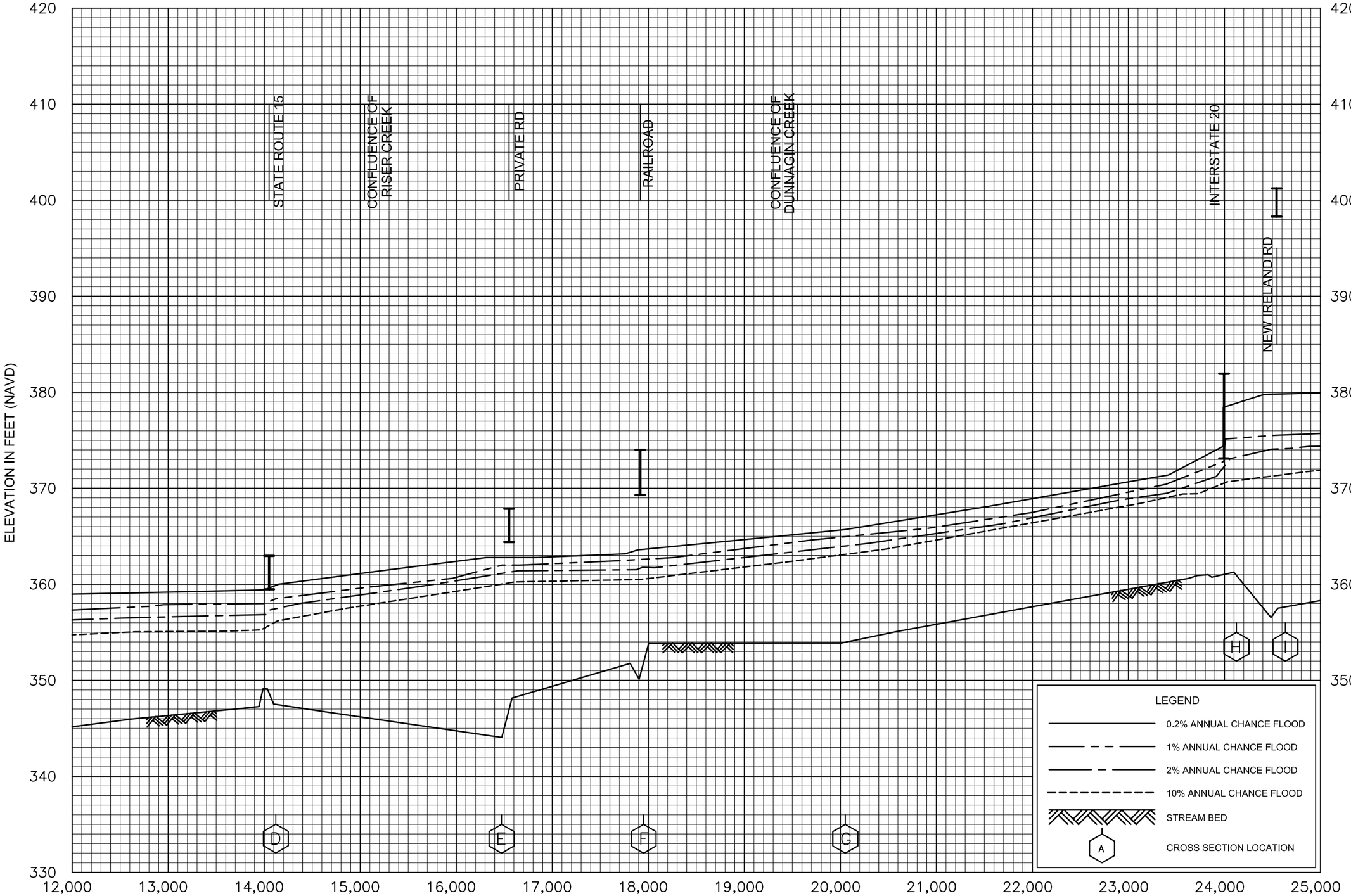
FLOOD PROFILES

POTTERCHITTO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, MS
AND INCORPORATED AREAS

