FLOOD INSURANCE STUDY

ADAMS COUNTY, ILLINOIS

AND INCORPORATED AREAS

Community Name	*Community Number*
ADAMS COUNTY (UNINCORPORATED AREAS)	170001
*CAMP POINT, VILLAGE OF	170368
*CLAYTON, VILLAGE OF	170318
*COATSBURG, VILLAGE OF	170360
*COLUMBUS, VILLAGE OF	170631
*GOLDEN, VILLAGE OF	170002
*LA PRAIRIE, VILLAGE OF	170760
*LIBERTY, VILLAGE OF	170546
*LIMA, VILLAGE OF	170612
LORAINE, VILLAGE OF	170574
*MENDON, VILLAGE OF	170529
*PAYSON, VILLAGE OF	170557
*PLAINVILLE, VILLAGE OF	170518
QUINCY, CITY OF	170003
*URSA, VILLAGE OF	170569

*NO SPECIAL FLOOD HAZARD AREAS IDENTIFIED

Preliminary: January 29, 2016
Revised: To Be Determined

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
17001CV000B

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 (FIS) report may not contain all data available within the Community Map Repository. Please contact the Community Map Repository for any additional data.

The Federal Emergency Management Agency (FEMA) may revise and republish part or all of this FIS report at any time. In addition, FEMA may revise part of this FIS report by the Letter of Map Revision process, which does not involve republication or redistribution of the FIS report. Therefore, users should consult with community officials and check the Community Map Repository to obtain the most current FIS report components.

This FIS report was revised on _____. Users should refer to Section 10.0, Revisions Description, for further information. Section 10.0 is intended to present the most up-to-date information for specific portions of this FIS report. Therefore, users of this report should be aware that the information presented in Section 10.0 supersedes information in Sections 1.0 through 9.0 of this FIS report.

Initial Countywide FIS Effective Date: June 2, 2011

Revised Countywide Date: To Be Determined

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FLOOD INSURANCE STUDY
ADAMS COUNTY, ILLINOIS 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) and/or Flood Hazard Boundary Maps (FHBMs) in the geographic area of Adams County, Illinois, including: the City of Quincy; the villages of Camp Point, Clayton, Coatsburg, Columbus, Golden, La Prairie, Liberty, Lima, Loraine, Mendon, Payson, Plainville, and Ursa, and the unincorporated areas of Adams County (hereinafter referred to collectively as Adams 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 county that will be used to establish actuarial flood insurance rates. This information will also be used by Adams 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 C.F.R § 60.3.

This project, which includes conversion to the countywide format, affects the mapping of special flood hazard areas (SFHAs) in the Village of Lorraine, a previously unmapped community.

Note that the villages of Camp Point, Clayton, Coatsburg, Columbus, Golden, La Prairie, Liberty, Lima, Mendon, Payson, Plainville, and Ursa have no SFHAs identified.

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 Acknowledgements

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

The FIS includes the unincorporated areas of, and incorporated communities within, Adams County. Information on the authority and acknowledgments for each jurisdiction included in this FIS, as compiled from their previously printed FIS reports, is shown below.

Pre-Countywide FISs

Adams County (Unincorporated Areas):	The hydrologic and hydraulic analyses for the FIS report dated November 15, 1985 (Reference 1) were obtained from *Upper Mississippi River, Water Surface Profiles, River Mile 0.0 to River Mile 847.5* (Reference 2) and the FIS dated April 15, 1981 for the City of Quincy (Reference 3). For the revised FIS dated January 19, 1996 (Reference 4) topographic information and the interior drainage analysis for the South Quincy Drainage and Levee District levee along the Mississippi River were obtained from the U.S. Army Corps of Engineers (USACE), Rock Island District (Reference 5).
City of Quincy:	The hydrologic and hydraulic analyses for the FIS report dated April 15, 1981 (Reference 3) were performed by Roy F. Weston, Inc. for the Federal Insurance Administration, under Contract No. H-3977. This study, which was completed in October 1977, covered all significant flooding sources affecting the City of Quincy.

The authority and acknowledgements for the villages of Camp Point, Clayton, Coatsburg, Columbus, Golden, La Prairie Liberty, Lima, Loraine, Mendon, Payson, Plainville, and Ursa are not included because there were no previously printed FISs for those communities.

June 2, 2011
Countywide FIS

New hydrologic and hydraulic analyses for the Mississippi River were prepared by the U.S. Army Corps of Engineers (USACE) and reported in the 2004 *Upper Mississippi River System Flow Frequency Study* (UMRSFFS) (Reference 6).

For this countywide FIS, detailed study analyses for the Sny Island Levee Drainage District were obtained from the *Interior Drainage Study, Sny Island Levee and Drainage District, Adams, Pike and Calhoun County Illinois* (Reference 7). The study, Project No. 00-930.20, was performed by Klingner and Associates, P.C. and completed in June 2001.

Planimetric base map information was derived from U.S. Geological Survey (USGS) digital orthophoto quarter quadrangles at a one-half meter ground resolution (Reference 8). Illinois State Geological Survey statewide ArcSDE raster mosaic of USGS digital raster graphs at a scale of 1:24,000 (Reference 9) and the USGS National Elevation Dataset were also used in the digitization (Reference 10).

The coordinate system used for the production of the digital FIRMs is Universal Transverse Mercator (UTM) North American Datum of 1983 (NAD 83) Geodetic Reference System 1980 (GRS80) spheroid.

This countywide FIS was performed under the Cooperating Technical Partners (CTP) Partnership Agreement No. EMC-2006-CA-7023 between the Illinois Department of Natural Resources (hereinafter referred to as IDNR) and FEMA, per the Mapping Activity Statement (MAS) No. IDNR06-01.

1.3 Coordination

Coordination and outreach activities were performed to create a climate of understanding and ownership of the mapping process at the state and local levels. These activities were ongoing throughout the entirety of the project.

The purpose of an initial consultation coordination officer (CCO) meeting, or project team meeting, is to discuss the scope of the project. An intermediate CCO meeting, or scoping meeting, is meant to continue outreach and create a climate of understanding throughout the process. A final CCO meeting, or open house, is held with public officials and the general public to review the results of the study.

Pre-Countywide FISs

The dates of the initial and final CCO meetings held for the pre-countywide studies for Adams County's incorporated communities and unincorporated areas are shown in Table 1, "CCO Meeting Dates for Pre-Countywide Studies."

Table 1 – CCO Meeting Dates for Pre-Countywide Studies

Community	Initial CCO Date	Final CCO Date
Adams County		
(Unincorporated Areas)	*	January 3, 1985
January 19, 1996 Revision	*	*
Quincy, City of	*	July 20, 1978

*Meeting not held

For the revised January 19, 1996 FIS for Adams County, Unincorporated Areas, the county was notified by FEMA in a letter dated October 24, 1994 that

preliminary copies of the revised areas of the FIS were being sent for review. A follow-up letter was sent on October 19, 1995 notifying the county that the final revised FIS had been completed with an effective date of January 19, 1996.

June 2, 2011
Countywide FIS

The project team meeting was held on August 8, 2006 in Quincy, Illinois and was attended by representatives of Adams County, the City of Quincy, and IDNR. This meeting was intended to discuss various issues and concerns for the study area. A scoping meeting was held on September 6, 2006 in Quincy, Illinois and was attended by representatives of Adams County, the City of Quincy, Illinois State Water Survey (ISWS), and IDNR.

A preliminary FIRM and FIS were prepared by merging effective FIS text, tables, and profiles with new study data. A preliminary Summary of Map Actions (PSOMA) was also prepared for all affected communities. The PSOMA lists pertinent information regarding Letters of Map Change (LOMCs) that will be affected by the issuance of the FIRM (i.e., superseded, incorporated, and revalidated). Preliminary copies of the FIRM, FIS, and SOMA were distributed to community officials for public review and comment.

The results of the study were reviewed at the open house held on May 5, 2010 in Quincy, Illinois, and attended by representatives of Adams County, the City of Quincy, ISWS, and IDNR. All problems raised at that meeting have been addressed in this study.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS covers the geographic area of Adams County, Illinois including the incorporated areas listed in Section 1.1.

The flooding information for the entire county, including both incorporated and unincorporated areas is shown. The vertical datum was converted from the National Geodetic Vertical Datum of 1929 (NGVD 29) to the North American Vertical Datum of 1988 (NAVD 88).

Typically, areas studied by detailed methods are selected with priority given to all known flood hazards and areas of projected development or proposed construction. Approximate analyses are used to study those areas having low development potential or minimal flood hazards.

Within Adams County, Unincorporated Areas, and the City of Quincy the stream previously named Tributary No. 3 is now named Tributary No. 3 to Cedar Creek.

The streams, or portions of streams, listed in Table 2, "Limits of New or Revised Detailed Study," have new or revised hydrologic and hydraulic analyses for this countywide FIS.

Table 2 – Limits of Revised or New Detailed Study

Flooding Source	Limits of Revised or New Detailed Study
Mississippi River	From the Adams/Pike County boundary at river mile 312.4 (miles above the Ohio River), approximately 5.5 miles downstream of the confluence of Mill Creek, to the Adams/Hancock county boundary at river mile 347.4 (miles above the Ohio River) approximately 4.2 miles upstream of Lock and Dam No. 20

The streams, or portions of streams, listed in Table 3, "Limits of Detailed Study," were studied in detail and are included in this report. The limits of detailed study are also indicated on the Flood Profiles (Exhibit 1) and on the FIRM (Exhibit 2).

Table 3 – Limits of Detailed Study

Flooding Source	Limits of Detailed Study
Cedar Creek	From approximately 230 feet above the confluence with Mississippi River to approximately 9,455 feet above the confluence with Mississippi River (approximately 1,030 feet above 12th Street)
Curtis Creek	From approximately 3,600 feet above the confluence with Mississippi River to approximately 33,250 feet above the confluence with Mississippi River (approximately 370 feet above the confluence of Tributary No. 3 to Curtis Creek)
Emery Creek	From the confluence with Curtis Creek to approximately 9,600 feet above the confluence with Curtis Creek (approximately 1,370 feet above 33rd Street)
Mississippi River	From the Adams/Pike County boundary at river mile 312.4 (miles above the Ohio River), approximately 5.5 miles downstream of the confluence of Mill Creek, to the Adams/Hancock county boundary at river mile 347.4 (miles above the Ohio River) approximately 4.2 miles upstream of Lock and Dam No. 20
Tributary No. 2	From the confluence with Curtis Creek to approximately 5,050 feet above the confluence with Curtis Creek (approximately 1,865 feet above 30th Street)

Table 3 – Limits of Detailed Study (continued)

Flooding Source	Limits of Detailed Study
Tributary No. 3 to Cedar Creek	From approximately 2,600 feet above the confluence with Cedar Creek to approximately 8,460 feet above the confluence with Cedar Creek (approximately 2,520 feet above 30th Street)
Tributary No. 3 to Curtis Creek	From the confluence with Curtis Creek to approximately 470 feet above the confluence with Curtis Creek

This countywide FIS incorporates new detailed study information for a portion of Curtis Creek within Adams County and the City of Quincy, and Tributary No. 3 to Curtis Creek within Adams County, which was performed in support of the 2006 FEMA Letter of Map Revision (LOMR) 05-05-2301P listed in Table 4. Further information regarding LOMR 05-05-2301P is available by contacting FEMA as indicated in Section 8.0 of this FIS.

Previous maps and reports for Adams County are community-based. The maps and reports for adjacent communities may not reflect the same data. The conversion from community-based mapping to countywide mapping includes resolution and consolidation of data within the countywide FIS, as well as showing the full extent of the floodplains and floodways through mapped reaches on the countywide FIRM.

The conversion to countywide mapping may result in new or revised base flood elevations (BFEs) and floodway data for communities. The countywide FIRM may show detailed studies where previously approximate studies were shown, and/or may show flood hazard areas where previously no flood hazard areas were shown.

Also, special flood hazard areas were delineated for limited distances between study reaches using additional information from the model or interpolated for consistency.

Summary of Map Actions (SOMA)

Letters issued by FEMA that resulted in map changes (Letter of Map Revision [LOMR] and/or Special Response [SR]) of sufficient scale to be incorporated in this countywide FIS are listed in Table 4, “Letters of Map Change.” The “Community” column entries shown as Adams County refer to the unincorporated areas of the county.

Table 4 - Letters of Map Change

LOMC Type	Case Number	Effective Date	Community	Flooding Source	Project Identifier
LOMR	*	05/02/1986	Adams County	Unnamed Tributary to Curtis Creek	Section 8, Township 2 South, Range 8 West
LOMR	96-05-155P	09/30/1996	Adams County	Unnamed Tributary to Cedar Creek	Just East of Seminary Road
LOMR	03-05-5163P	03/10/2004	Adams County	Mississippi River	Sny Island Levee
LOMR	04-05-4060P	01/24/2005	Adams County	Unnamed Tributary to Tributary No. 3 to Cedar Creek	Sharkey Flood Study
LOMR	02-05-1533P	07/11/2002	Adams County; Quincy, City of	Cedar Creek	Vonderharr Study – 24th and Wisman Lane
LOMR	05-05-2301P	07/31/2006	Adams County; Quincy, City of	Curtis Creek, Tributary No. 3 to Curtis Creek	Shady Creeks Subdivision
LOMR	06-05-C263P	04/30/2007	Adams County; Quincy, City of	Emery Creek	Transitions Campus Zone A Removal
LOMR	09-05-5987P	9/1/2010	Adams County; Quincy, City of	Tributary No. 1 and Unnamed Tributary to Tributary No. 1	Tributary No, 1, A Tributary to Curtis Creek
LOMR	05-05-0416P	05/18/2005	Quincy, City of	Cedar Creek	Stone Creek Subdivision
LOMR	09-05-3055P	07/21/2009	Quincy, City of	Unnamed Tributary	Quincy Storage and Transfer

*Data not available

2.2 Community Description

Adams County is located in west-central Illinois with the Mississippi River forming its western border. Adams County lies approximately 275 miles southwest of Chicago and 150 miles northwest of St. Louis. The county is bordered on the north by Hancock County; on the east by Schuyler, Pike, and Brown Counties; on the south by Pike County; and on the west by Lewis County and Marion County, Missouri. In 2000, Adams County's population was 68,277 (Reference 11).

The City of Quincy, the county seat and largest community, is located along the eastern bank of the Mississippi River in west-central Adams County. In 2000,

The City of Quincy, the county seat and largest community, is located along the eastern bank of the Mississippi River in west-central Adams County. In 2000, Quincy's population was reported to be 40,366 (Reference 12), approximately 60 percent of the county's population. Quincy has developed into the commercial, industrial, recreational, and transportation hub of western Illinois. The industrial/commercial complex centered in Quincy not only provides employment for Adams County but also provides a major share of the employment within a 25-mile radius. Development in the Mississippi River floodplain of Quincy is primarily commercial, industrial, and recreational with some scattered residential uses. Approximately one-third of Quincy's employment from manufacturing is found at industries located on the Mississippi River floodplain (Reference 3).

Transportation facilities are well-developed throughout Quincy and the county. U.S. Highway 24 and State Highway 104 cross Adams County from east to west. State Highways 61, 94, 96 and 336 as well as the Interstate Loop 172 provide north-south transportation routes. Interstate 72 connects Quincy with several other interstate transportation routes within the state. Barge transportation service is available on the Mississippi River, and two major railroads provide both freight and passenger train service for Adams County. Quincy Regional Airport provides daily flights to the St. Louis Lambert International Airport (Reference 13)

Agriculture is a major economic force in Adams County. The county ranks high among Illinois counties in numbers of total cattle and in numbers of milk and beef cattle. Corn, soybeans, wheat, and hay are the major crops. Also grown in the county are sorghum and specialty crops such as sweet corn, sod, ornamental plants, nursery stock as well as several orchards (Reference 13).

Adams County is a rural county with a total land area of 873 square miles or 558,825 acres. Fifty-three percent of the county's total area is devoted to cropland and 24 percent is covered in grassland. The remainder of the county is forest/woodland (15 percent), wetland (4 percent), open water (3 percent), and urban land (2 percent). Of the 102 Illinois counties, Adams County ranks first in acreage (65,993) devoted to small grains such as wheat and oats. The county also ranks fourth in grassland acreage (131,617) and sixth in stream acreage (4,906) among Illinois counties (Reference 14).

The western two-thirds of Adams County is drained by the main branch of the Mississippi River. Two rivers in the Illinois River system drain the remainder of the county: the La Moine River system drains the northeast corner, and the main branch of the Illinois River drains the southeast. The rivers in the western region generally flow west to the Mississippi River, while the other rivers in the county generally flow to the east and southeast to the Illinois River (Reference 15).

Adams County has extremes in topography that are mainly the result of erosion. The northeastern and central parts of the county have large, nearly level areas that are part of a relatively undissected upland drainage divide between the

Mississippi and Illinois Rivers. Other large, nearly level areas are on the floodplain along the Mississippi River. The highest point in the county is about 860 feet above sea level and is near the southwest corner of the county. The lowest point is about 460 feet above sea level and found on the floodplain along the Mississippi River near the southwest corner of the county. The Illinoian terminal moraine, which also provides relief, extends from about the northwestern part of the county to the southeastern part (Reference 13).

Adams County has a typical mid-western continental climate that is characterized by cold winters and hot summers. According to records from the weather station located at the Quincy Regional Airport (station 117072) the average annual temperature for Adams County is 52.3 degrees Fahrenheit (°F). The coldest average temperatures are in January and the warmest average temperatures are in July. The coldest temperature recorded was -22 °F on December 22, 1989. The warmest temperature recorded was 112 °F on July 14, 1954. The average annual total precipitation for Adams County at the Quincy Regional Airport is 38.44 inches which includes an average annual snowfall of 24.4 inches. The largest daily snowfall on record was 10.9 inches on February 25, 1993. The largest recorded daily rainfall total was 5.84 inches on June 14, 1950 (Reference 16).

2.3 Principal Flood Problems

The low-lying areas of Adams County and the City of Quincy are subject to periodic flooding caused by overflow of the Mississippi River, Curtis Creek, Cedar Creek, Emery Creek, Tributary No.1, Tributary No. 2, and Tributary No. 3 to Cedar Creek. The most severe flooding, especially on the Mississippi River, occurs in winter and early spring as a result of heavy rains and spring thaw. During periods of heavy rainfall, the smaller stream channels become overloaded with surface waters and flood certain residential sections along their corridors.

