

# FLOOD INSURANCE STUDY



## MACON COUNTY, ILLINOIS AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
ARGENTA, VILLAGE OF	170942
BLUE MOUND, VILLAGE OF	170946
DECATUR, CITY OF	170429
FORSYTH, VILLAGE OF	171017
* HARRISTOWN, VILLAGE OF	171214
LONG CREEK, VILLAGE OF	171016
* MACON, CITY OF	171226
MACON COUNTY (UNINCORPORATED AREAS)	170928
MAROA, CITY OF	171215
MOUNT ZION, VILLAGE OF	170962
* NIANTIC, VILLAGE OF	170430
* OREANA, VILLAGE OF	171217
* WARRENSBURG, VILLAGE OF	171218

\* NO SPECIAL FLOOD HAZARD AREAS IDENTIFIED



Macon County

REVISED: TBD

PRELIMINARY: NOVEMBER 18, 2015

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER

17115CV000B



**NOTICE TO  
FLOOD INSURANCE STUDY USERS**

Communities participating in the National Flood Insurance Program (NFIP) have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) may not contain all data available within the Community Map Repository. It is advisable to 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 by the Letter of Map Revision (LOMR) process, which does not involve republication or redistribution of the FIS. It is, therefore, the responsibility of the user to consult with community officials and to check the Community Map Repository to obtain the most current FIS components.

Initial Countywide FIS Effective Date:      June 16, 2011

Revised Countywide FIS Effective Date:      To be determined

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**FLOOD INSURANCE STUDY  
MACON 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 Macon County, Illinois, including: the Cities of Decatur, Macon, and Maroa; the Villages of Argenta, Blue Mound, Forsyth, Harristown, Long Creek, Mount Zion, Niantic, Oreana, and Warrensburg; and the unincorporated areas of Macon County (hereinafter referred to collectively as Macon 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 Macon 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.

Note that the City of Macon and the Villages of Harristown, Niantic, Oreana, and Warrensburg have no special flood hazard areas (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, Macon 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**

City of Decatur:	The hydrologic and hydraulic analyses for the FIS report dated February 1979
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(Reference 1) were performed by Roy F. Weston, Inc., for the Federal Insurance Administration, under Contract No. H-3977. This work, which was completed in April 1977, covered all significant flooding sources in the City of Decatur.

Village of Forsyth:

The hydrologic and hydraulic analyses for the FIS report dated January 6, 1988 (Reference 2) were obtained from the FIS for the Unincorporated Areas of Macon County, Illinois (Reference 3). Additional riverine analyses were performed by the FEMA on a segment of Stevens Creek to incorporate revised topographic information.

Village of Long Creek:

The hydrologic and hydraulic analyses for the FIS report dated August 4, 1987 (Reference 4) were obtained from the FIS for the Unincorporated Areas of Macon County, Illinois (Reference 3).

Macon County  
(Unincorporated Areas):

The hydrologic and hydraulic analyses for the FIS report dated June 4, 1984 (Reference 3) were performed by Daily & Associates, Engineers, Inc. (the Study Contractor) for FEMA, under Contract No. 4720. The hydrologic and hydraulic analyses for a portion of Stevens Creek (from the mouth to County Route 20) and a portion of Spring Creek (from the mouth to Hickory Point Road) were obtained from the "Flood Study of Stevens and Spring Creeks, City of Decatur, Macon County, Illinois" (Reference 5). This study was completed in December 1981.

The hydrologic and hydraulic analyses for Stevens Creek Tributary A, Stevens Creek Tributary B, Long Creek Tributary, and Spring Creek Tributary were performed by Roy F. Weston, Inc.

The hydrologic and hydraulic analyses of Big Creek, Long Creek, Spring Creek (upstream of Hickory Point Road), Stevens Creek (upstream of County Route 20), and the Sangamon River were performed by FEMA.

The authority and acknowledgements for the cities of Macon and Maroa and the villages of Argenta, Blue Mound, Harristown, Mount Zion, Niantic, Oreana, and Warrensburg are not included because there were no previously printed pre-countywide FISs for those communities.

**June 16, 2011**  
**Initial Countywide FIS**

Base map information was derived from digital orthophotography at one-foot resolution photogrammetrically compiled from aerial photography obtained during the spring of 2007 (Reference 6).

The initial countywide FIS was performed under the Cooperating Technical Partners (CTP) Partnership Agreement No. EMC-2007-CA-7026 between the Illinois Department of Natural Resources (hereinafter referred to as IDNR) and FEMA, per the Mapping Activity Statement (MAS) No. IDNR07-17.