07P



*Limit of detailed study is approximately 450 feet downstream of US Highway 80

FLOOD PROFILES

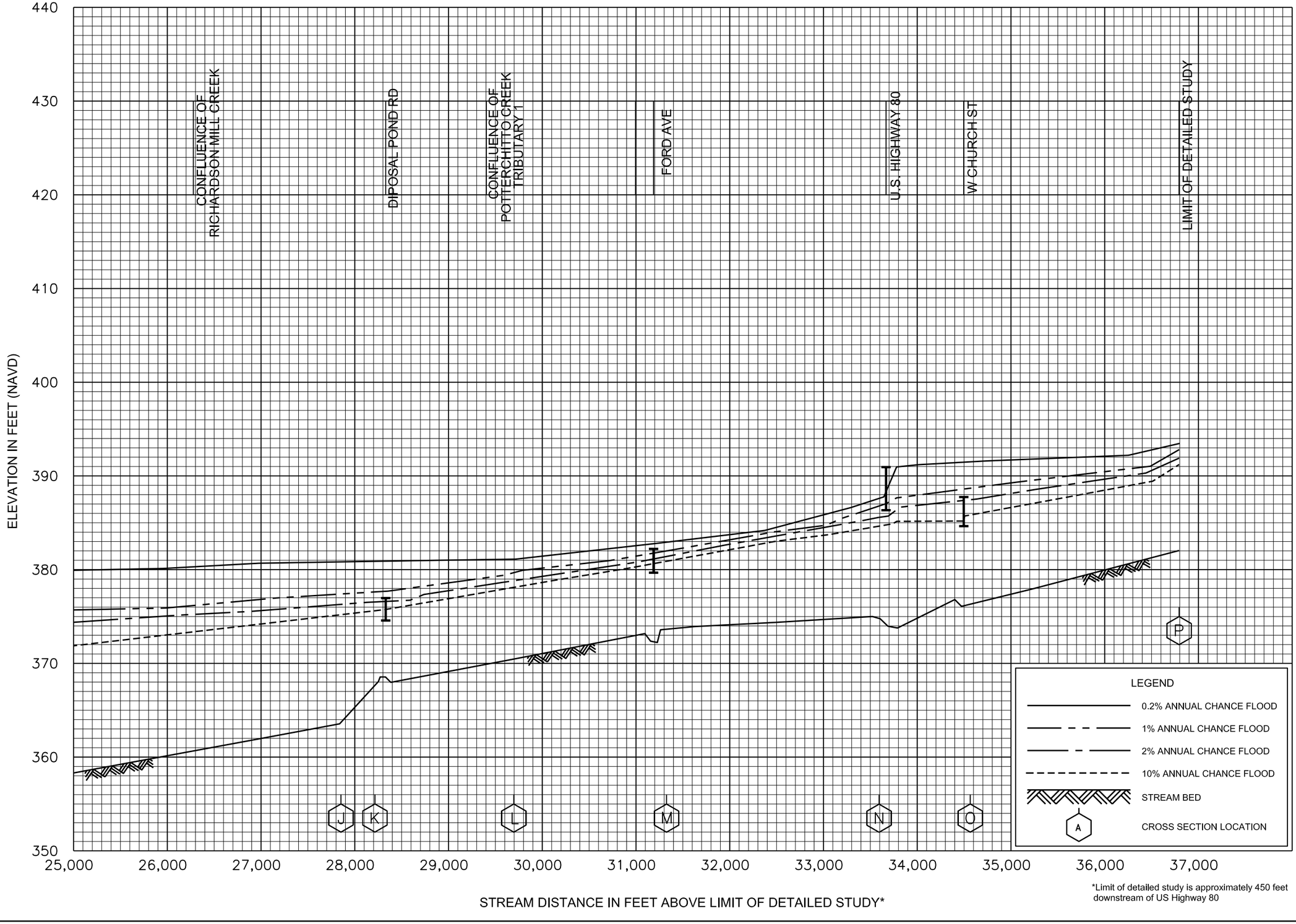
POTTERCHITTO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, MS