During the summer of 1993, a combination of wet soil conditions and significant rainfall in the Upper Midwest resulted in severe flooding of the upper Mississippi River and its tributaries. Rainfall totals for June to August 1993 surpassed 12 inches in many Midwestern states, including Illinois. The 1993 flood remains the flood of record for the Mississippi River at Quincy, Illinois, where it reached a record river stage height of 32.13 feet on July 13, 1993. The area inundated, intensity, and long duration of the 1993 flooding make this flood one of the greatest natural disasters in U.S. history. Both the Missouri and Mississippi Rivers reached record heights, far exceeding the 1-percent-annual-chance flood event (Reference 17). Severe damages occurred in nine states: Illinois, Iowa, Kansas, Minnesota, Missouri, North and South Dakota, Nebraska, and Wisconsin (Reference 18).

In Illinois, floodwaters exceeded failed levees and destroyed farmland, towns, and transportation routes. Eighteen Illinois communities were severely flooded, resulting in the displacement of at least 16,000 people, the loss of more than

10,000 jobs, and destruction of or damage to more than 6,000 homes and 17 public water supply entities. Midwest agriculture suffered the most damage of any industry, with flooding of approximately 873,000 acres of Illinois farmland, including 588,000 acres of corn and soybeans. The flooded farmland represented approximately 3 percent of the state's planted acreage. Damage to cropland and unplanted land in Illinois was estimated at $425 million, with an additional $110 million in damages to buildings and farm equipment (Reference 19).

Fifteen years later record flood stages for the upper Mississippi River were once again established. The year 2008 experienced extremely heavy precipitation across Illinois, making it the state's second wettest year only to 1993 since quality weather records began in the 1880s. The wet conditions resulted in flooding and above average streamflows during every month of the year. The wet spring brought severe flooding to several tributaries of the Mississippi River in Iowa and Illinois. This situation, plus the heavy rainfall in late May and early June, created major flooding along the Mississippi River from Fulton, Illinois south to Chester, Illinois (Reference 20).

During the 2008 flood event, Mississippi River levels rose to near record highs set in 1993, creating serious impacts. The USACE closed 13 river locks by June 12, 2008 stopping all barge movements. Damages were considerable as 29 Illinois levees gave way, and 22 Illinois counties along the river were declared disaster areas. Flooding of farm lands along the Mississippi River, due to the numerous levee failures, inundated 30,000 acres near Quincy, Illinois. River stages second only to the 1993 record were attained at Quincy, Illinois on June 18, 2008 when a river stage of 30.80 feet was reached on the Mississippi River. The 2008 Mississippi River flood heights did surpass the 1993 record at Burlington, Iowa, Keithsburg, Illinois, and Gladstone, Illinois. Overall in 2008 the total insured property losses in Illinois from flooding and heavy rain damages were $645 million (Reference 20).

The greatest floods of record on the Mississippi River at Quincy, Illinois occurred in 1993, 2008, and 1973. Table 5, "Historical Flood Data" summarizes the river stages of record on the Mississippi River at Quincy, Illinois. Information for the table was collected from the USACE website RiverGages.com (Reference 21). Please note the datum of the gage is MSL 1912 (Reference 22).

Table 5 – Historical Flood Data

Mississippi River at Quincy, IL – USACE (Rock Island District) Gage

Datum of gage is 458.59 feet above MSL 1912

Flood Stage: 17 feet

Date	River Stage (feet)
07/13/1993	32.13
06/18/2008	30.80
04/23/1973	28.90
05/16/2001	27.31
10/04/1986	25.30
05/29/1996	24.45
04/29/1995	24.20
04/05/1983	23.80
04/27/2001	23.50
04/15/1998	23.36
05/05/2008	23.11

2.4 Flood Protection Measures

Flood protection measures such as culverts, bridges, diversion channels, aqueducts, levees, pumping facilities, and diversion channels exist in Adams County along the Mississippi River. There are five levee systems in the county along the Mississippi River.

The South Quincy Drainage and Levee System extends from Mississippi River mile 318.2 to river mile 325.4. The district encompasses approximately 5,515 acres on the Illinois side of the Mississippi River. This levee system also includes levees along Curtis Creek, Mill Creek and the Texas Chute.

The Sny Island Levee and Drainage District (SILDD) levee system exists in southern Adams County along the Mississippi River. In its entirety, the SILDD levee system extends from Mississippi River mile 266.0 to river mile 315.4, measured from the confluence with the Ohio River. The SILDD is a complex network of hydraulic structures that includes culverts, bridges, three diversion channel systems, two sets of aqueducts, and three pumping stations. The diversion channels separate the district into four major interior areas and two smaller areas, referred to as Reaches 1 through 4.

Levees exist in the study area that provide the county with some degree of protection against flooding. However, levees that do not protect against the 1-percent-annual-chance flood are not considered in the hydraulic analysis of the 1-percent-annual-chance floodplain.

3.0 ENGINEERING METHODS

For the flooding sources studied by detailed methods in Adams County, 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 which equals or exceeds the 1-percent-annual-chance flood in any 50-year period is approximately 40 percent (4 in 10), and, for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potential based on conditions existing in Adams County 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 county.

Pre-Countywide FISs

Adams County, Unincorporated Areas, and the City of Quincy have a previously printed FIS report. Due to new detailed study data, pre-countywide study data on the Mississippi River has been superseded. The hydrologic analyses described in those reports that have not been superseded by new study information are summarized below.

The discharge-frequency data for Curtis Creek, Cedar Creek, and Emery Creek were determined using a regional relationship relating basin characteristics to streamflow characteristics (Reference 23). Tributary No. 2 and Tributary No. 3 to Cedar Creek discharge-frequency data were determined using a method developed by the Soil Conservation Service, which utilizes relationships of streamflow, hydrologic soil type, land use, and drainage area (Reference 24).

It should be noted that for this countywide FIS the hydrologic analyses have been revised for a portion of Curtis Creek from approximately 900 feet downstream to 700 feet upstream of the confluence with Tributary No. 3 to Curtis Creek. Refer to the following section for further information.

Information on the methods used to determine peak discharge-frequency relationships for the streams studied as part of this countywide FIS is given below.

Mississippi River flood elevations were determined by the January 2004 *Upper Mississippi River System Flow Frequency Study* (UMRSFFS) (Reference 6). The UMRSFFS was developed by five Corps of Engineer Districts (St. Paul, Rock Island, Omaha, Kansas City, St. Louis) and coordinated through representatives from seven federal agencies and seven states. The study addresses flooding of the Illinois River from Lockport to the mouth, the Missouri River below the Gavins Point Dam to the mouth, and the Mississippi River from St. Paul to the confluence with the Ohio River. The St. Louis District conducted the study of the Mississippi River from the confluence with the Ohio to Lock and Dam 22 tailwater (river mile 301.2) and the Illinois River from the confluence with the Mississippi River to the La Grange Lock and Dam tailwater (river mile 80.2). The Rock Island District conducted the study of the Mississippi River from river mile 301.2 to 614.9 and the Illinois River from river mile 80.2 to Lockport, Illinois.

Technical aspects of the study include impacts of levees, land use change, and climate variation. Hydrology was accomplished based on 100 years of record from 1898 to 1998 using a log-Pearson Type III distribution for unregulated flows at gages on the Mississippi River. The Illinois River flows were determined using data from the period 1940 to 1998. In situations where historic records were not adequate to develop discharge frequency relationships or to verify the results, hydrologic modeling was used to create synthetic flows based on rainfall.

As part of this mapping project, Letter of Map Revision (LOMR) 03-05-5163P for the Sny Island Levee & Drainage District (SILDD), has been incorporated into the countywide FIS and FIRM for Adams, Calhoun, and Pike Counties (Reference 25). The LOMR includes analyses of the interior drainage (Reference 7), which were obtained for this study.

The UMRSFFS hydrologic and hydraulic data have been incorporated on the Mississippi River. Backwater elevations for the interior drainage area of the SILDD were adjusted to the UMRSFFS elevations.

Situated in the Mississippi River floodplain, the SILDD levee system extends from Mississippi River mile 266.0 to river mile 315.4 measured from the confluence with the Ohio River. The district encompasses approximately 118,848 acres on the Illinois side of the Mississippi River extending from Calhoun County at the southern end, through Pike County, and into Adams County at the northern end.

The SILDD is a complex network of many hydraulic structures including culverts, bridges, diversion channels, aqueducts, and pumping stations. The district is divided by three diversion channels systems. The Hadley-McCraney diversion drains 122.9 square miles; the Kiser Creek diversion drains 59.6 square miles; and Sixmile-Bay Creek diversion drains 211.5 square miles.

The diversion channels, leveed their entire length, originate at the bluff line and terminate at the main line levees on the Mississippi River. They separate the district into four major interior areas and two smaller areas; referred to as reaches in previous studies (Reference 26). Reach 1 is the most upstream reach. Reach 2 is the reach between the Hadley-McCraney channel and the Kiser Creek diversions. Reach 3 is the reach between Kiser Creek and the Sixmile-Bay Creek diversions. Reach 4 is the most downstream reach.

The two small interior areas were formed when the diversion channels were constructed. The first area is between Hadley Diversion Ditch and McCraney Diversion Ditch from the bluff line to their convergence and the second area is between Sixmile Creek Diversion Ditch and Bay Creek Diversion Ditch upstream of their convergences. These areas are connected to Reach 1 and Reach 3, respectively, by means of inverted siphons.

The Sny River, referred to as The Sny, occupies a remnant channel of the Mississippi River and is approximately 60 miles long. It flows in a southerly direction from the most upstream end of Reach 1 to the downstream end of Reach 4. There are two sets of aqueducts that allow flow from The Sny to pass under the Hadley-McCraney and the Kiser Creek diversion levees. The district contains three pumping stations located in reaches 1, 3 and 4. Frequency analysis was performed on pump station bay elevation data to calibrate both the hydrologic and hydraulic models.

For the interior drainage study, watershed runoff was calculated using the USACE flood hydrograph package, HEC-HMS (Reference 27). Design rainfall was taken from *Bulletin 71 – Rainfall Frequency Atlas of the Midwest* (Reference 28), using the Soil Conservation Service (SCS) type-II rainfall distribution.

The curve number method was selected to transform the rainfall into precipitation excess. Unit hydrographs for the bottomland sub-watersheds were available from a 1954 flood control study done by the USACE, Rock Island District (Reference 29). These 6-hour unit hydrographs were transformed into 24-hour unit hydrographs using the S-hydrograph approach. The bluff sub-watersheds were transformed using the SCS Unit Hydrograph lag procedure included in TR-55 (Reference 24). Channel routing was calculated using the Muskingum-Cunge method (Reference 30).

More detailed interior drainage area hydrologic information is available in the interior drainage study report. (Reference 7).

Also for this countywide FIS, hydrologic analyses were incorporated for a portion of Curtis Creek within Adams County and the City of Quincy, and Tributary No. 3 to Curtis Creek within Adams County as part of the Letter of Map Revision (LOMR) Process. Further information regarding the hydrologic analyses prepared in support of LOMR 05-05-2301P listed in Table 4 is available by contacting FEMA as indicated in Section 8.0 of this FIS.

A summary of the drainage area-peak discharge relationships for all the streams studied by detailed methods is shown in Table 6, "Summary of Discharges."

Table 6 - Summary of Discharges

		Peak Discharges (cubic feet per second)			
Flooding Source and Location	*Drainage Area (square miles)*	*10-Percent-Annual-Chance*	*2-Percent-Annual-Chance*	*1-Percent-Annual-Chance*	*0.2-Percent-Annual-Chance*
Cedar Creek					
At mouth	8.39	2,550	3,950	4,550	5,975
3,200 feet upstream of 12th Street	5.44	2,120	3,300	3,810	5,030
Curtis Creek					
At mouth	7.51	2,520	3,910	4,510	5,940
At 8th Street	6.40	2,245	3,495	4,030	5,305
At confluence with Tributary No. 1	5.20	1,780	2,770	3,190	4,190
At confluence with Emery Creek	2.20	980	1,435	1,775	2,340
250 feet upstream of 36th Street	1.12	655	1,030	1,195	1,580
2,000 feet upstream of Cross Section H	0.73	515	810	940	1,250
Emery Creek					
At mouth	2.11	950	1,490	1,720	2,260
Just upstream of Route 96	1.81	890	1,390	1,610	2,115
Just upstream of Maine Street	1.48	760	1,195	1,380	1,820
Just upstream of 36th Street	1.00	400	630	730	970
Mississippi River					
At Quincy Memorial Bridge (US Route 24) at mile 327.0	135,000	287,000	380,000	425,000	529,000
Tributary No. 2					
At mouth	0.62	575	1,010	1,340	1,770
Just upstream of Route 96	0.17	215	400	535	750
Tributary No. 3 to Cedar Creek					
At mouth	2.49	1,075	1,768	2,250	3,000
Just upstream of 36th Street	1.27	920	1,560	2,010	2,700
Tributary No. 3 to Curtis Creek	*	*	*	*	*

*Data not available.

The stillwater elevations have been determined for the 10-, 2-, 1-, and 0.2-percent-annual-chance floods for the flooding sources studied by detailed methods and are summarized in Table 7, "Summary of Stillwater Elevations."

Table 7 - Summary of Stillwater Elevations

	Elevation (feet NAVD 88)			
Flooding Source and Location	*10-Percent-Annual-Chance*	*2-Percent-Annual-Chance*	*1-Percent-Annual-Chance*	*0.2-Percent-Annual-Chance*
Austin Creek				
Settling basin	*	*	471.2	*
Fall Creek				
Settling basin	*	*	472.6	*
South Quincy Drainage and Levee District				
Interior ponding area	*	*	467.9	*
The Sny Reach 1				
Interior ponding area	*	*	457.9	*

*Data not available

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 encouraged to use the flood elevation data presented in this FIS in conjunction with the data shown on the FIRM.

Pre-Countywide FISs

Adams County, Unincorporated Areas, and the City of Quincy have a previously printed FIS report. Due to new detailed study data, pre-countywide study data on the Mississippi River has been superseded. The hydraulic analyses described in those reports that have not been superseded by new study information are summarized below.

Cross sections for streams were obtained from field surveys. All bridges, dams, and culverts were field surveyed to obtain elevation data and structural geometry.

Water-surface profiles for Curtis Creek, Cedar Creek, Emery Creek, Tributary No. 2, and Tributary No. 3 to Cedar Creek were computed using the USACE HEC-2 step-backwater computer program (Reference 31). Recorded high water

marks and historical flood data verified the profiles. Starting water-surface elevations were developed using the slope/area method.

The interior drainage analysis used to compute the 1-percent-annual-chance ponding elevation behind the South Quincy Drainage and Levee District was obtained from the USACE, Rock Island District (Reference 32).

It should be noted that for this countywide FIS the hydraulic analyses have been revised for a portion of Curtis Creek from approximately 900 feet downstream to 700 feet upstream of the confluence with Tributary No. 3 to Curtis Creek. Refer to the following section for further information.

June 2, 2011
Countywide FIS

Cross sections for the Mississippi River were developed using channel hydrographic surveys in conjunction with Scientific Assessment and Strategy Team (SAST) floodplain digital terrain data collected in 1995 and 1998. The floodplain digital terrain models were developed from 1998 aerial photography and photogrammetry and digital hydrographic surveys that date from 1997 or later; supplemented as necessary with USGS National Elevation Dataset (NED) 1/3 arc second coverage (Reference 10). For areas where no digital hydrographic surveys were available, such as in some side channels and chutes, depths were estimated from the most current printed surveys available (Reference 6).

The UMRSFFS (discussed in Section 3.1) is based on an unsteady flow model (UNET). Levee failure was assumed at the top of existing levee grade based on an upstream and a downstream point. The UNET model was calibrated by both stage and discharge at gaging locations primarily by adjusting roughness coefficients and estimated lateral inflows. Some special considerations and techniques were required to address especially complex flow reaches and levee failure impacts.

Backwater effects from the UMRSFFS have been considered for tributaries to the Mississippi River within the county.

The backwater elevation of Mill Creek was based on the 1-percent-annual-chance flood elevation (Base Flood Elevation) of the Mississippi River at river mile 318.4.

The backwater elevation of Curtis Creek was based on the 1-percent-annual-chance flood elevation of the Mississippi River at river mile 325.3.

The backwater elevation of Cedar Creek was based on the 1-percent-annual-chance flood elevation of the Mississippi River at river mile 328.2.

The backwater elevation of Bear Creek was based on the 1-percent-annual-chance flood elevation of the Mississippi River at river mile 341.5.

The UMRSFFS hydrologic and hydraulic data have been incorporated on the Mississippi River. Backwater elevations for the interior drainage area of the SILDD were adjusted to the UMRSFFS elevations.

The Mississippi River cross sections from the UMRSFFS were truncated for cartographic purposes at levees with interior drainage base flood elevations to clearly show the interior drainage study. The fully extended cross sections were used to delineate the Mississippi River 0.2-percent-annual-chance floodplain through the Sny Levee and South Quincy Levee reaches.

The SILDD is separated into reaches (discussed in Section 3.1), with some of the major upland watersheds being directly diverted to the Mississippi River. Detention basins help to control interior flooding and sediment for the remaining watersheds. The settling basins were assessed using HEC-HMS.

The Sny Reaches 1, 2, and 3 were modeled using HEC-RAS (Reference 33). The Sny Reach 4 was modeled as a level pool. The water surface profiles in Reaches 1, 2, and 3 were almost completely flat due to the constrictions at the pump stations and aqueducts; therefore, single base flood elevations are provide for Reaches 1 – 4 as noted in Table 7, "Summary of Stillwater Elevations."

Cross-sectional data for the HEC-RAS model of the Sny was obtained from SAST, Scientific Assessment and Strategy Team, data acquired from the U.S. Army Corp of Engineers, St. Louis District (Reference 34). HEC-GeoRAS was used to extract stream centerlines and cross-sections (Reference 35).

For the Hadley-McCraney diversion system, the Sixmile-Bay diversion system, and the Kiser diversion system, HEC-RAS models from a 1996 Reconnaissance Report were obtained from the U.S. Army Corp of Engineers, Rock Island District (Reference 26).

The water surface profiles in the diversion channels are controlled by the Mississippi River near their mouths and by runoff in the creeks upstream. The Normal Depth approach was used to establish the downstream water surface elevations for the diversion channels that join the Mississippi River, Hadley-McCraney Diversion Ditch, Kiser Creek Diversion Ditch, and Sixmile Creek Diversion Ditch. The Hadley-McCraney system and the Sixmile-Bay system models were revised to show a combined approach for junction modeling.

More detailed interior drainage area hydraulic information is available in the interior drainage study report (Reference 7).

Also for this countywide FIS, hydraulic analyses were incorporated for a portion of Curtis Creek within Adams County and the City of Quincy and Tributary No. 3 to Curtis Creek within Adams County as part of the Letter of Map Revision (LOMR) Process. Further information regarding the hydraulic analyses prepared in support of LOMR 05-05-2301P listed in Table 4 is available by contacting FEMA as indicated in Section 8.0 of this FIS.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross section locations are also shown on the FIRM (Exhibit 2).