AND INCORPORATED AREAS

08P



FLOOD PROFILES

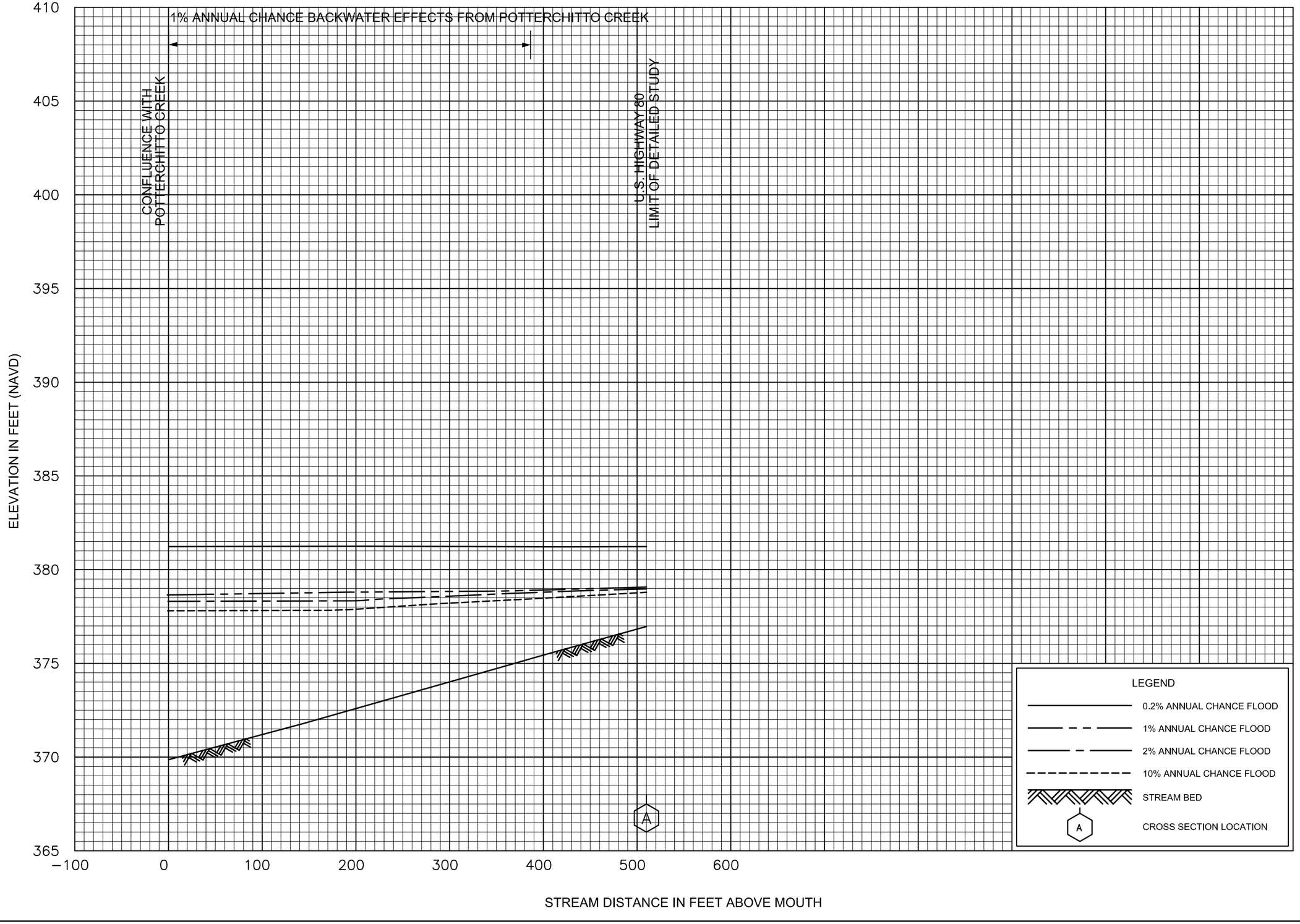
POTTERCHITTO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, MS