Channel and overbank roughness factors (Manning's "n") used in the hydraulic computations were chosen by engineering judgment and were based on field observations of the stream and floodplain areas. The range of the Manning's "n" coefficients for each stream is shown in Table 8, "Roughness Coefficients (Manning's 'n' Values)."

Table 8 – Roughness Coefficients (Manning's "n" Values)

Stream	Channel "n"	Overbank "n"
Cedar Creek	0.017 – 0.05	0.06 – 0.07
Curtis Creek	0.03 – 0.04	0.06 – 0.08
Emery Creek	0.04 – 0.05	0.06 – 0.09
Mississippi River	0.022 – 0.04	0.04 – 0.12
Tributary No. 2	0.05	0.07 – 0.08
Tributary No. 3 to Cedar Creek	0.017 – 0.04	0.07
Tributary No. 3 to Curtis Creek	*	*

*Data not available

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.

3.3 Vertical Datum

All FISs 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 FISs 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 and FIRMs are being prepared using NAVD 88 as the referenced vertical datum.

All flood elevations shown in this FIS and on the FIRM are referenced to NAVD 88. Structure and ground elevations in the community must, therefore, be referenced to NAVD 88. It is important to note that adjacent counties may be referenced to NGVD 29. This may result in differences in base flood elevations (BFEs) across the county boundary.

Effective information for this FIS was converted from NGVD 29 to NAVD 88 based on data presented in Figure 1 and Table 9a. Computations show a single average conversion factor of – 0.244 feet (NGVD 29 – 0.244 = NAVD 88) for the county. The conversion factor was applied uniformly across the county, and was used to prepare the Floodway Data Tables, Flood Profiles, and FIRM, with the exception of The Sny Reach 1 – Interior ponding area and the Mississippi River.

The countywide conversion factor could not be used for The Sny Reach 1 – Interior ponding area. Instead, the Multiple Conversion Factors (stream-by-stream) method was required. The stream-by-stream conversion factor is applied when a stream is located in two or more counties (multi-county stream), whereby the average conversion factor determined for each county differs from each other. For the stream-by-stream method, the stream is assigned an average conversion factor based on the conversion factors at three points along the stream. These results are shown in Table 9b.

The cross section specific conversion factor (cross section-by-cross section) method was applied to the Mississippi River for Adams County. The cross section specific conversion factor method is applied to all Illinois reaches of the Mississippi River for consistency within the state.

The data presented in the *Upper Mississippi River System Flow Frequency Study* (Reference 6) were incorporated into this FIS and associated FIRMs. This information was converted to NAVD 88 based on data presented in Tables 9c. A conversion factor was calculated using the latitude and longitude of each Mississippi River cross section. The conversion factor for each cross section was used to prepare the new Mississippi River Floodway Data Table, Flood Profile, and FIRMs.

For more information on NAVD 88, see *Guidelines and Specifications for Flood Hazard Mapping Partners Appendix B: Guidance for Converting to the North American Vertical Datum of 1988* (Reference 36) available at http://www.fema.gov/plan/prevent/fhm/dl_cgs.shtm 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).

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 county. Interested individuals may contact FEMA to access these data.

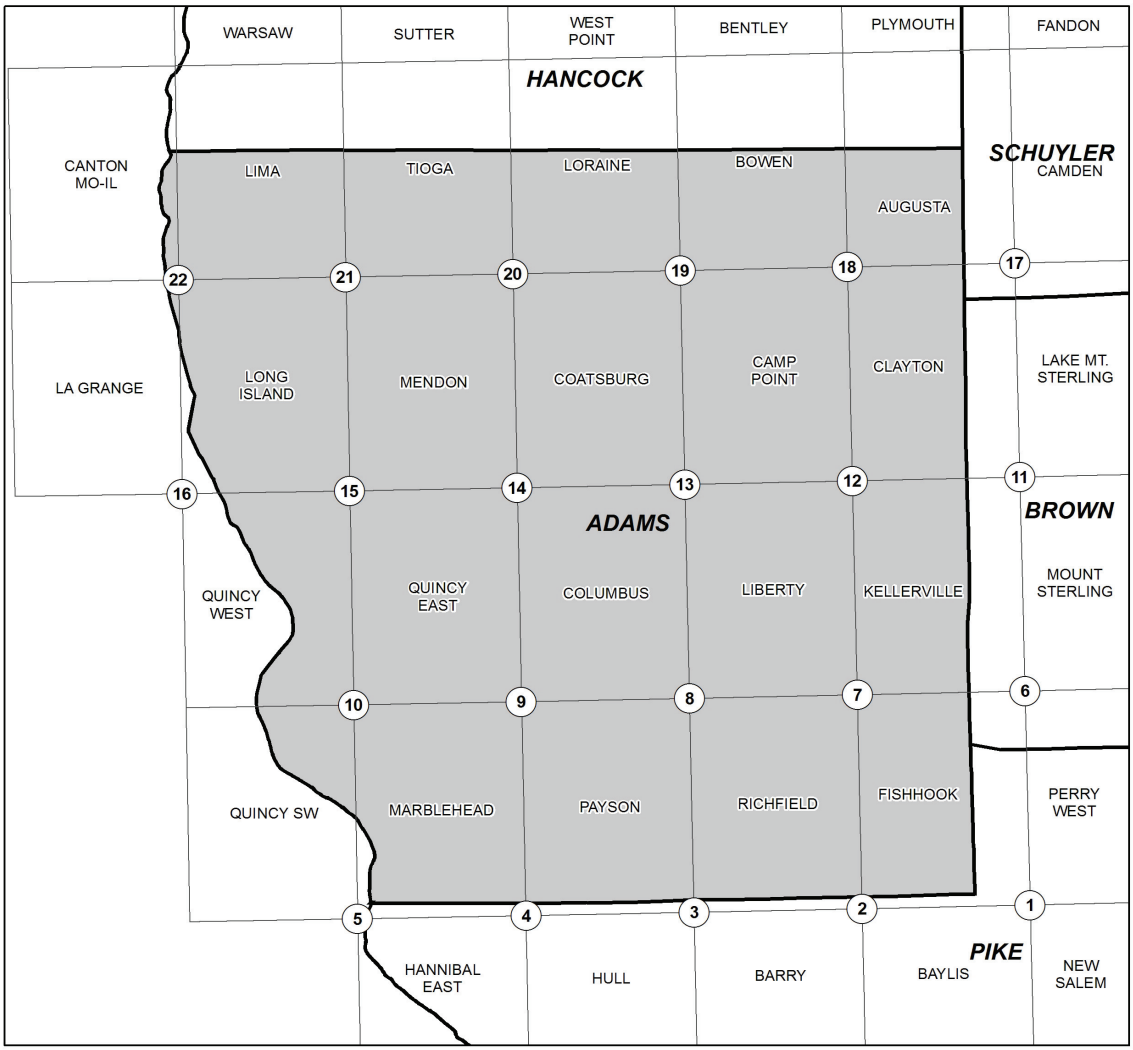

Figure 1 – Vertical Datum Conversion
USGS Quadrangle Corner Intersections
The change in elevation for each Point ID is listed in Table 9a.

Table 9a - Vertical Datum Conversions
Single Conversion Factor (countywide) Method
Adams County

Point ID #	Quadrangle Name	Corner	NAD83 Latitude (dec. deg.)	NAD83 Longitude (dec. deg.)	NGVD 29 to NAVD 88 Elevation Change (feet)
1	New Salem	15093	39.750	90.875	-0.240
2	Baylis	15097	39.750	91.000	-0.249
3	Barry	15101	39.750	91.125	-0.256
4	Hull	15105	39.750	91.250	-0.259
5	Hannibal East	15109	39.750	91.375	-0.223
6	Perry West	15669	39.875	90.875	-0.272
7	Fishhook	15673	39.875	91.000	-0.256
8	Richfield	15677	39.875	91.125	-0.230
9	Payson	15681	39.875	91.250	-0.236
10	Marblehead	15685	39.875	91.375	-0.266
11	Mount Sterling	16245	40.000	90.875	-0.249
12	Kellerville	16249	40.000	91.000	-0.243
13	Liberty	16253	40.000	91.125	-0.230
14	Columbus	16257	40.000	91.250	-0.213
15	Quincy East	16261	40.000	91.375	-0.240
16	Quincy West	16265	40.000	91.500	-0.282
17	Lake Mt Sterling	16821	40.125	90.875	-0.272
18	Clayton	16825	40.125	91.000	-0.243
19	Camp Point	16829	40.125	91.125	-0.230
20	Coatsburg	16833	40.125	91.250	-0.217
21	Mendon	16837	40.125	91.375	-0.220
22	Long Island	16841	40.125	91.500	-0.233

Range of conversion values	-0.282 through -0.213
Average conversion factor	**-0.244**
Maximum variance from the average conversion (Within 0.25-foot tolerance)	0.038
Maximum variance from a no-conversion value	0.282

Table 9b - Vertical Datum Conversions
Multiple Conversion Factor (stream by stream) Method
The Sny Reach 1 – Interior ponding area

Point Location	River Mile	NAD83 Latitude (dec deg.)	NAD83 Longitude (dec.deg.)	NGVD29 to NAVD88 Elevation Change (Feet)	Maximum Offset	Average Conversion
The Sny Reach 1 – Interior ponding area						
Downstream	0.50	39.620	91.184	-0.230		
Intermediate	9.00	39.725	91.281	-0.246		
Upstream	17.64	39.812	91.349	-0.266	0.019	**-0.247**

Table 9c - Vertical Datum Conversions
Cross Section Specific (cross section-by cross-section) Conversion Factors
Mississippi River

Cross Section ID	NAD83 Latitude (dec. deg.)	NAD83 Longitude (dec. deg.)	NGVD29 to NAVD88 Elevation Change (feet)
312.7	39.771	91.355	-0.2
313	39.773	91.357	-0.2
313.5	39.777	91.361	-0.2
314	39.781	91.365	-0.3
314.5	39.787	91.371	-0.3
315	39.793	91.378	-0.3
315.5	39.797	91.384	-0.3
316	39.803	91.389	-0.3
316.7	39.807	91.395	-0.3
317	39.810	91.399	-0.3
317.5	39.816	91.404	-0.3
318	39.821	91.409	-0.3
318.6	39.827	91.416	-0.3
319	39.833	91.422	-0.3
319.6	39.840	91.428	-0.3
320	39.846	91.432	-0.3
320.5	39.849	91.437	-0.3
321	39.853	91.450	-0.3
321.4	39.860	91.443	-0.3
321.6	39.866	91.445	-0.3
322	39.870	91.447	-0.3
322.5	39.877	91.450	-0.3
323	39.883	91.453	-0.3
323.4	39.889	91.455	-0.3
324	39.895	91.458	-0.3
324.8	39.904	91.474	-0.3
325	39.907	91.463	-0.3
325.4	39.911	91.467	-0.3
326	39.917	91.471	-0.3
326.5	39.923	91.470	-0.3
326.8	39.927	91.471	-0.3
327.1	39.929	91.471	-0.3
327.6	39.935	91.470	-0.3
328	39.941	91.471	-0.3
328.5	39.945	91.471	-0.3
329	39.952	91.494	-0.3
329.6	39.959	91.507	-0.3

Table 9c - Vertical Datum Conversions (continued)
Cross Section Specific (cross section-by cross-section) Conversion Factors
Mississippi River

Cross Section ID	NAD83 Latitude (dec. deg.)	NAD83 Longitude (dec. deg.)	NGVD29 to NAVD88 Elevation Change (feet)
330	39.967	91.468	-0.3
330.6	39.972	91.468	-0.3
331	39.978	91.468	-0.3
331.5	39.983	91.468	-0.3
332	39.989	91.470	-0.3
332.5	39.997	91.469	-0.3
333	40.004	91.469	-0.3
333.6	40.012	91.464	-0.3
334	40.018	91.457	-0.3
334.6	40.026	91.453	-0.3
335	40.033	91.450	-0.3
335.5	40.039	91.449	-0.3
336	40.046	91.446	-0.3
336.4	40.051	91.447	-0.3
337	40.059	91.447	-0.3
337.5	40.066	91.449	-0.3
338	40.073	91.448	-0.3
338.5	40.079	91.450	-0.3
339	40.087	91.451	-0.2
339.5	40.093	91.452	-0.2
339.9	40.099	91.455	-0.2
340.5	40.107	91.454	-0.2
341	40.114	91.456	-0.2
341.4	40.120	91.451	-0.2
342.3	40.132	91.468	-0.2
342.6	40.136	91.469	-0.2
343	40.141	91.471	-0.2
343.2	40.145	91.469	-0.2
343.7	40.150	91.471	-0.2
343.9	40.155	91.471	-0.2
344.5	40.161	91.469	-0.2
345.1	40.167	91.470	-0.2
345.7	40.175	91.471	-0.2
346	40.182	91.469	-0.2
346.4	40.188	91.467	-0.2
347	40.195	91.470	-0.2

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages state and local governments to adopt sound floodplain management programs. Therefore, each FIS provides 1-percent-annual-chance flood elevations and delineations of the 1- and 0.2-percent-annual-chance floodplain boundaries and 1-percent-annual-chance floodway to assist communities in developing floodplain management measures. This information is presented on the FIRM and in many components of the FIS report, including Flood Profiles, Floodway Data tables, and Summary of Stillwater Elevation tables. Users should reference the data presented in the FIS 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 the flooding sources 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 on the basis of available topography.

Pre-Countywide FISs

Tributary No. 1, studied by approximate methods, was delineated using topographic maps at a scale of 1:9600, with a contour interval of 20 feet (Reference 37, 38). For the remaining streams studied by approximate methods, 1-percent-annual-chance floodplain boundaries were obtained from the Flood Hazard Boundary Maps for the City of Quincy and Adams County, Unincorporated Areas (Reference 39, 40).

For this Countywide FIS

For streams (or portions thereof) studied by detailed methods, the following topographic information was used in the delineation of floodplains:

Where available along the Mississippi River, digital terrain data provided by the USACE, Rock Island and St. Louis Districts, were used to delineate the floodplain (Reference 41). In areas along the Mississippi River where the digital terrain data were not available, the USGS National Elevation Dataset was supplemented as available data (Reference 10).

The South Quincy Drainage and Levee District internal special flood hazard areas have been re-delineated based on new topography from the UMRSFFS (Reference 6).

For the area surrounding the City of Quincy, topography with 2 foot contours (Reference 42) and spot elevations provided by the county were used to create a 10 foot DEM for re-delineation of the floodplains. Zone AE floodplains re-delineated with this topography include the following: Mill Creek, Cedar Creek and its tributaries, Curtis Creek and its tributaries, and Emery Creek.

For streams (or portions thereof) studied by approximate methods, the following topographic information was used in the delineation of floodplains:

Zone A floodplain revisions have been made to the following streams in Adams County: McKee Creek, Walnut Fork, Figley Branch, Fishhook Creek, Mud Creek, Burton Creek, South Fork Bear Creek, Thurman Creek, Crooked Neck Creek, Brushy Creek. The revised floodplains were mapped with USGS topographic maps (Reference 9).

In addition, the effective Zone A floodplain of Tributary No. 3 to Curtis Creek and of an unnamed stream just to the west of Tributary No. 3 to Curtis Creek within the City of Quincy was delineated within adjoining Adams County using the new Quincy area topography (Reference 42) and the existing approximate Zone A elevation within the City of Quincy.

Also, Zone A floodplain of Little Creek Tributary to Bear Creek within Hancock County was delineated within adjoining Adams County using topography with a contour interval of 10 feet (Reference 9) and the approximate Zone A upstream elevation in Hancock County and the downstream approximate Zone A elevation of Bear Creek in Adams County.

The 1- and 0.2-percent 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, AH, AO, and AE); and the 0.2-percent-annual-chance floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 1- and 0.2-percent-annual-chance floodplain boundaries are close together or collinear, only the 1-percent-annual-chance floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

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

4.2 Floodways

Encroachment on floodplains, such as structures and fill, has the potential to reduce flood-carrying capacity, increase flood heights and velocities, and increase flood hazards in areas beyond the encroachment itself. For purposes of the NFIP, a floodway is used as a tool to assist local communities in 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 (see Figure 2, "Floodway Schematic") 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. In Illinois, however, under the *Rivers, Lakes and Streams Act* (615 ILCS 5/23, 29 & 30 and 615 ILCS 5/18), encroachment in the floodplain is limited to that which will cause only an insignificant increase in flood heights (Reference 43). The State of Illinois has adopted this more stringent criterion which limits the increase in flood heights to 0.1 foot, no more than a 10 percent reduction in floodplain volume, and no more than a 10 percent increase in average velocity. This has generally been interpreted as the least surcharge measurable, consistent with the encroachment option of the computer program utilized for the floodway determination. The floodways in this FIS are presented to local agencies as a minimum standard that can be adopted directly or that can be used as a basis for additional floodway studies.

The area between the floodway and the 1-percent-annual-chance floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 1-percent-annual-chance flood by more than 0.1 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 2, "Floodway Schematic."

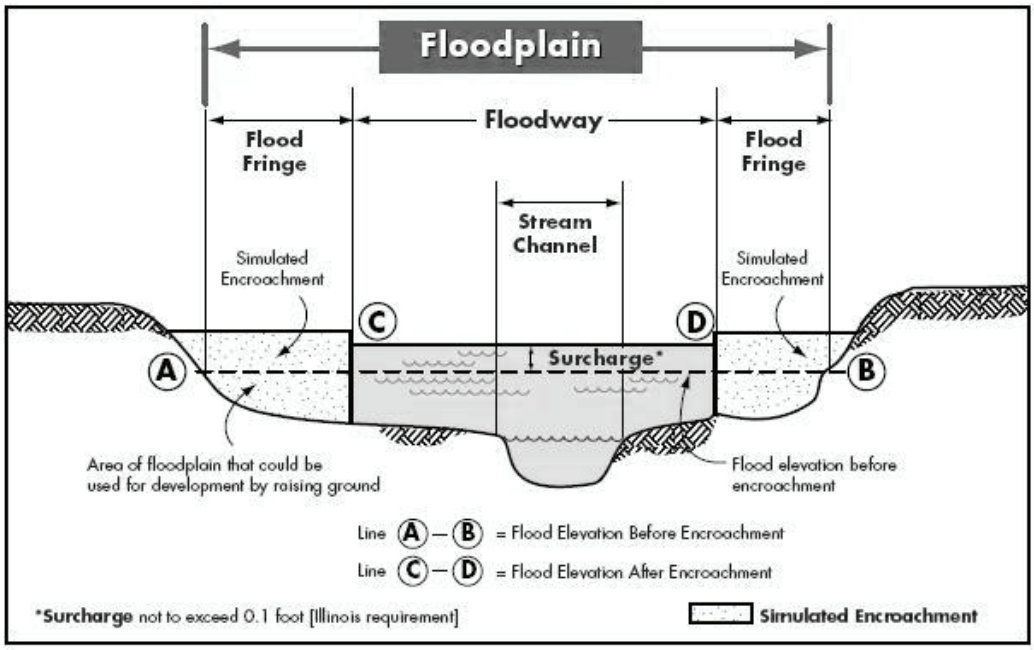

Figure 2 - Floodway Schematic

The floodway presented in this FIS report and on the FIRM was computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations have been tabulated for selected cross sections (see Table 10, "Floodway Data"). The computed floodways are shown on the FIRM (Exhibit 2). In cases where the floodway and 1-percent-annual-chance floodplain boundaries are either close together or collinear, only the floodway boundary is shown.