AND INCORPORATED AREAS

09P



FLOOD PROFILES

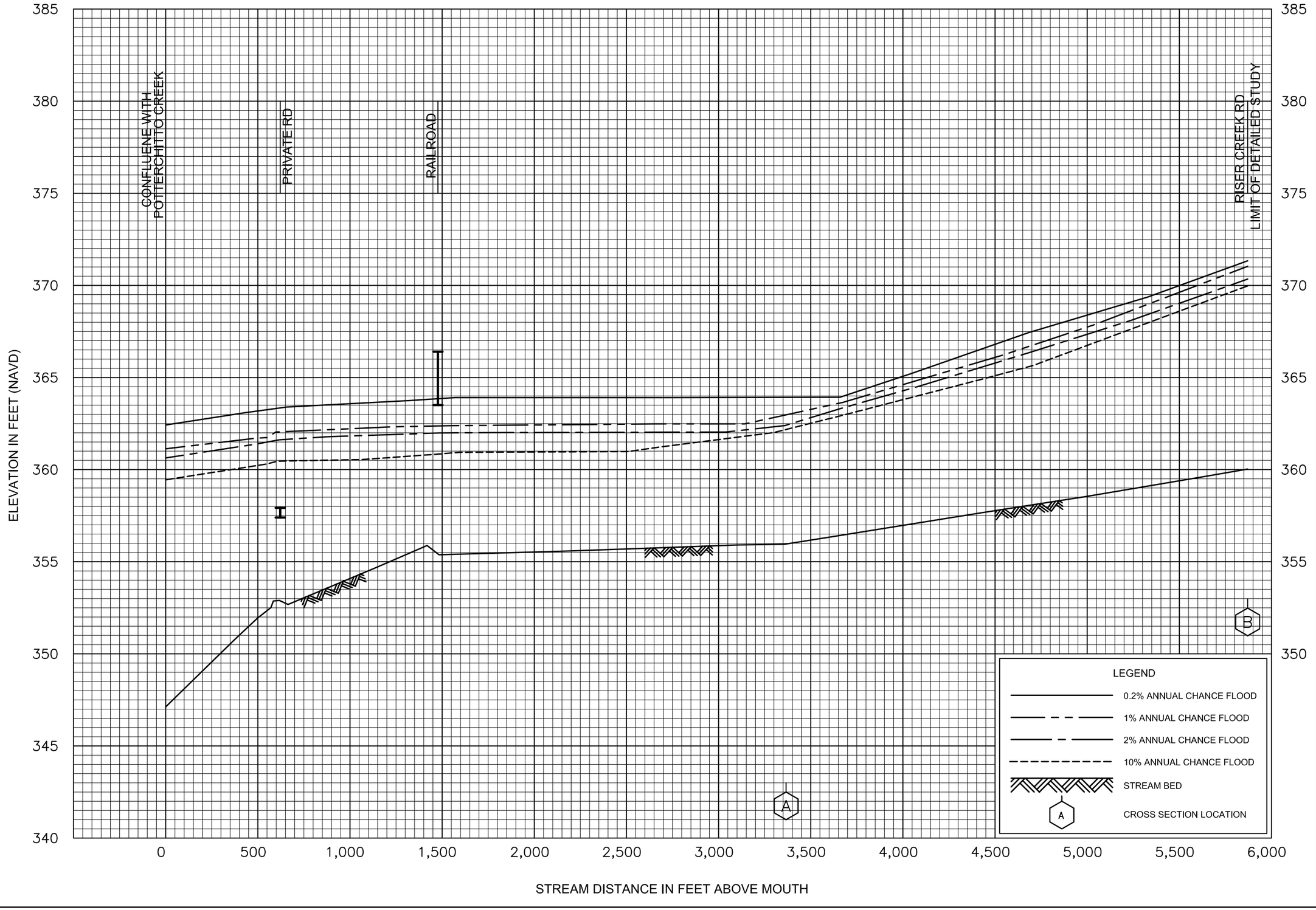
POTTERCHITTO CREEK TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, MS