Due to the limitation of the UNET (as described in Section 3.2) with floodway encroachment modeling, floodway calculations for the Mississippi River are based on the June 2004 *Upper Mississippi River Floodway Computation* (Reference 44) performed by the St. Paul, Rock Island, and St. Louis Districts of the Corps of Engineers. The study extends from Cairo, Illinois to Hastings, Minnesota covering 815 miles.

The objective of the study was to produce a floodway consistent with the results of the UMRSFFS (discussed in Section 3.1). An unsteady flow HEC-RAS model was built and calibrated to the 1-percent-annual-chance UMRSFFS profile only. The model was not calibrated to other frequency events or to "natural" conditions. This model was then used to compute the floodway. Use of the model for other purposes is not recommended.

When states on opposite banks defined the floodway based on differing allowable increases in elevation to the UMRSFFS 1-percent-annual-chance profile, two floodway computations were performed. Floodway computations were based on equal reduction in conveyance from both banks using first one state's criteria and then the other state's criteria. The floodway computation using the criteria of the state on the left bank was used to set the floodway boundary of the left bank. Likewise the floodway computation using the criteria of the state on the right bank was used to set the right bank floodway. A third composite floodway run was performed using the floodway boundaries identified in the previous calculations for the left and right bank limits respectively. The appropriate floodway boundary on each bank was delineated and used in the HEC-RAS model resulting in a composite encroached 1-percent-annual-chance profile. When a levee defined the floodway, the floodway boundaries were placed at the landside toe of the levee. Illinois has a more restrictive allowable rise than Iowa or Missouri, therefore the composite floodway run produces a profile that exceeds the Illinois limit of 0.1 foot rise and is not reported in the FIS for Illinois Counties.

As a result of this approach, the Floodway Data Tables for the Mississippi River are a special case. Floodway widths are reported in two columns; the width of the floodway within the state of Illinois and the total width of the composite floodway. Floodway section areas, floodway mean velocities, and 1-percent-annual-chance flood water surface elevations with floodways are not reported

from the steady state hydraulic models. However, regulatory 1-percent-annual-chance flood water surface elevations are reported from the UNET model.

In the State of Illinois, any portion of a stream or watercourse that lies within the floodway fringe of a studied (AE) stream may have a state regulated floodway. The FIRM may not depict these state regulated floodways.

Floodways restricted by anthropogenic features such as bridges and culverts are drawn to reflect natural conditions and may not agree with the widths listed in the floodway data table in the Flood Insurance Study. The floodway as shown on the FIRM should be used for regulatory purposes.

In Illinois, along streams where floodways have not been computed, the community must obtain state permit approval (when applicable) for development. This ensures that the cumulative effect of development in the floodplain will not cause an increase in the base flood elevations that creates a potential for flood damages.

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Cedar Creek								
A	1,425 [1]	280	1,345	3.4	486.9	483.7	483.8	0.1
B	2,025 [1]	75	485	9.3	486.9	486.0	486.0	0.0
C	3,080 [1]	65	350	13.1	505.3	505.3	505.3	0.0
D	5,530 [1]	50	315	14.4	529.1	529.1	529.1	0.0
E	6,610 [1]	110	620	7.3	538.0	538.0	538.1	0.1
F	8,480 [1]	130	820	5.5	548.6	548.6	548.7	0.1
Curtis Creek								
A	3,825 [1]	50	335	13.5	486.1	482.1	482.2	0.1
B	5,505 [1]	100	370	10.9	498.8	498.8	498.8	0.0
C	5,850 [1]	75	530	7.6	505.2	505.2	505.2	0.0
D	9,880 [1]	70	575	7.0	540.0	540.0	540.0	0.0
E	13,465 [1]	102	633	6.4	557.3	557.3	557.3	0.0
F	20,370 [1]	150	615	5.2	581.1	581.1	581.1	0.0
G	22,050 [1]	70	280	6.3	586.5	586.5	586.6	0.1
H	24,625 [1]	60	220	8.1	604.1	604.1	604.1	0.0
I	27,450 [1]	121	524	2.3	629.3	629.3	629.3	0.0
J	28,030 [1]	140	485	1.9	630.2	630.2	630.2	0.0
K	32,060 [1]	50	165	5.7	660.2	660.2	660.3	0.1
Emery Creek								
A	1,055 [2]	60	365	4.7	587.1	587.1	587.2	0.1
B	4,081 [2]	56	309	5.6	596.0	596.0	596.0	0.0
C	4,450 [2]	65	245	6.6	598.8	598.8	598.8	0.0
D	6,340 [2]	70	335	4.8	608.8	608.8	608.9	0.1
E	8,375 [2]	375	1,730	0.8	626.4	626.4	626.4	0.0

[1] Stream distance in feet above confluence with Mississippi River
[2] Feet above mouth

TABLE 10

FEDERAL EMERGENCY MANAGEMENT AGENCY

ADAMS COUNTY, IL AND INCORPORATED AREAS

FLOODWAY DATA

CEDAR CREEK – CURTIS CREEK – EMERY CREEK

FLOODING SOURCE		FLOODWAY				1-PERCENT-ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET) WITHIN ILLINOIS	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	WIDTH[2] (FEET) TOTAL	REGULATORY FROM UNET MODEL	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Mississippi River									
312.7	312.70	4,583	N/A	N/A	6,127	478.8	478.8	N/A	N/A
313	313.00	4,589	N/A	N/A	6,230	479.0	479.0	N/A	N/A
313.5	313.50	4,431	N/A	N/A	6,009	479.2	479.2	N/A	N/A
314	314.00	3,795	N/A	N/A	6,289	479.4	479.4	N/A	N/A
314.5	314.50	3,730	N/A	N/A	6,617	479.7	479.7	N/A	N/A
315	315.00	4,792	N/A	N/A	8,073	480.0	480.0	N/A	N/A
315.5	315.50	4,786	N/A	N/A	8,032	480.2	480.2	N/A	N/A
316	316.00	4,968	N/A	N/A	7,942	480.5	480.5	N/A	N/A
316.7	316.70	4,773	N/A	N/A	6,401	480.7	480.7	N/A	N/A
317	317.00	4,607	N/A	N/A	5,998	480.9	480.9	N/A	N/A
317.5	317.50	4,517	N/A	N/A	5,724	481.1	481.1	N/A	N/A
318	318.00	2,906	N/A	N/A	4,072	481.3	481.3	N/A	N/A
318.6	318.60	3,357	N/A	N/A	4,641	481.6	481.6	N/A	N/A
319	319.00	3,937	N/A	N/A	4,912	481.9	481.9	N/A	N/A
319.6	319.60	4,487	N/A	N/A	5,561	482.3	482.3	N/A	N/A
320	320.00	3,402	N/A	N/A	4,798	482.7	482.7	N/A	N/A
320.5	320.50	2,514	N/A	N/A	4,338	483.1	483.1	N/A	N/A
321	321.00	2,225	N/A	N/A	4,210	483.3	483.3	N/A	N/A
321.4	321.40	2,566	N/A	N/A	6,235	483.4	483.4	N/A	N/A
321.6	321.60	3,166	N/A	N/A	7,333	483.5	483.5	N/A	N/A
322	322.00	4,757	N/A	N/A	8,493	483.7	483.7	N/A	N/A
322.5	322.50	5,049	N/A	N/A	8,273	483.9	483.9	N/A	N/A
323	323.00	4,855	N/A	N/A	8,896	484.2	484.2	N/A	N/A
323.4	323.40	4,399	N/A	N/A	8,787	484.7	484.7	N/A	N/A
324	324.00	3,616	N/A	N/A	5,759	484.9	484.9	N/A	N/A

[1] Miles above confluence with Ohio River
[2] Widths are reported as widths to state line and composite width. N/A – Not applicable
*Floodway Data Tables for the Mississippi River are a special case. See flood Insurance Study Text for full explanation.

TABLE 10

FEDERAL EMERGENCY MANAGEMENT AGENCY

ADAMS COUNTY, IL AND INCORPORATED AREAS

FLOODWAY DATA

MISSISSIPPI RIVER*

FLOODING SOURCE		FLOODWAY				1-PERCENT-ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET) WITHIN ILLINOIS	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	WIDTH[2] (FEET) TOTAL	REGULATORY FROM UNET MODEL	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Mississippi River (continued)									
324.8	324.80	826	N/A	N/A	3,134	485.0	485.0	N/A	N/A
325	325.00	854	N/A	N/A	3,237	485.8	485.8	N/A	N/A
325.4	325.40	1,898	N/A	N/A	5,095	486.1	486.1	N/A	N/A
326	326.00	1,404	N/A	N/A	5,176	486.2	486.2	N/A	N/A
326.5	326.50	1,205	N/A	N/A	4,132	486.3	486.3	N/A	N/A
326.8	326.80	1,399	N/A	N/A	3,911	486.4	486.4	N/A	N/A
327.1	327.10	1,722	N/A	N/A	4,030	486.5	486.5	N/A	N/A
327.6	327.60	3,136	N/A	N/A	4,766	486.6	486.6	N/A	N/A
328	328.00	4,440	N/A	N/A	5,921	486.8	486.8	N/A	N/A
328.5	328.50	5,768	N/A	N/A	7,995	486.9	486.9	N/A	N/A
329	329.00	7,495	N/A	N/A	10,717	487.1	487.1	N/A	N/A
329.6	329.60	8,046	N/A	N/A	11,894	487.2	487.2	N/A	N/A
330	330.00	5,906	N/A	N/A	9,643	487.3	487.3	N/A	N/A
330.6	330.60	5,560	N/A	N/A	8,360	487.4	487.4	N/A	N/A
331	331.00	5,039	N/A	N/A	7,310	487.5	487.5	N/A	N/A
331.5	331.50	5,600	N/A	N/A	6,734	487.5	487.5	N/A	N/A
332	332.00	5,288	N/A	N/A	6,416	487.7	487.7	N/A	N/A
332.5	332.50	5,985	N/A	N/A	7,160	487.9	487.9	N/A	N/A
333	333.00	6,763	N/A	N/A	7,904	488.1	488.1	N/A	N/A
333.6	333.60	7,404	N/A	N/A	8,506	488.3	488.3	N/A	N/A
334	334.00	8,841	N/A	N/A	9,852	488.5	488.5	N/A	N/A
334.6	334.60	10,861	N/A	N/A	12,053	488.7	488.7	N/A	N/A
335	335.00	11,834	N/A	N/A	13,055	488.8	488.8	N/A	N/A
335.5	335.50	12,514	N/A	N/A	13,289	489.0	489.0	N/A	N/A

[1] Miles above confluence with Ohio River
[2] Widths are reported as widths to state line and composite width. N/A – Not applicable
*Floodway Data Tables for the Mississippi River are a special case. See flood Insurance Study Text for full explanation.

TABLE 10

FEDERAL EMERGENCY MANAGEMENT AGENCY

ADAMS COUNTY, IL AND INCORPORATED AREAS

FLOODWAY DATA

MISSISSIPPI RIVER*

FLOODING SOURCE		FLOODWAY				1-PERCENT-ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET) WITHIN ILLINOIS	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	WIDTH[2] (FEET) TOTAL	REGULATORY FROM UNET MODEL	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Mississippi River (continued)									
336	336.00	11,658	N/A	N/A	12,426	489.1	489.1	N/A	N/A
336.4	336.40	9,861	N/A	N/A	10,831	489.2	489.2	N/A	N/A
337	337.00	7,901	N/A	N/A	8,854	489.3	489.3	N/A	N/A
337.5	337.50	7,873	N/A	N/A	8,936	489.4	489.4	N/A	N/A
338	338.00	7,175	N/A	N/A	8,147	489.5	489.5	N/A	N/A
338.5	338.50	6,390	N/A	N/A	7,280	489.7	489.7	N/A	N/A
339	339.00	8,977	N/A	N/A	10,237	490.0	490.0	N/A	N/A
339.5	339.50	9,764	N/A	N/A	10,909	490.2	490.2	N/A	N/A
339.9	339.90	9,912	N/A	N/A	11,056	490.3	490.3	N/A	N/A
340.5	340.50	11,146	N/A	N/A	12,144	490.5	490.5	N/A	N/A
341	341.00	11,729	N/A	N/A	12,635	490.7	490.7	N/A	N/A
341.4	341.40	12,194	N/A	N/A	13,728	490.8	490.8	N/A	N/A
342.3	342.30	1,999	N/A	N/A	3,000	491.0	491.0	N/A	N/A
342.6	342.60	1,535	N/A	N/A	3,113	491.2	491.2	N/A	N/A
343	343.00	1,585	N/A	N/A	2,626	491.4	491.4	N/A	N/A
343.2	343.20	1,563	N/A	N/A	2,382	491.9	491.9	N/A	N/A
343.7	343.70	1,722	N/A	N/A	3,730	492.2	492.2	N/A	N/A
343.9	343.90	1,968	N/A	N/A	5,338	492.3	492.3	N/A	N/A
344.5	344.50	2,396	N/A	N/A	5,602	492.4	492.4	N/A	N/A
345.1	345.10	3,803	N/A	N/A	6,188	492.5	492.5	N/A	N/A
345.7	345.70	5,631	N/A	N/A	7,635	492.8	492.8	N/A	N/A
346	346.00	6,006	N/A	N/A	7,508	493.1	493.1	N/A	N/A
346.4	346.40	5,514	N/A	N/A	6,675	493.3	493.3	N/A	N/A
347	347.00	3,116	N/A	N/A	4,830	493.5	493.5	N/A	N/A

[1] Miles above confluence with Ohio River
[2] Widths are reported as widths to state line and composite width. N/A – Not applicable
*Floodway Data Tables for the Mississippi River are a special case. See flood Insurance Study Text for full explanation.

TABLE 10

FEDERAL EMERGENCY MANAGEMENT AGENCY

ADAMS COUNTY, IL AND INCORPORATED AREAS

FLOODWAY DATA

MISSISSIPPI RIVER*

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Tributary No. 2								
A	552 [1]	67	142	9.4	580.7	580.7	580.7	0.0
B	1,080 [1]	70	390	3.4	583.9	583.9	584.0	0.1
C	1,680 [1]	50	150	8.9	590.2	590.2	590.2	0.0
D	3,320 [1]	160	410	3.2	611.7	611.7	611.8	0.1
Tributary No. 3 to Cedar Creek								
A	7,550 [2]	50	237	9.5	628.7	628.7	628.7	0.0
Tributary No. 3 to Curtis Creek								
*	*	*	*	*	*	*	*	*

[1] Stream distance in feet above mouth
[2] Stream distance in feet above the confluence with Cedar Creek
*Data not available

TABLE 10

FEDERAL EMERGENCY MANAGEMENT AGENCY

ADAMS COUNTY, IL AND INCORPORATED AREAS

FLOODWAY DATA

TRIBUTARY NO. 2 – TRIBUTARY NO. 3 TO CEDAR CREEK – TRIBUTARY NO. 3 TO CURTIS CREEK

5.0 INSURANCE APPLICATIONS

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. The 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 by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations 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 by detailed methods. In most instances, whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at the selected intervals within this zone.

Zone AH

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

Zone AO

Zone AO is the flood insurance rate zone that corresponds to the areas of 1-percent-annual-chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot depths derived from the detailed hydraulic analyses are shown 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, and to areas of 1-percent-annual-chance flooding where average depths are less than 1 foot, areas of 1-percent-annual-chance flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 1-percent-annual-chance flood by levees. No base flood elevations 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 base flood elevations or average depths. Insurance agents use the zones and base flood elevations 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 are shown where applicable

The current FIRM presents flooding information for the entire geographic area of Adams County. Previously, separate Flood Hazard Boundary Maps and/or FIRMs were prepared for each identified flood prone incorporated community and the unincorporated areas of the county. The countywide FIRM also includes flood hazard information that was presented separately on Flood Boundary and Floodway Maps (FBFM), where applicable. Historical data relating to the community maps prepared is presented in Table 11, "Community Map History."

7.0 OTHER STUDIES

Flood Insurance Studies have been prepared for Brown, Hancock, Pike and Schuyler Counties, Illinois, and the City of Canton, Missouri and Marion County, Missouri. Flood Insurance Rate Maps only, no FIS, were prepared for Lewis County, Missouri (Reference 45).

Information pertaining to revised and unrevised flood hazards for each jurisdiction, or the portions of each jurisdiction, within Adams County has been compiled into this FIS. Therefore, this FIS supersedes all previously printed FISs, FHBMs, FBFMs, and FIRMs for all of the incorporated and unincorporated jurisdictions in Adams County.

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 Division, 536 South Clark Street, Sixth Floor, Chicago, Illinois 60605.

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATES(S)
Adams County (Unincorporated Areas)	June 9, 1978	None	November 15, 1985	January 19, 1996
Camp Point, Village of [1]	N/A	None	N/A	None
Clayton, Village of [1]	N/A	None	N/A	None
Coatsburg, Village of [1]	N/A	None	N/A	None
Columbus, Village of [1]	N/A	None	N/A	None
Golden, Village of [1]	N/A	None	N/A	None
La Prairie, Village of [1]	N/A	None	N/A	None
Liberty, Village of [1]	N/A	None	N/A	None
Lima, Village of [1]	N/A	None	N/A	None
Loraine, Village of	June 2, 2011	None	June 2, 2011	None
Mendon, Village of [1]	N/A	None	N/A	None

[1]No special flood hazard areas identified
N/A – Not applicable

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

ADAMS COUNTY, IL AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATES(S)
(continued)				
Payson, Village of [1]	N/A	None	N/A	None
Plainville, Village of [1]	N/A	None	N/A	None
Quincy, City of	May 24, 1974	August 15, 1975	October 15, 1981	None
Ursa, Village of [1]	N/A	None	N/A	None

[1]No special flood hazard areas identified
N/A – Not applicable

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

ADAMS COUNTY, IL AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

9.0 BIBLIOGRAPHY AND REFERENCES

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10.0 REVISIONS DESCRIPTION

This section has been added to provide information regarding significant revisions made since the original FIS and FIRM were printed. Future revisions may be made that do not result in the republishing of the FIS report. All users are advised to contact the Community Map Repository at the address below to obtain the most up-to-date flood hazard data.