AND INCORPORATED AREAS

10P



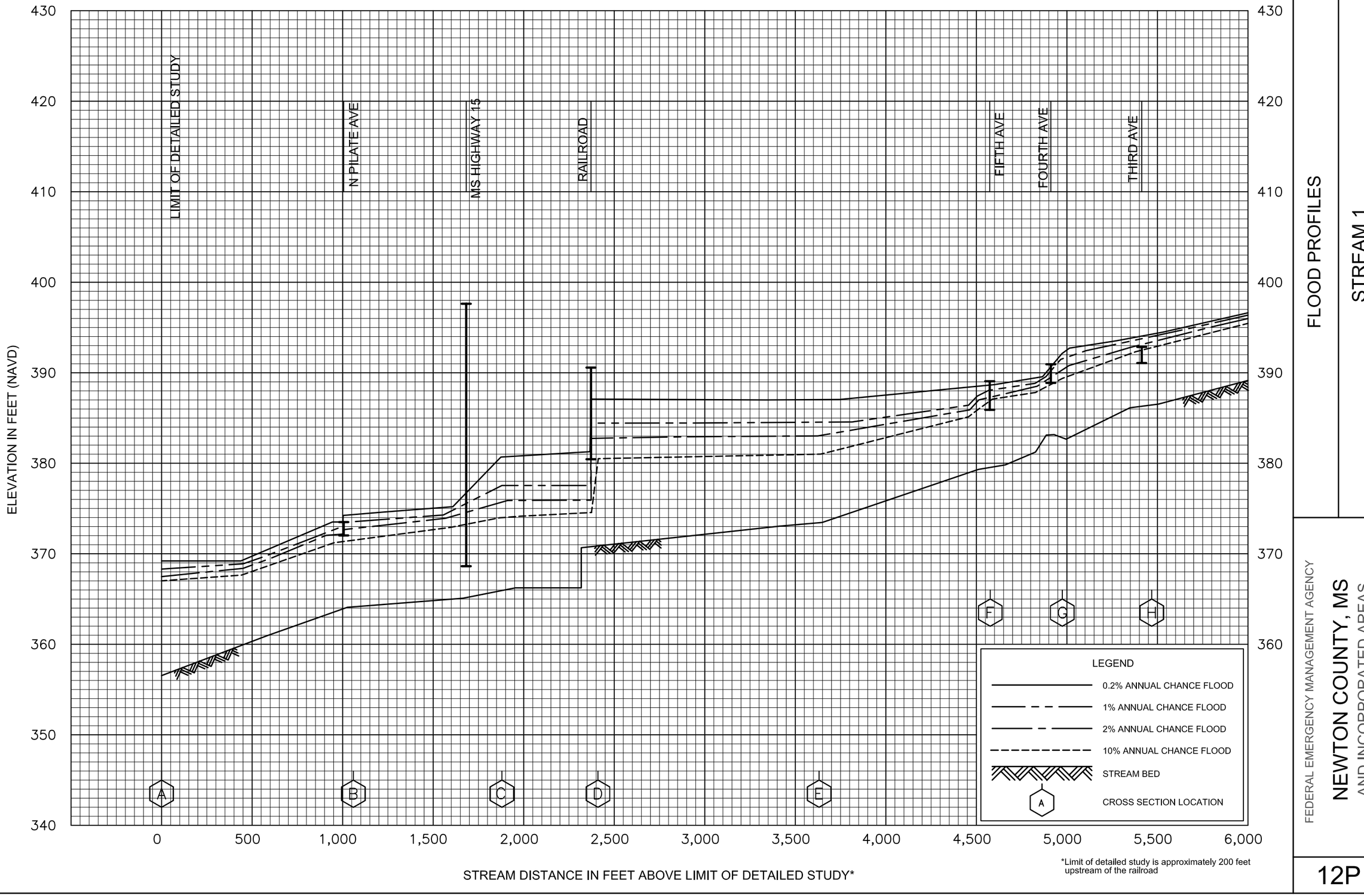
FLOOD PROFILES

RISER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, MS
AND INCORPORATED AREAS

11P



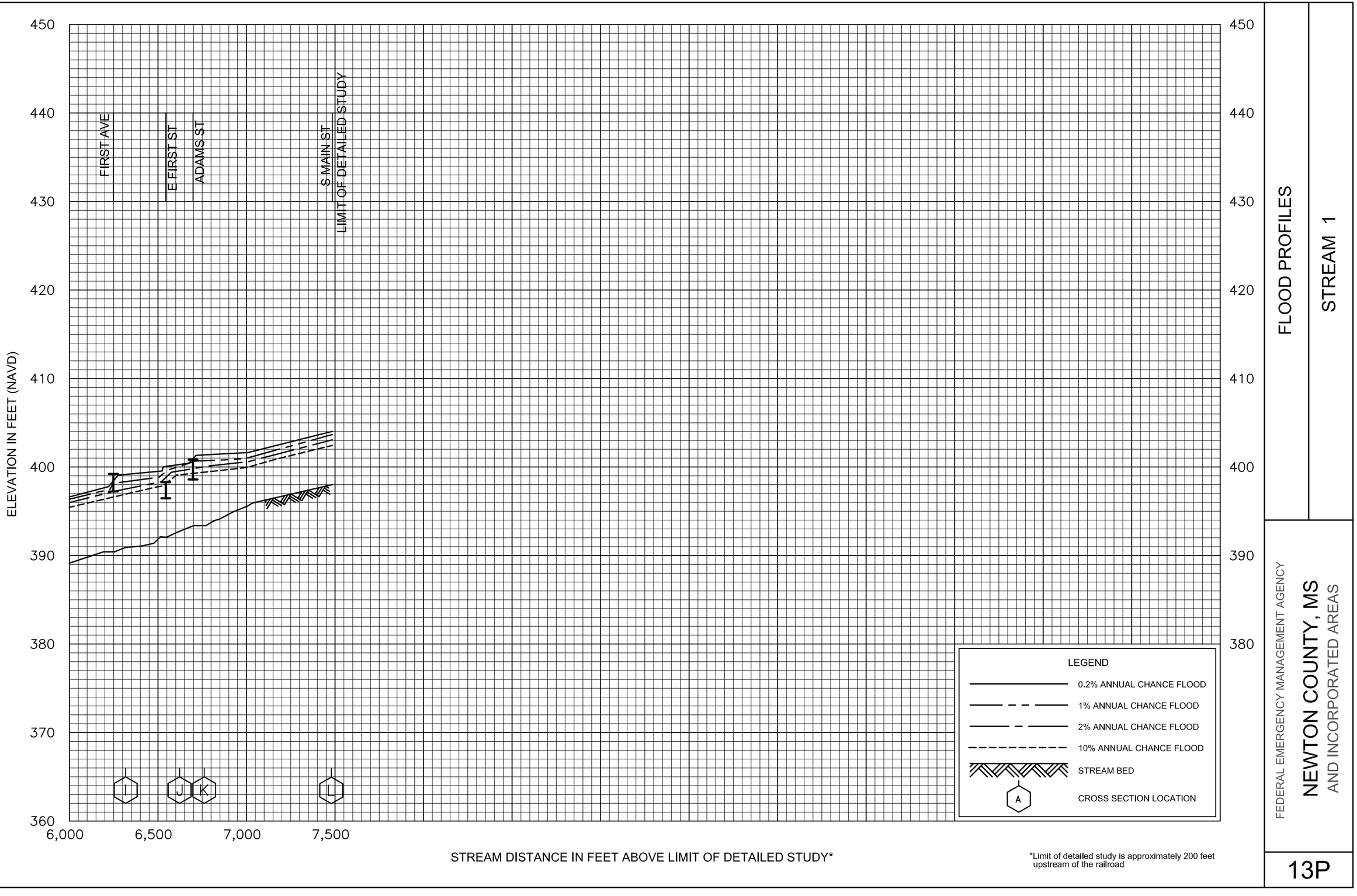
FLOOD PROFILES

STREAM 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, MS
AND INCORPORATED AREAS

12P



FLOOD PROFILES

STREAM 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, MS

AND INCORPORATED AREAS

13P