- ADAMS COUNTY (UNINCORPORATED AREAS)
  Adams County Highway Department
  101 North 54th Street
  Quincy, Illinois 62305

- CAMP POINT, VILLAGE OF
  Camp Point Village Hall
  115 East Wood Street
  Camp Point, Illinois 62320

- CLAYTON, VILLAGE OF
  Clayton Village Hall
  114 East Main
  Clayton, Illinois 62324

- COATSBURG, VILLAGE OF
  Adams County Highway Department
  101 North 54th Street
  Quincy, Illinois 62305

- COLUMBUS, VILLAGE OF
  Adams County Highway Department
  101 North 54th Street
  Quincy, Illinois 62305

- GOLDEN, VILLAGE OF
  Adams County Highway Department
  101 North 54th Street
  Quincy, Illinois 62305

- LA PRAIRIE, VILLAGE OF
  Adams County Highway Department
  101 North 54th Street
  Quincy, Illinois 62305

- LIBERTY, VILLAGE OF
  Adams County Highway Department
  101 North 54th Street
  Quincy, Illinois 62305

- LIMA, VILLAGE OF
  Adams County Highway Department
  101 North 54th Street
  Quincy, Illinois 62305

- LORAINE, VILLAGE OF
  Adams County Highway Department
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- MENDON, VILLAGE OF
  Adams County Highway Department
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  Quincy, Illinois 62305

- PAYSON, VILLAGE OF
  Adams County Highway Department
  101 North 54th Street
  Quincy, Illinois 62305

- PLAINVILLE, VILLAGE OF
  Adams County Highway Department
  101 North 54th Street
  Quincy, Illinois 62305

- QUINCY, CITY OF
  Quincy City Hall
  730 Maine Street
  Quincy, Illinois 62301

- URSA, VILLAGE OF
  Adams County Highway Department
  101 North 54th Street
  Quincy, Illinois 62305

10.1 First Revision (Revised _____)

a. Authority and Acknowledgements

This Physical Map Revision was completed to update the certification status of the South Quincy Levee located south of the City of Quincy from Provisionally Accredited to Accredited. The hydrologic analysis for the interior drainage and the levee certification analysis were performed by Klingner & Associates, P.C. and completed in August 2014. A review of the hydrologic analysis was performed by Strategic Alliance for Risk Reduction (STARR), for FEMA under contract HSFEHQ-09-D-0370.

b. Coordination

The results of the South Quincy Levee certification and interior drainage analysis were reviewed at a meeting held on _____, and attended by representatives of _____. All problems raised at that meeting have been addressed.

c. Scope of Study

The levee status for the South Quincy Levee along the Mississippi River was adjusted from provisionally accredited to accredited. An analysis of the interior drainage associated with the South Quincy levee was completed and the FIRM adjusted as necessary.

Each FIS report provides floodplain data, which may include a combination of the following: 10-, 2-, 1-, and 0.2-percent-annual-chance flood elevations (the 1-percent-annual-chance flood elevation is also referred to as the BFE); delineations of the 1-percent-annual-chance floodway. This information is presented on the FIRM and/or in many components of the FIS report, including Flood Profiles and Floodway Data Tables. This revision includes only a revised BFE for the South Quincy Drainage and Levee District.

Figure 3 presents important considerations for using the information contained in this FIS report and the FIRM and is provided in response to changes in format and content.

d. Engineering Analysis

An analysis was completed to determine the interior drainage performance of the South Quincy Drainage and Levee District for the 1-percent-annual-chance flood. The analysis was performed using HEC-HMS (Reference 27) with three different data sets. The data for each of the three models was obtained from *USACE's Feasibility Study for Flood Damage Reduction* (Reference 47), *USACE's Levee Safety Evaluation Report* (Reference 48), and *Bulletin 71:*

Rainfall Frequency Atlas of the Midwest (Reference 28). All three models utilized the same Elevation-Area relationship based on the USGS LiDAR data, the same Elevation-Discharge relationship, and the same rainfall event.

All three models indicated an approximately 2 foot reduction in the Base Flood Elevation compared to the previous determination. The reduction of the BFE also resulted in a reduction in the area inundated by the 1-percent-annual-chance flood event. The revised BFE is shown in the revised Summary of Stillwater Elevations table (Table 12). The appropriate revisions to the delineations of the SFHA on the FIRM were also completed.

e. Bibliography and References

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Table 12 - Summary of Stillwater Elevations (revised)

	Elevation (feet NAVD 88)			
Flooding Source and Location	*10-Percent-Annual-Chance*	*2-Percent-Annual-Chance*	*1-Percent-Annual-Chance*	*0.2-Percent-Annual-Chance*
South Quincy Drainage and Levee District				
Interior ponding area	*	*	466.1	*

*Data not available

Figure 3 – FIRM Notes to Users

NOTES TO USERS

For information and questions about this map, available products associated with this FIRM including historic versions of the FIRM, how to order products, or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling FEMA Map Information eXchange.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Map Service Center at the number listed above.
For community dates, refer to Table 11 in the FIS Report.
To determine if flood insurance is available in the community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.
PRELIMINARY FIS REPORT: FEMA maintains information about map features, such as street locations and names, in or near designated flood hazard areas. Requests to revise information in or near designated flood hazard areas may be provided to FEMA during the community review period, at the final Consultation Coordination Officer's meeting, or during the statutory 90-day appeal period. Approved requests for changes will be shown on the final printed FIRM.

The map is for use in administering the NFIP. It may not identify all areas subject to flooding, particularly from local drainage sources of small size. Consult the community map repository to find updated or additional flood hazard information.
BASE FLOOD ELEVATIONS: For more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables within in the FIS Report. Use the flood elevation data within the FIS Report in conjunction with the FIRM for construction and/or floodplain management.
FLOODWAY INFORMATION: Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the FIS Report for the jurisdiction.
Floodways restricted by anthropogenic features such as bridges and culverts are drawn to reflect natural conditions and may not agree with the model computed widths listed in the Floodway Data table in the Flood Insurance Study.
In the State of Illinois, any portion of a stream or watercourse that lies within the floodway fringe of a studied (AE) stream may have a state regulated floodway. The FIRM may not depict these state regulated floodways.
FLOOD CONTROL STRUCTURE INFORMATION: Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Figure 3 – FIRM Notes to Users (continued)

PROJECTION INFORMATION: The projection used in the preparation of the map was State Plane Illinois West 1202. The horizontal datum was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in the slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.
ELEVATION DATUM: Flood elevations on the FIRM are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:
NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

Local Vertical monuments may have been used to create the map. To obtain current monument information, please contact the appropriate local community.
BASE MAP INFORMATION: Base map information is panel-specific. The map panels should be referenced for this information.
Corporate limits shown on the map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after the map was published, map users should contact appropriate community officials to verify current corporate limit locations.

NOTES FOR FIRM INDEX

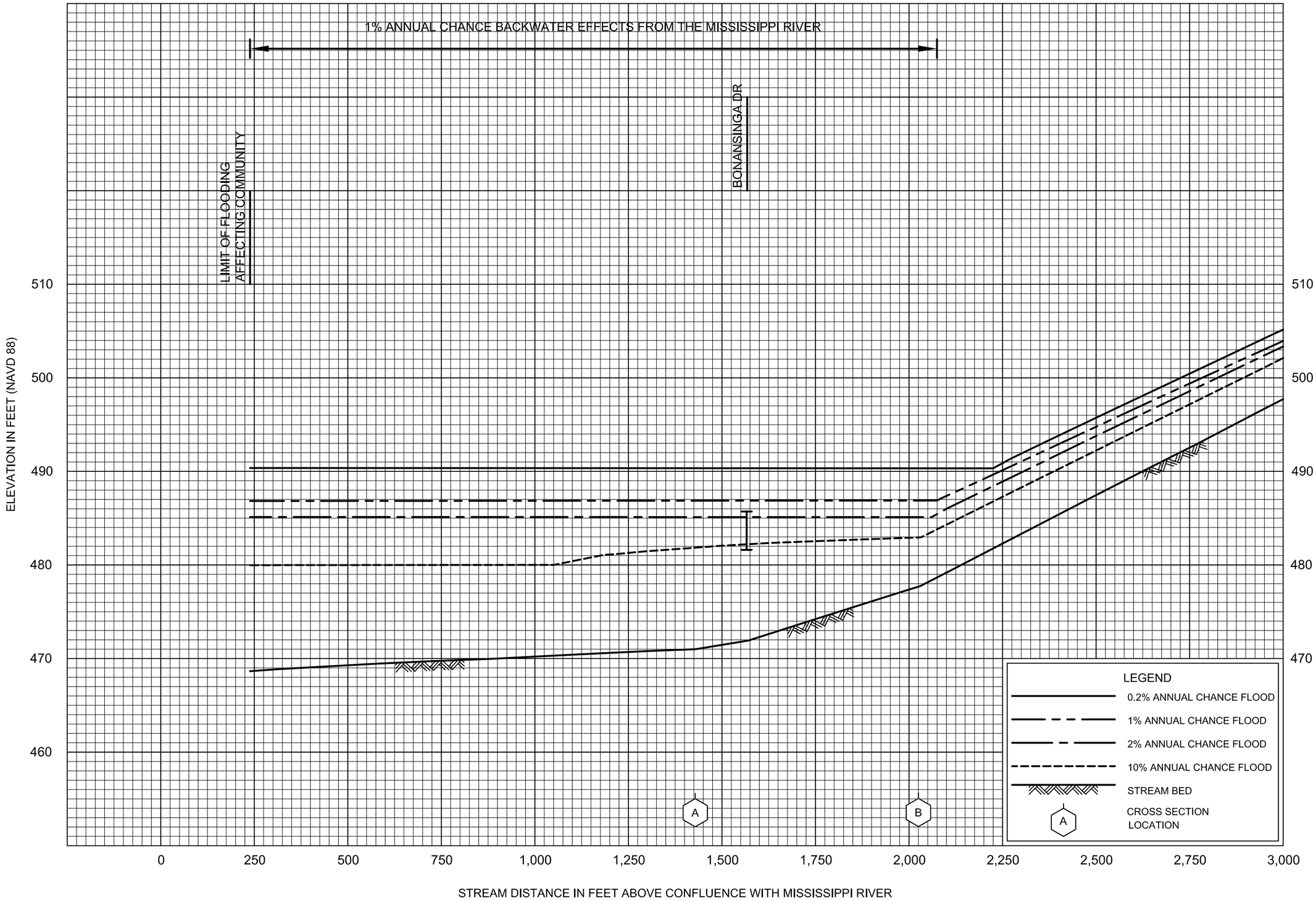
REVISIONS TO INDEX: As new studies are performed and FIRM panels are updated within Adams County, IL, corresponding revisions to the FIRM Index will be incorporated to reflect the effective dates of those panels.

SPECIAL NOTES FOR SPECIFIC FIRM PANELS

This Notes to Users section was created specifically for Adams County, Illinois and Incorporated Areas, effective TBD.
ACCREDITED LEVEE NOTES TO USERS: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1% annual chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection for areas on this panel. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA website at http://www.fema.gov/business/nfip/index.shtm.

Figure 3 – FIRM Notes to Users (continued)

FLOOD RISK REPORT: A Flood Risk Report (FRR) may be available for many of the flooding sources and communities referenced in the FIS Report. The FRR is provided to increase public awareness of flood risk by helping communities identify the areas within their jurisdictions that have the greatest risks. Although non-regulatory, the information provided within the FRR can assist communities in assessing and evaluating mitigation opportunities to reduce these risks. It can also be used by communities developing or updating flood risk mitigation plans. These plans all communities to identify and evaluate opportunities to reduce potential loss of life and property. However, the FRR is not intended to be the final authoritative source of all flood risk data for a project area; rather, it should be used with other data sources to paint a comprehensive picture of flood risk.



FLOOD PROFILES

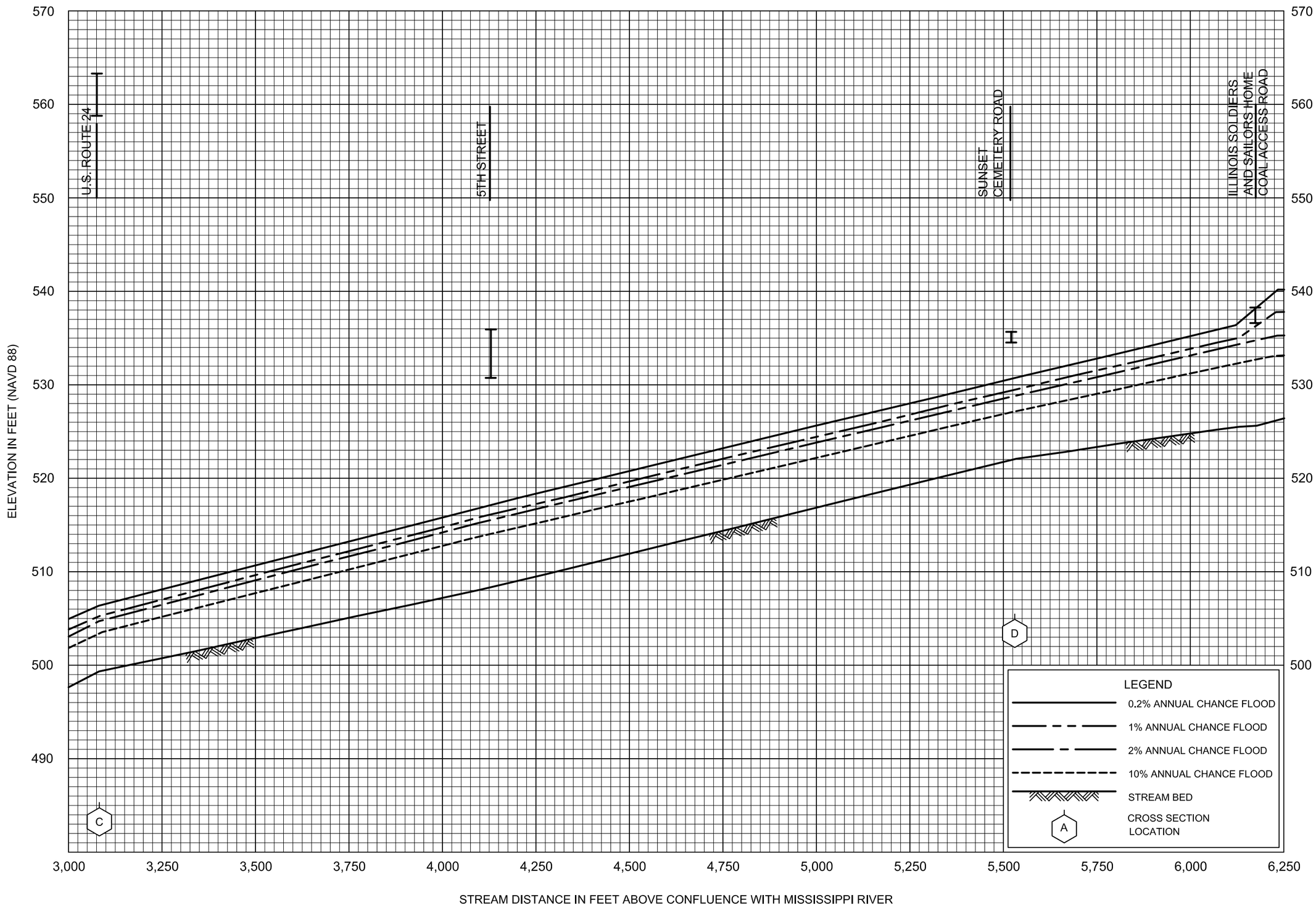
CEDAR CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ADAMS COUNTY, IL

AND INCORPORATED AREAS

01P



FLOOD PROFILES

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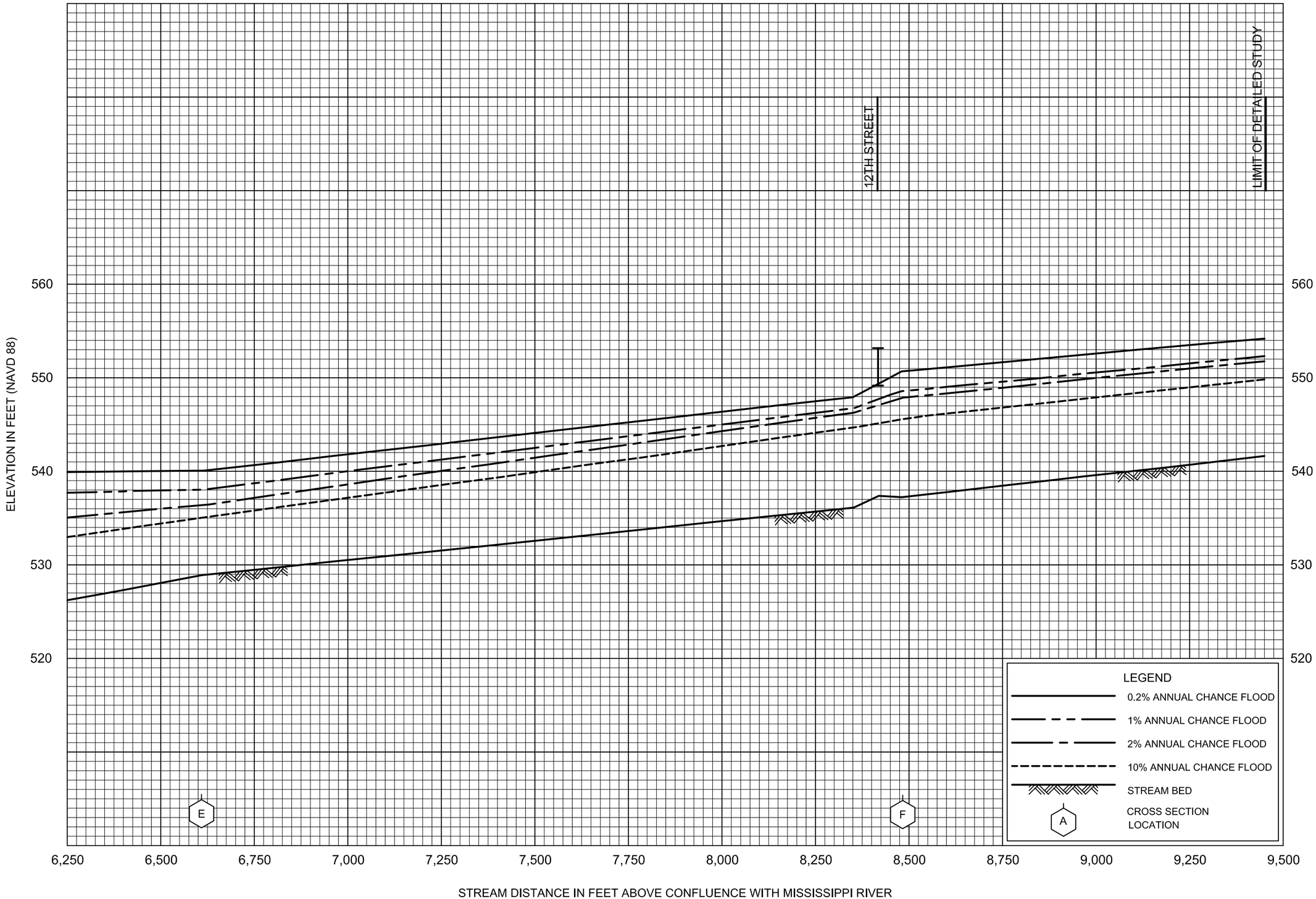

FLOOD PROFILES

CEDAR CREEK

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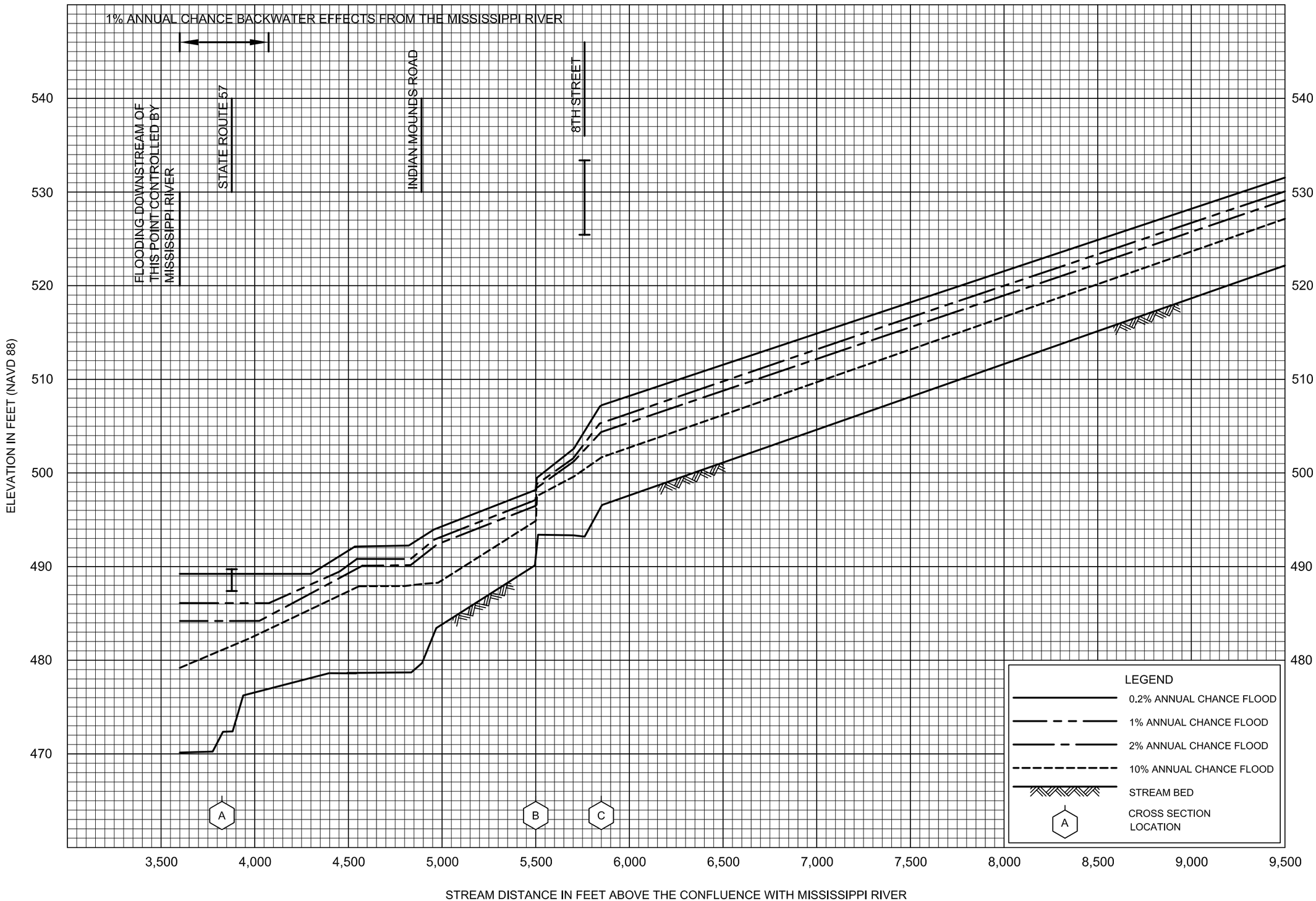

FLOOD PROFILES

CURTIS CREEK

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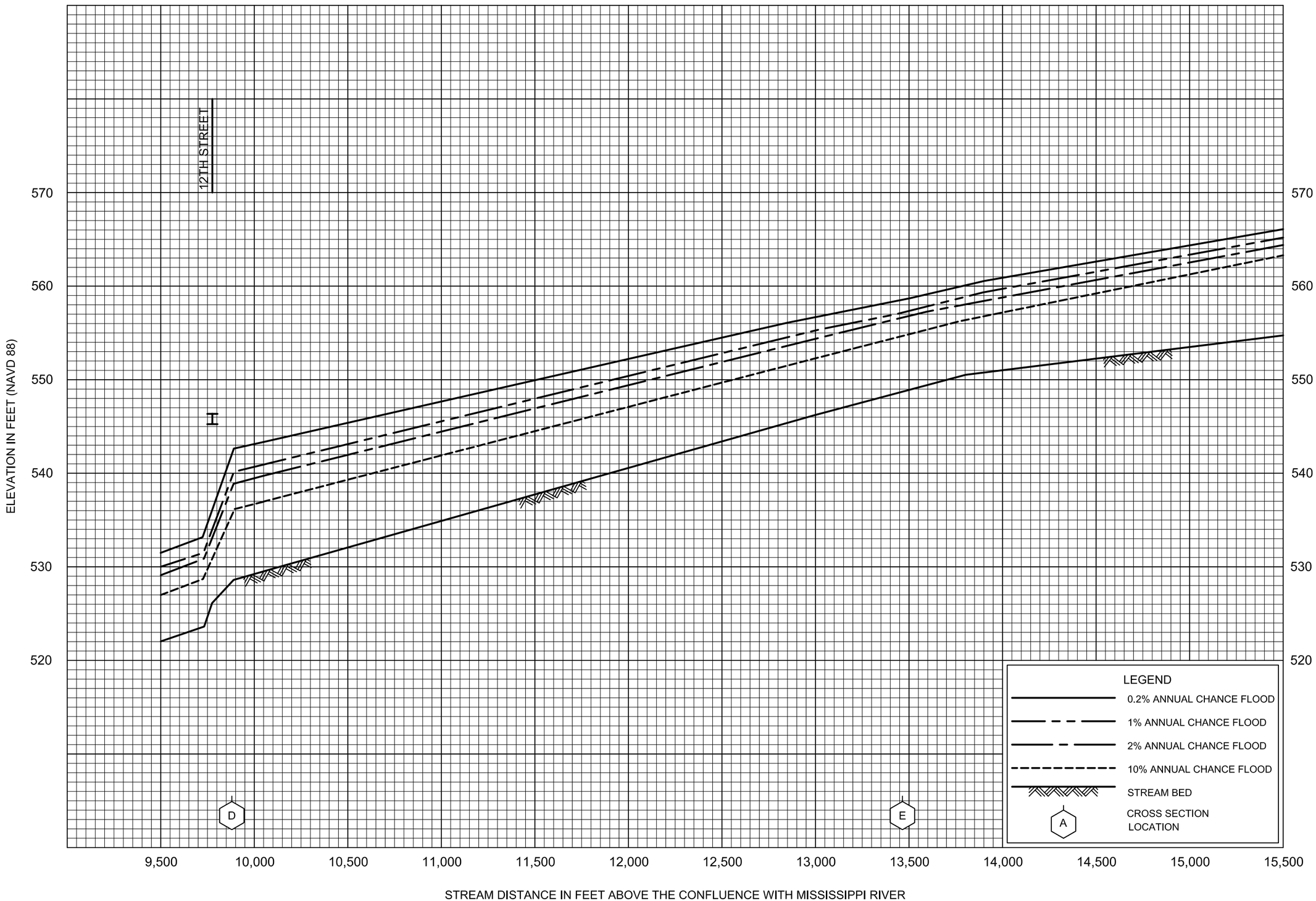

FLOOD PROFILES

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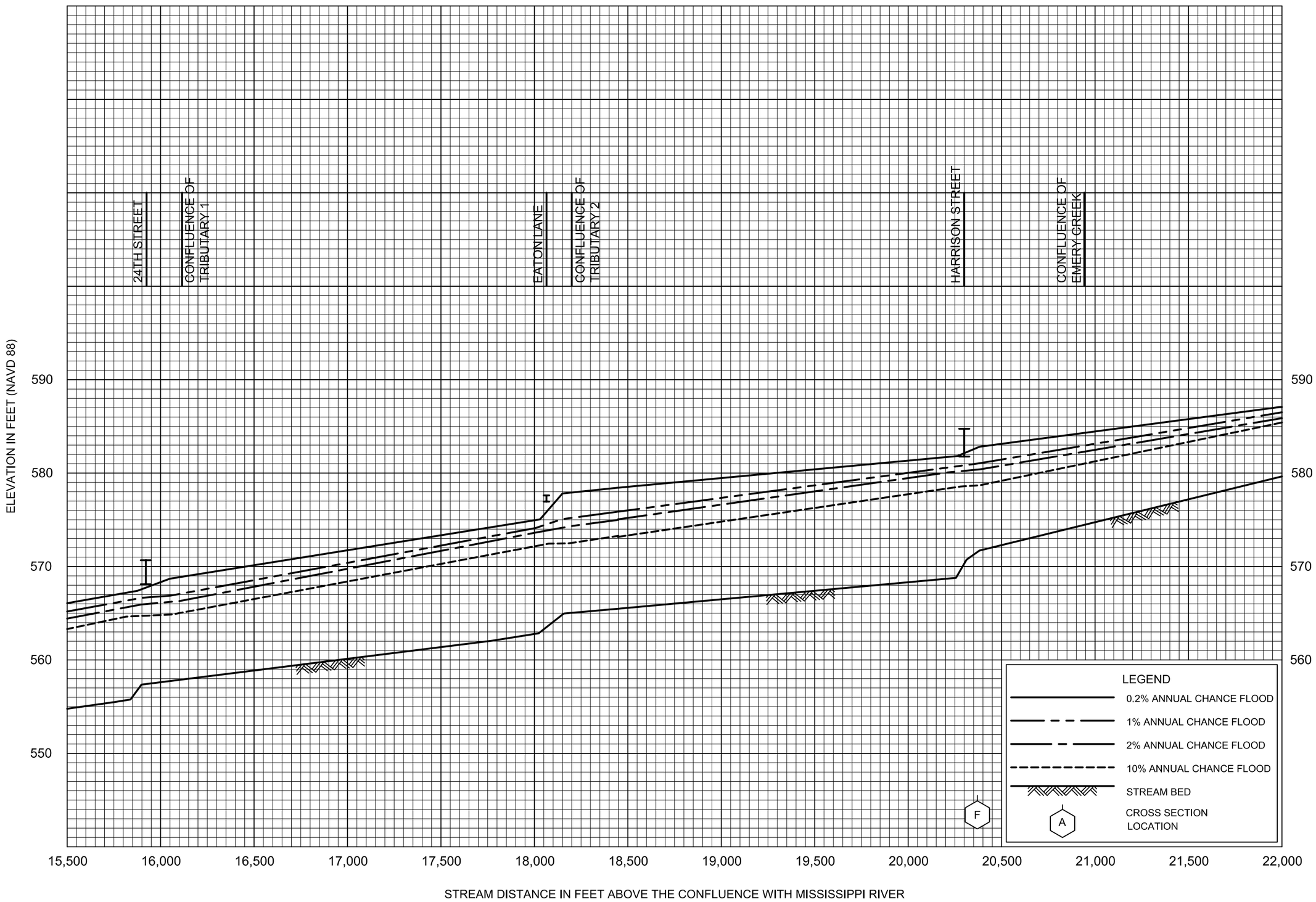

FLOOD PROFILES

CURTIS CREEK

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ADAMS COUNTY, IL

AND INCORPORATED AREAS

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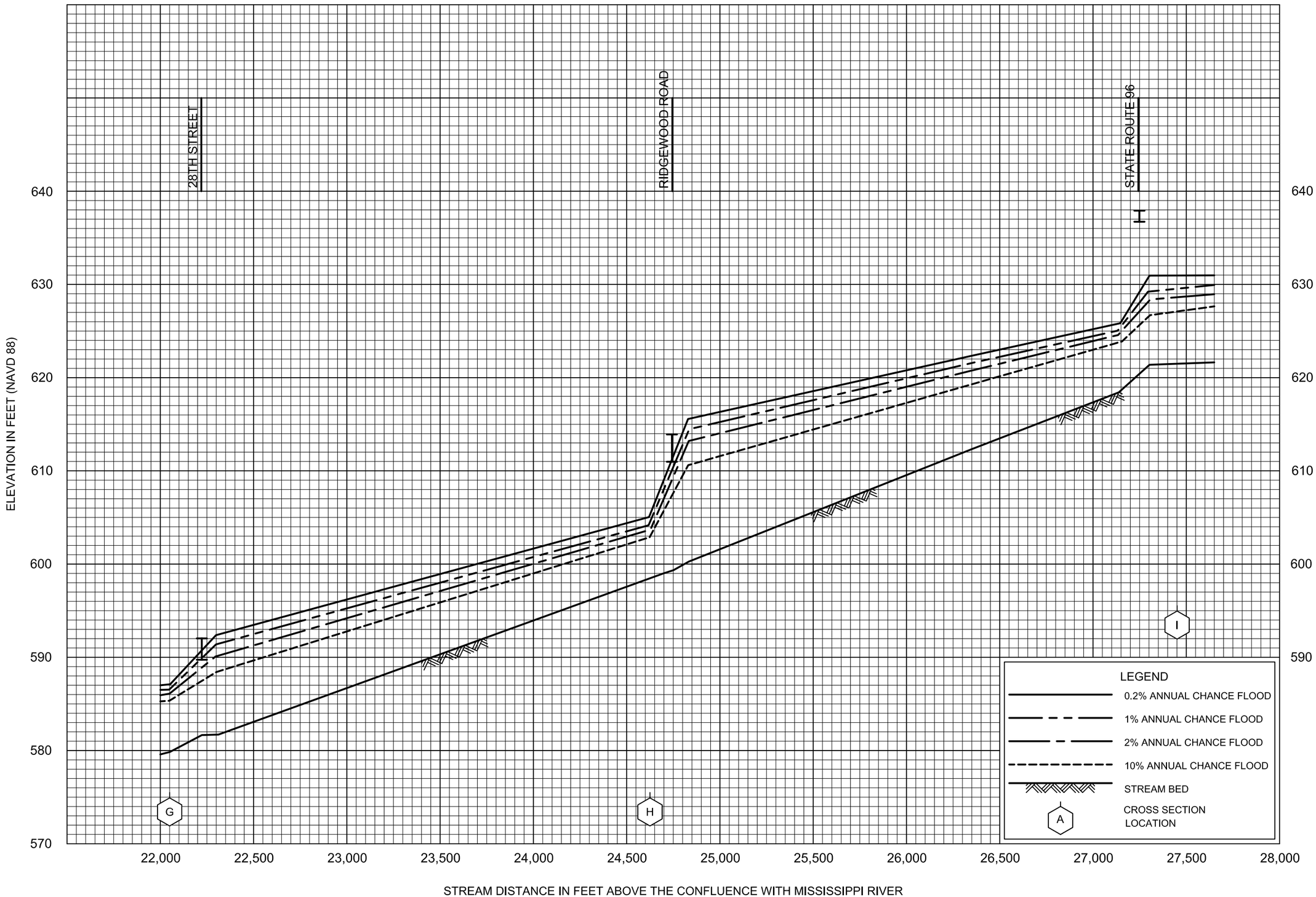

FLOOD PROFILES

CURTIS CREEK

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ADAMS COUNTY, IL

AND INCORPORATED AREAS

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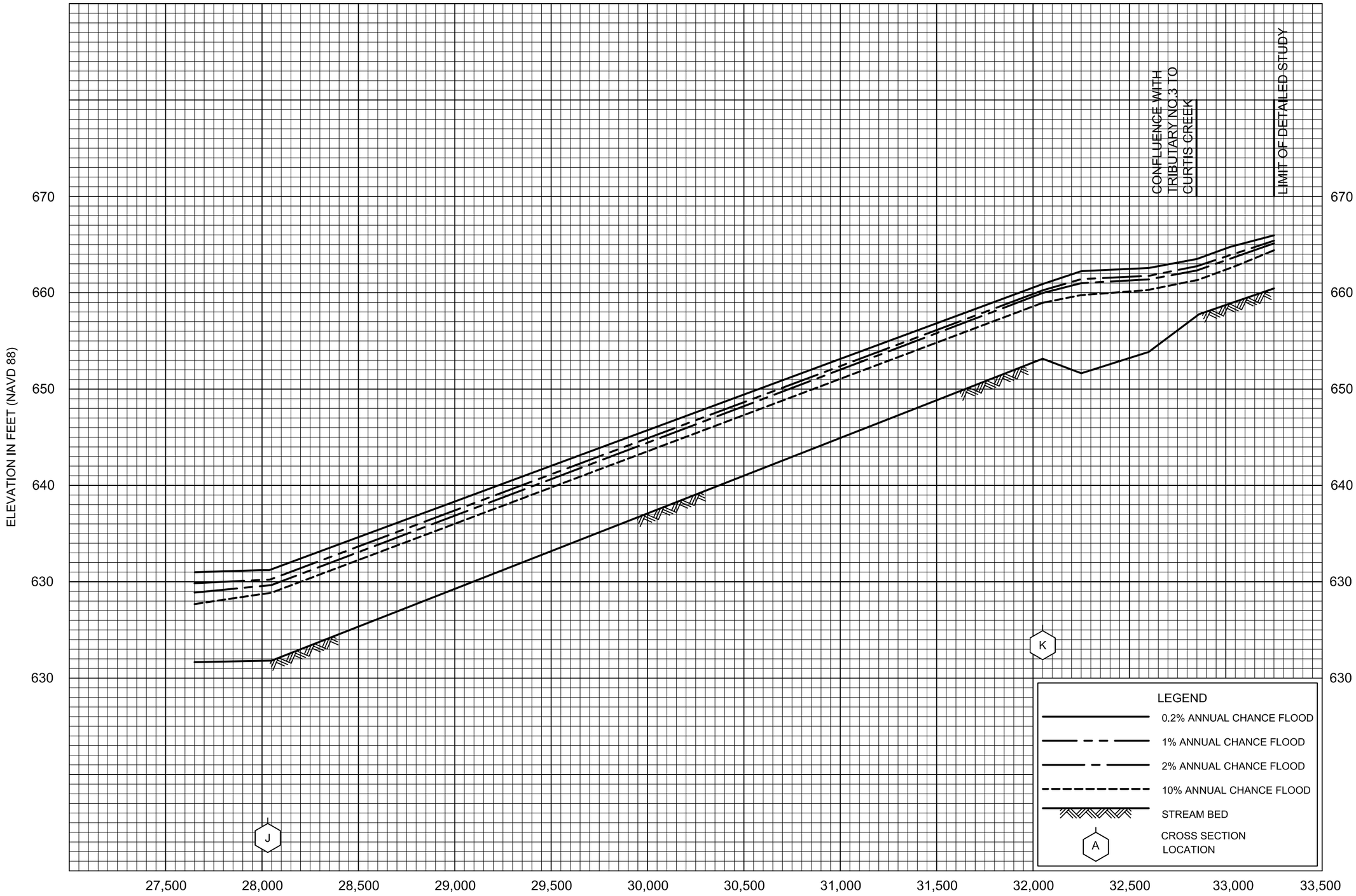

FLOOD PROFILES

CURTIS CREEK

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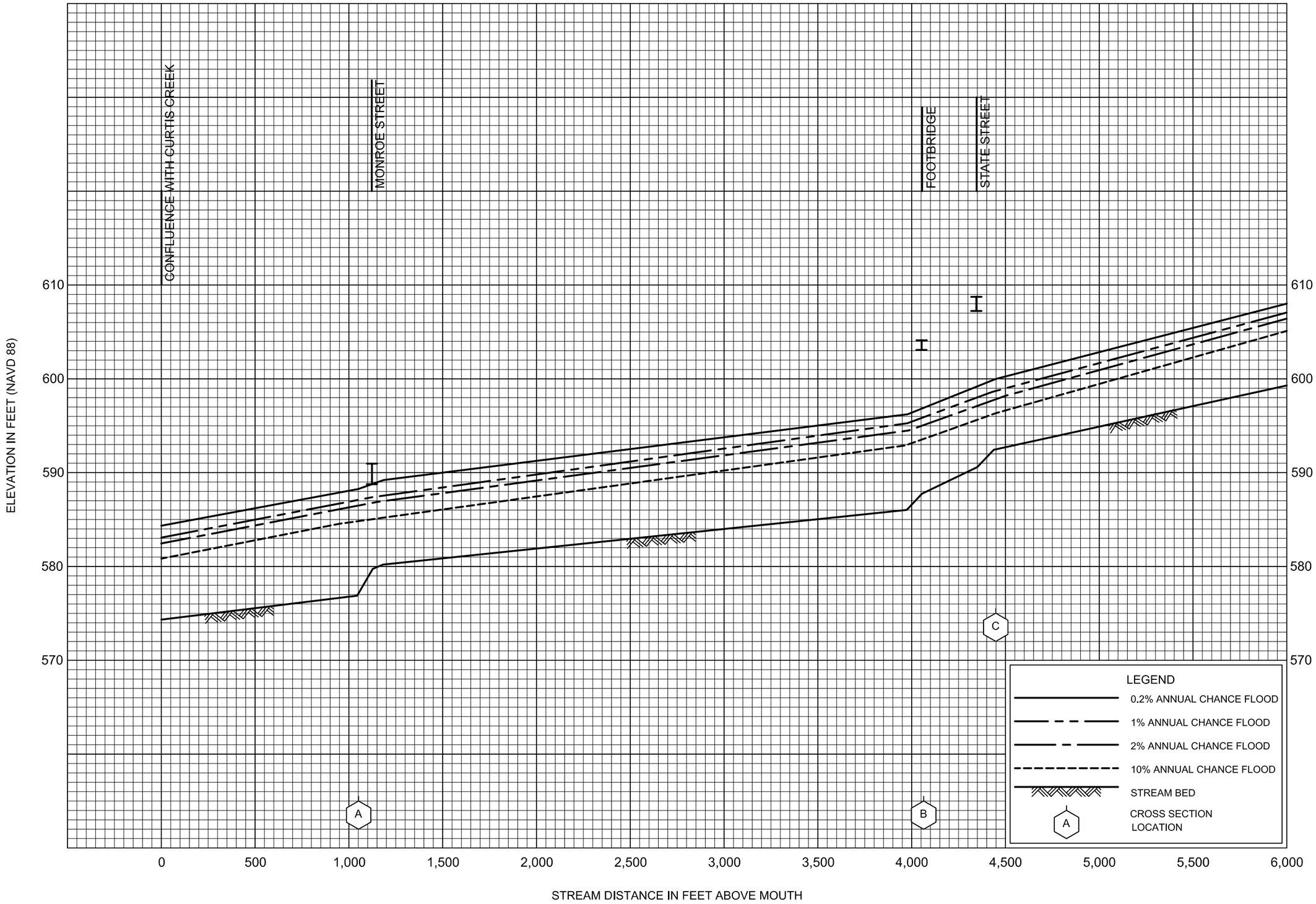
AND INCORPORATED AREAS



FLOOD PROFILES

EMERY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ADAMS COUNTY, IL

AND INCORPORATED AREAS

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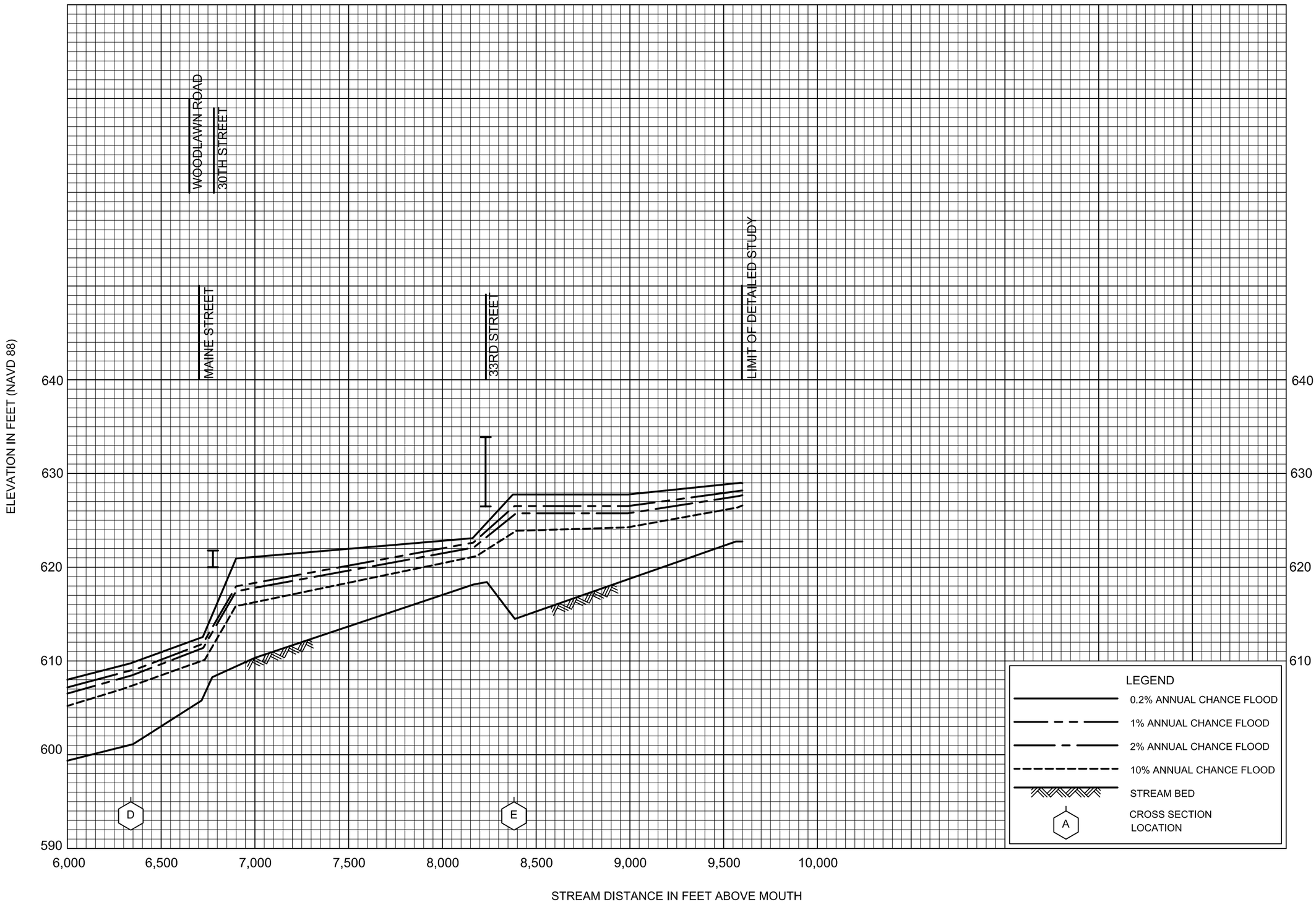

FLOOD PROFILES

EMERY CREEK

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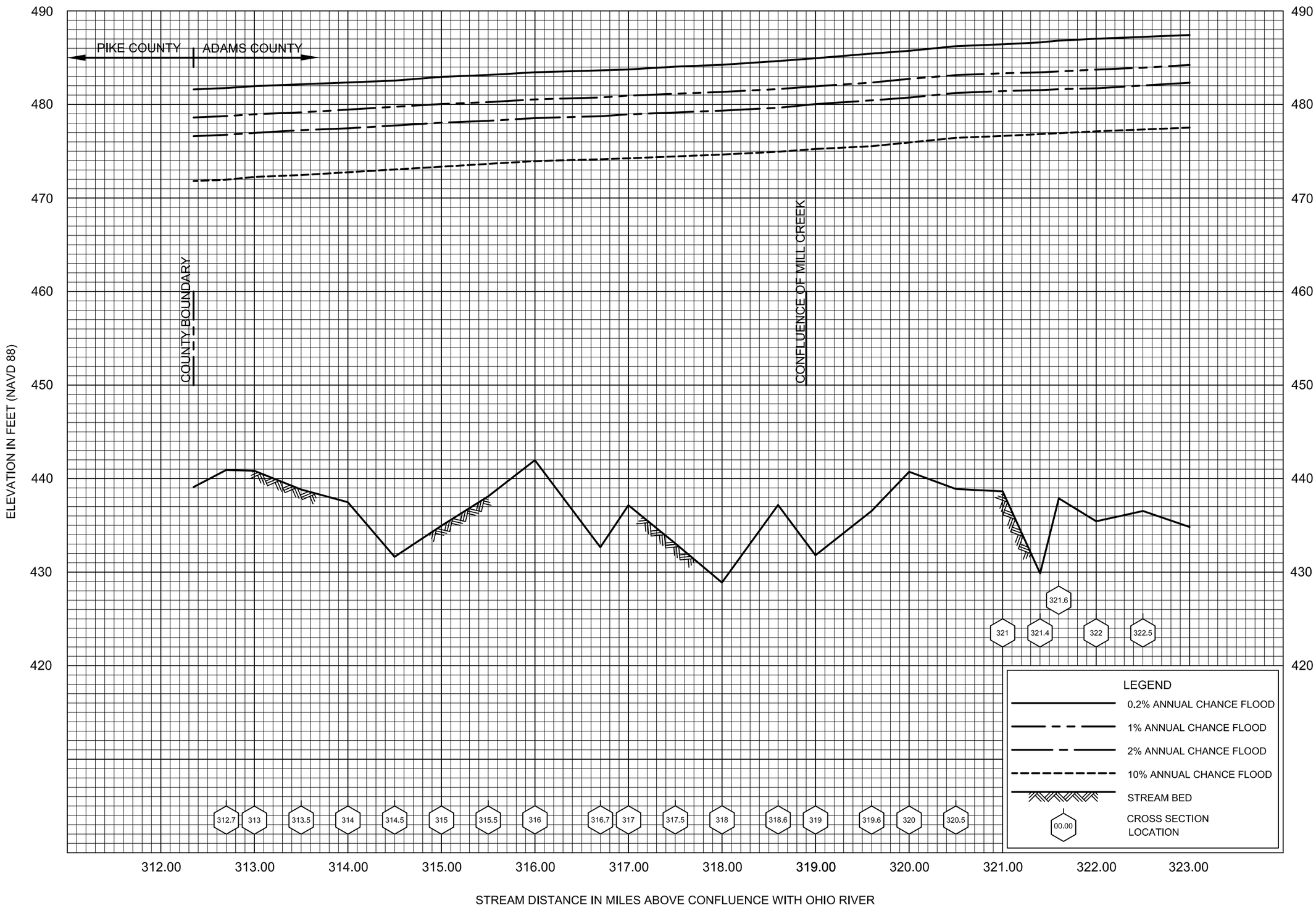
ADAMS COUNTY, IL

AND INCORPORATED AREAS



FLOOD PROFILES

MISSISSIPPI RIVER

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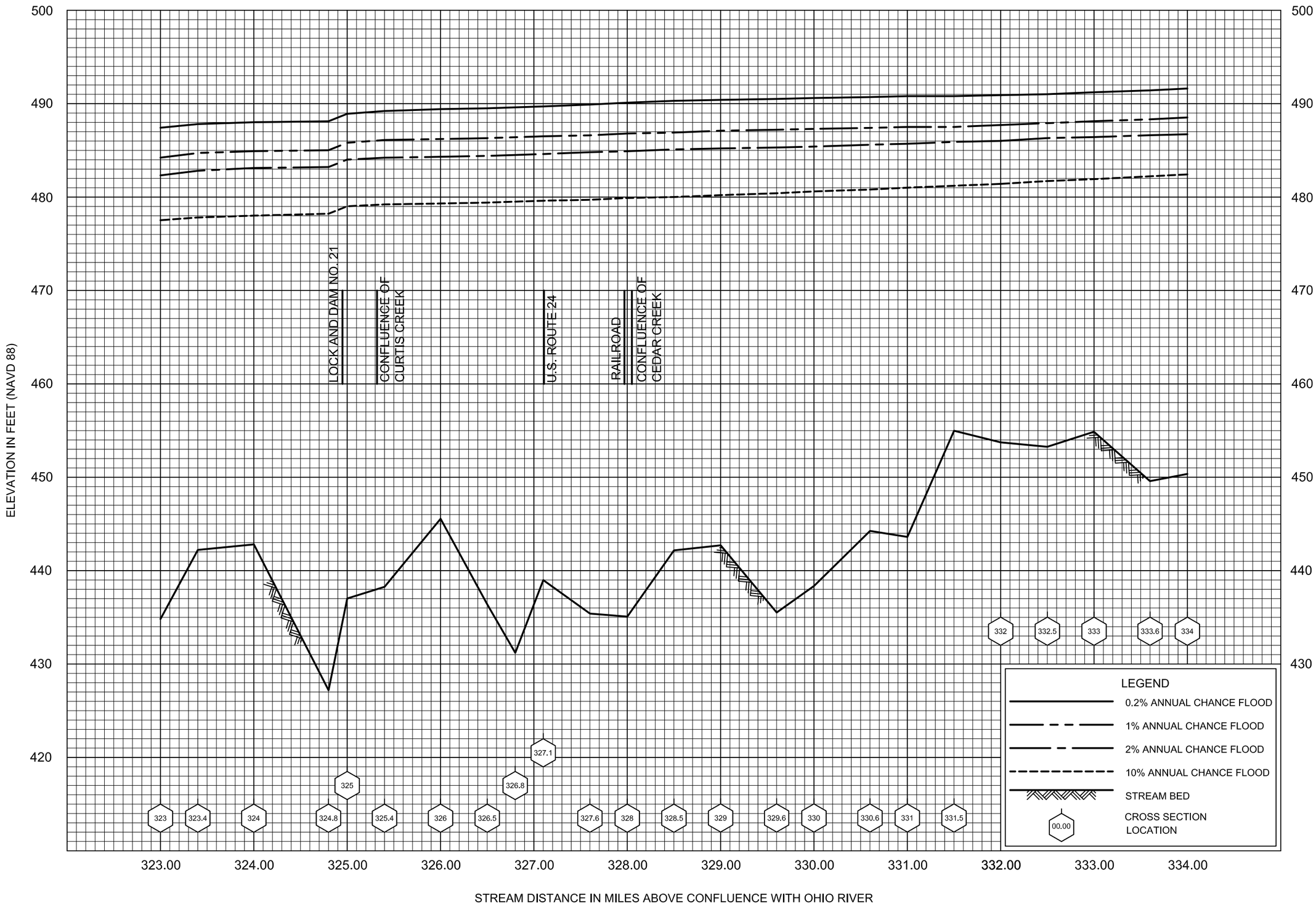
ADAMS COUNTY, IL

AND INCORPORATED AREAS



FLOOD PROFILES

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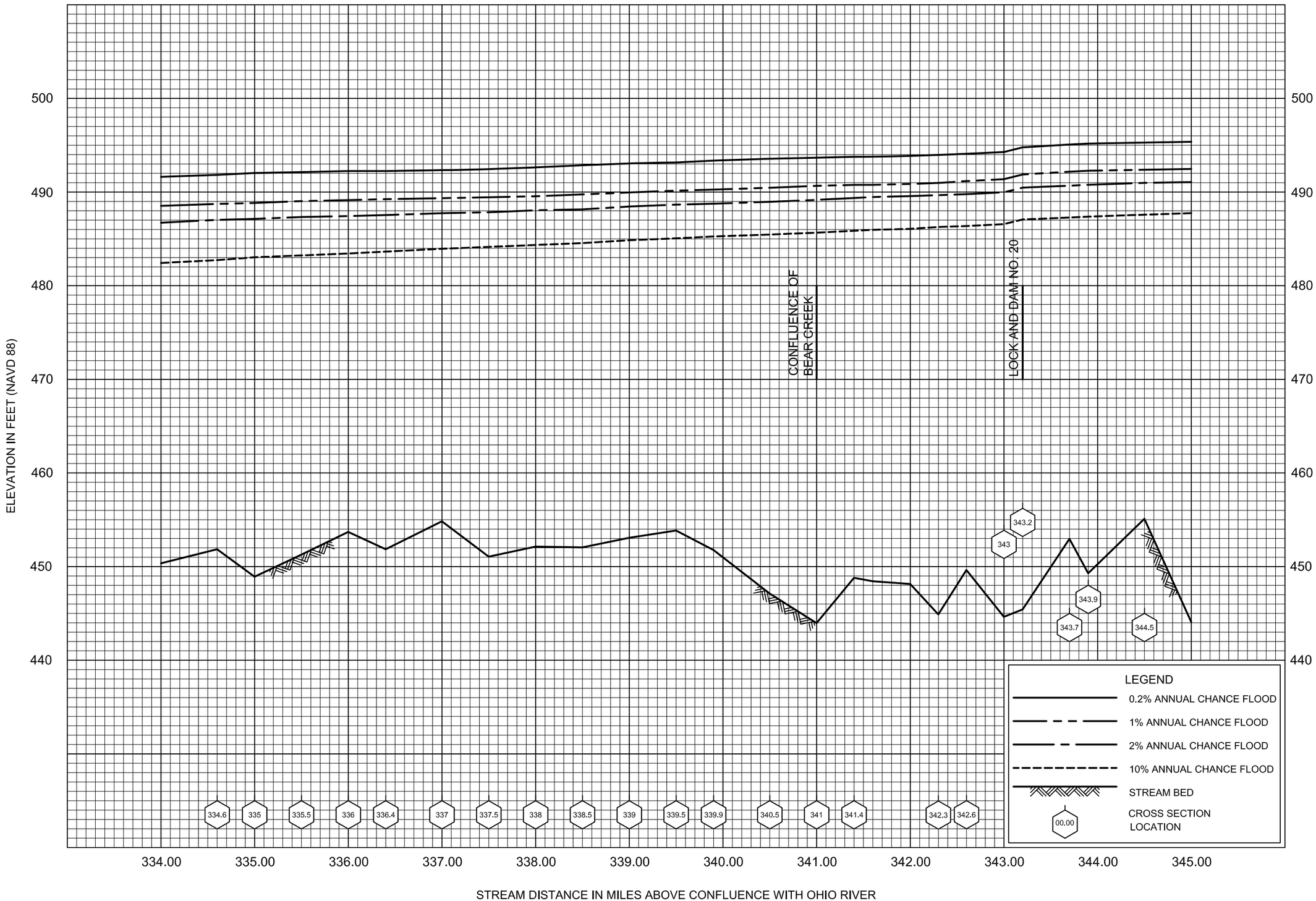
ADAMS COUNTY, IL

AND INCORPORATED AREAS



FLOOD PROFILES

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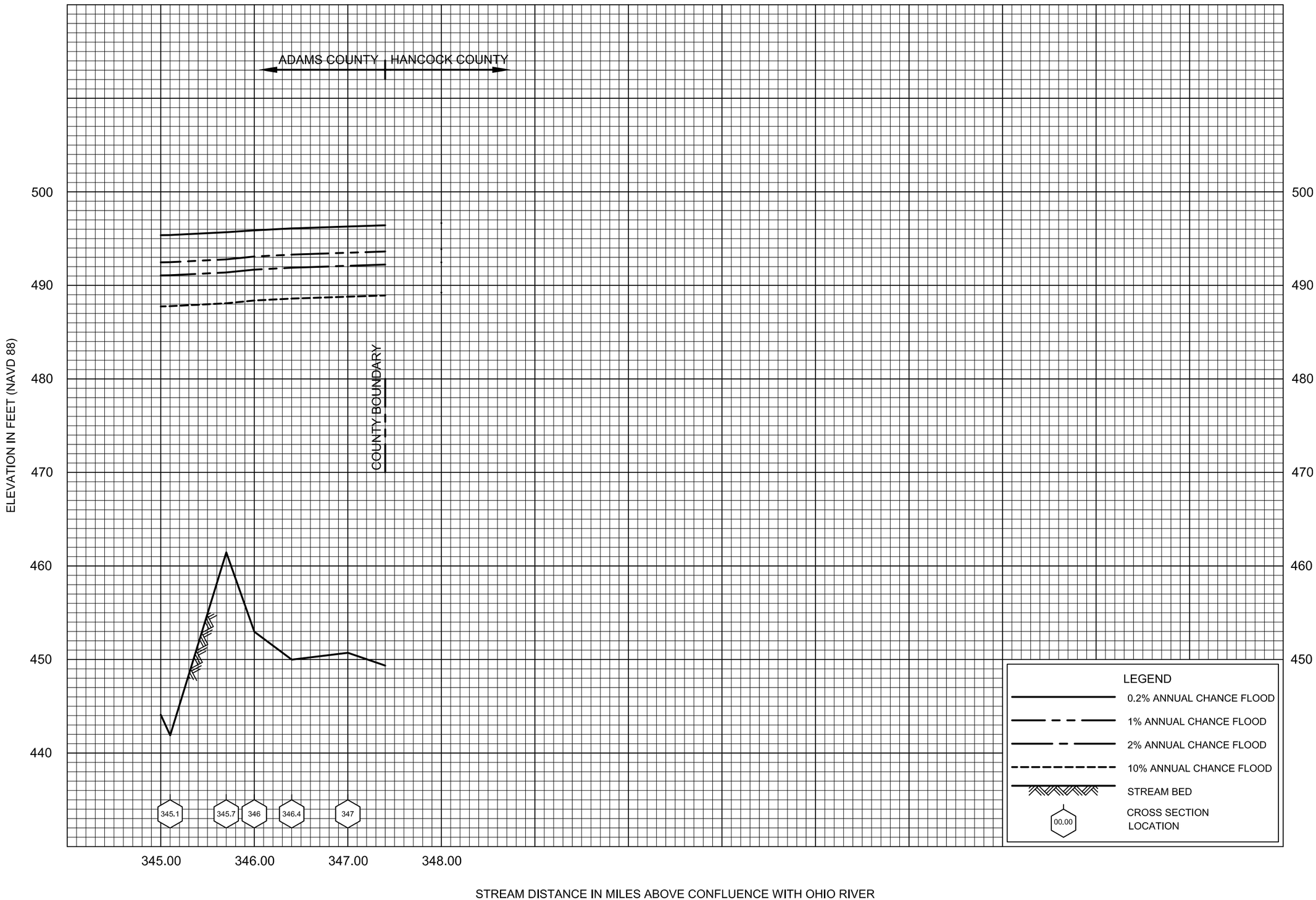
ADAMS COUNTY, IL

AND INCORPORATED AREAS



FLOOD PROFILES

MISSISSIPPI RIVER

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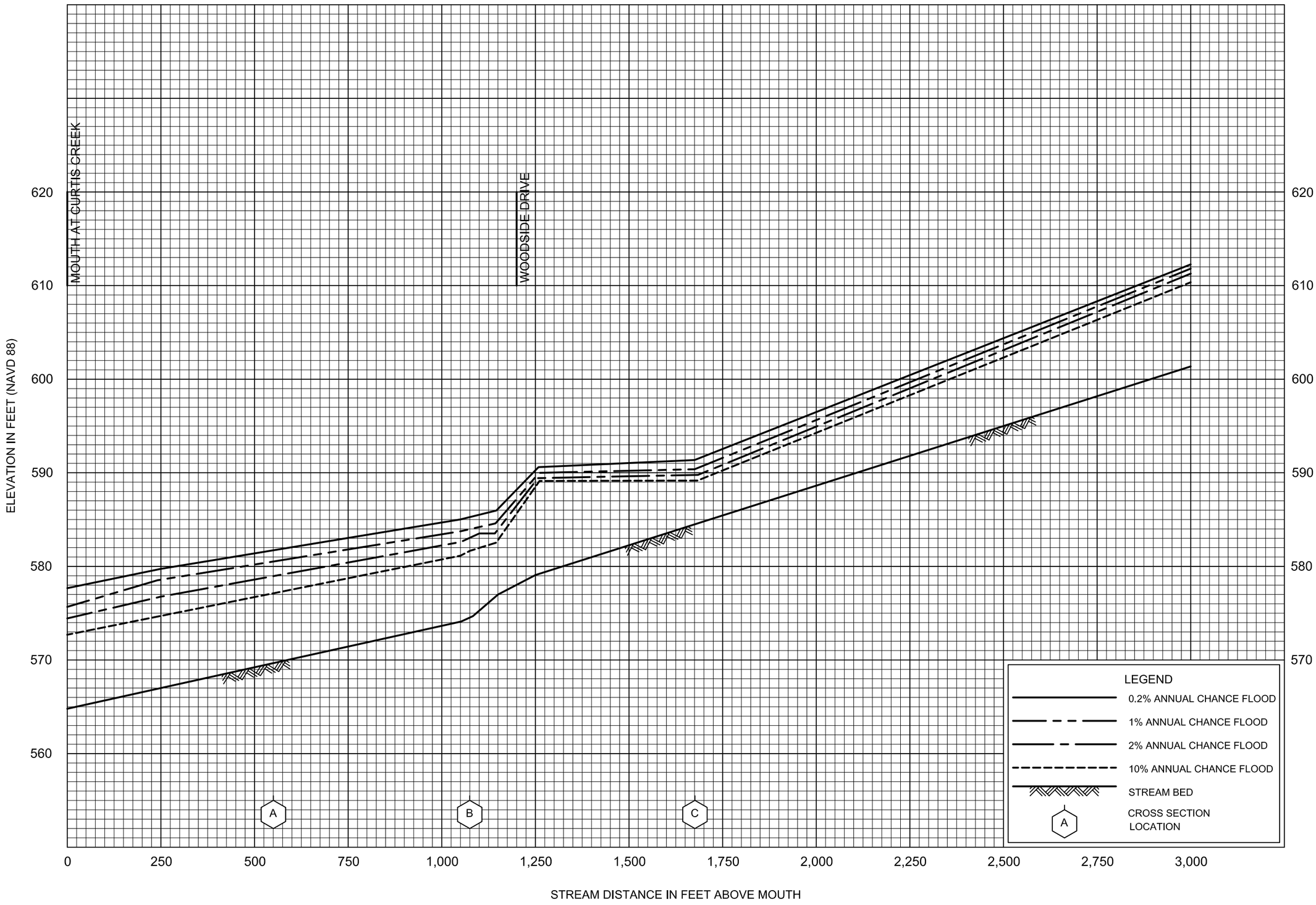
ADAMS COUNTY, IL

AND INCORPORATED AREAS



FLOOD PROFILES

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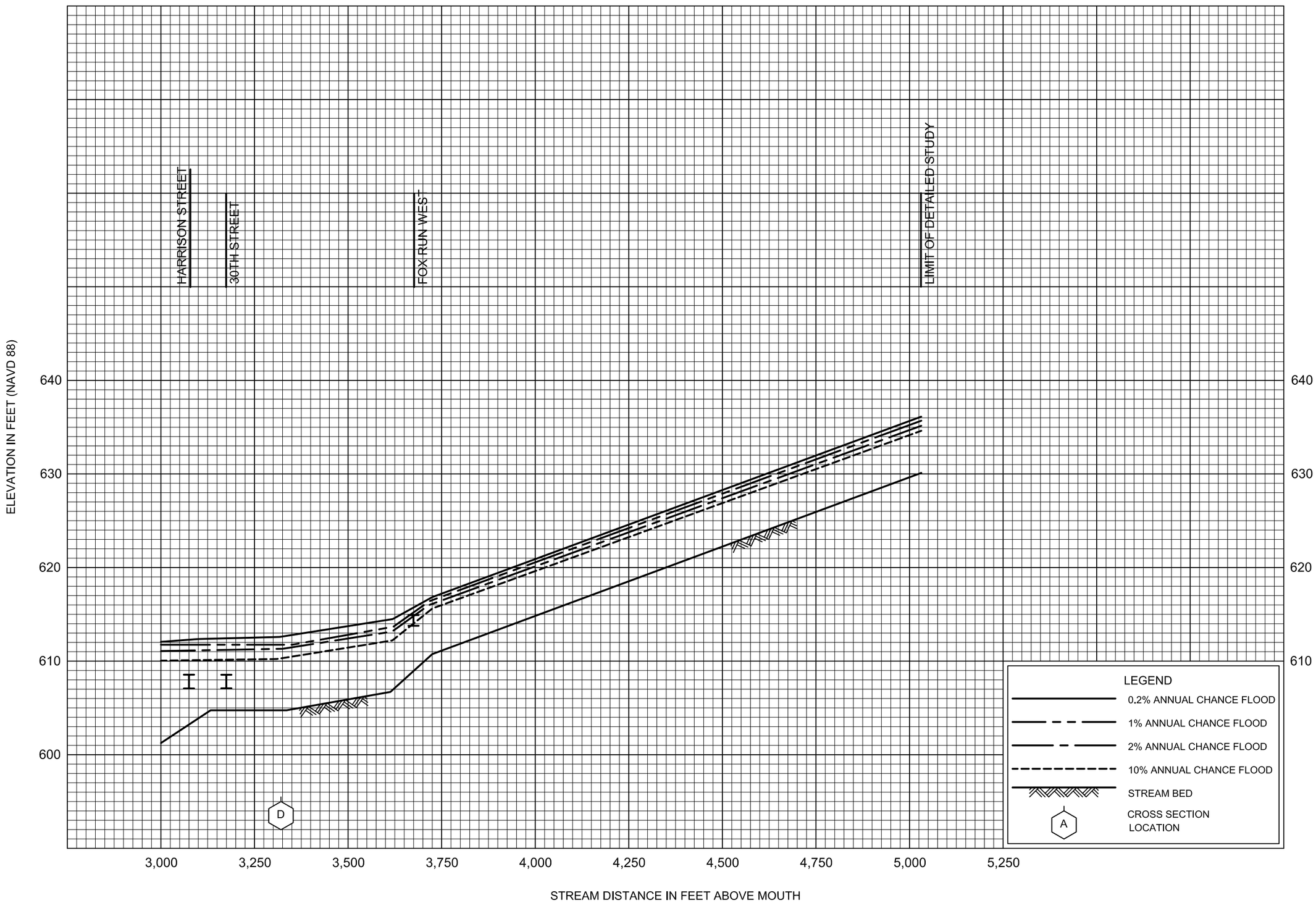
FEDERAL EMERGENCY MANAGEMENT AGENCY

ADAMS COUNTY, IL

AND INCORPORATED AREAS



FLOOD PROFILES

TRIBUTARY NO. 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

ADAMS COUNTY, IL

AND INCORPORATED AREAS

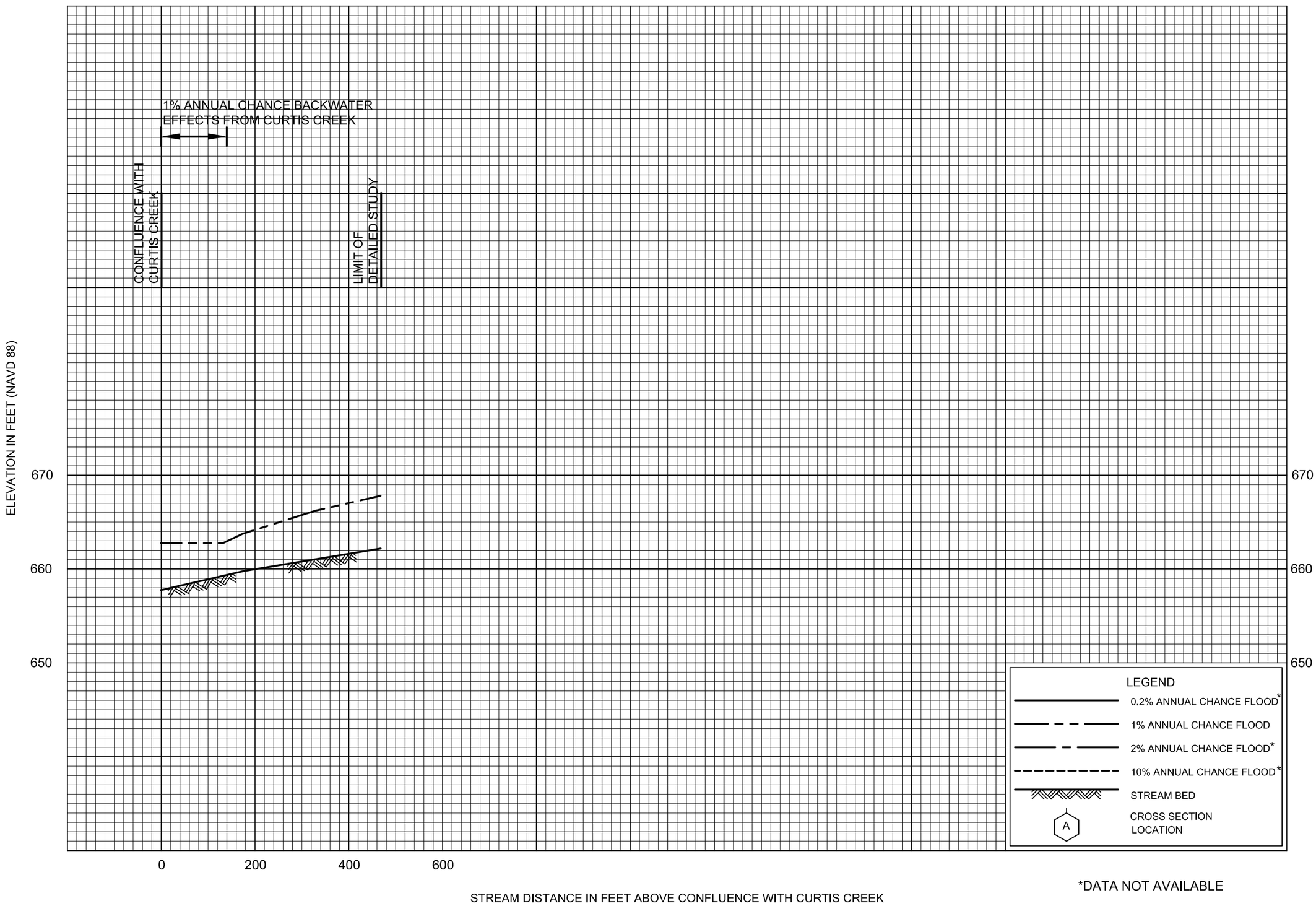
FLOOD PROFILES

TRIBUTARY NO. 3 TO CEDAR CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ADAMS COUNTY, IL

AND INCORPORATED AREAS



FLOOD PROFILES

TRIBUTARY NO.3 TO CURTIS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ADAMS COUNTY, IL

AND INCORPORATED AREAS