**To be determined**  
**Revised Countywide FIS**

This Physical Map Revision (PMR) incorporates new hydrologic and hydraulic analyses of the Spring and Stevens Creeks watershed (Reference 7). Several tributaries to Stevens Creek and Spring Creek are included in the study (see Table 3). The analyses were completed by the Illinois State Water Survey (ISWS) under the CTP Partnership Agreement Nos. EMC-2010-CA-7015 and EMC-2011-CA-7012 between the ISWS and FEMA, per MAS Nos. ISWS10-07 and ISWS11-18.

For the revised panels associated with this mapping project, the base map information shown was provided in digital format by the United States Geological Survey (USGS). This information was derived from digital orthoimagery at a spatial resolution of 1 foot from aerial photography dated 2011 (Reference 7).

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 PMR was performed under the CTP Partnership Agreement No. EMC-2013-CA-7007 between the ISWS and FEMA, per MAS No. ISWS13-10.

### 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 Macon 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**

<b>Community</b>	<b>Initial CCO Date</b>	<b>Final CCO Date</b>
Decatur, City of	April 1, 1977	May 24, 1978
Forsyth, Village of	*	July 22, 1986
Long Creek, Village of	*	July 21, 1986
Macon County (Unincorporated Areas)	Meeting held but date unavailable	August 25, 1983

\*Data not available

#### **June 16, 2011 Initial Countywide FIS**

The project team meeting was held on October 23, 2007 in Decatur, Illinois, and was attended by representatives of Macon County, the City of Decatur, the USDA-NRCS, and IDNR. This meeting was intended to discuss various issues and concerns for the study area. A scoping meeting was held on November 20, 2007 in Decatur, Illinois, and was attended by representatives of Macon County, the Cities of Macon and Decatur, and IDNR.

The results of the study were reviewed at the open house held on June 22, 2010 in Decatur, Illinois, and attended by representatives of Macon County, the City of Decatur, the Villages of Long Creek and Oreana, the ISWS, and IDNR. All problems raised at that meeting have been addressed.

**To be determined**  
**Revised Countywide FIS**

The ISWS hosted the following meetings in Decatur, Illinois in conjunction with the Macon County Risk MAP project:

- Upper Sangamon Watershed Discovery meeting (Macon County): March 28, 2011.
- Stevens Creek Watershed Flood Risk Review meeting: December 4, 1 2013.
- Upper Sangamon Watershed Mitigation Action Discovery meeting: August 12, 2014.

The results of the PMR were reviewed at the final CCO meeting held on \_\_\_\_\_ in \_\_\_\_\_, Illinois and was attended by representatives of \_\_\_\_\_. 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 Macon County including the incorporated areas listed in Section 1.1.

Typically, areas studied by Zone AE methods are selected with priority given to all known flood hazards and areas of projected development or proposed construction.

Table 2, “Stream Name Changes,” lists streams that have names in this countywide FIS other than those used in previously printed FISs.

**Table 2 - Stream Name Changes**

<b>Community</b>	<b>Old Name</b>	<b>New Name</b>
City of Decatur; Macon County, Unincorporated Areas	South Spring Creek	Ward Branch

The streams, or portions of streams, listed in Table 3, “Limits of New or Revised Zone AE Study,” have new or revised hydrologic and hydraulic analyses for this countywide FIS.

**Table 3 - Limits of New or Revised Zone AE Study**

Flooding Source	Study Limits	
	Downstream Limits	Upstream Limits
Independence Branch	Confluence with Spring Creek	Approximately 6,142 feet upstream of confluence with Spring Creek (approximately 530 feet upstream of Illiniwick Road/County Highway 20)
Northeast Drainage Ditch	Confluence with Spring Creek	Approximately 4,975 feet upstream of confluence with Spring Creek (approximately 2,300 feet upstream of Hubbard Avenue)
Spring Creek	Confluence with Stevens Creek	Approximately 53,761 feet upstream of confluence with Stevens Creek (approximately 820 feet upstream of Illiniwick Road/County Highway 20)
Spring Creek Tributary	Confluence with Spring Creek	Approximately 4,644 feet upstream of confluence with Spring Creek (approximately 75 feet upstream of Mound Road/County Highway 22)
Spring Creek Tributary East	Confluence with Spring Creek Tributary	Approximately 2,478 feet upstream of confluence with Spring Creek Tributary (approximately 1,175 feet upstream of Meadowlark Drive)
Stevens Creek	Confluence with Sangamon River	Approximately 102,955 feet upstream of confluence with Sangamon River (approximately 425 feet upstream of Hampshire Road)
Stevens Creek Tributary A	Confluence with Stevens Creek	Approximately 7,259 feet upstream of confluence with Stevens Creek (approximately 75 feet upstream of Boiling Springs Road)
Stevens Creek Tributary B	Confluence with Stevens Creek	Approximately 7,460 feet upstream of confluence with Stevens Creek (approximately 375 feet upstream of Arbor Drive/Taylor Avenue)
Stevens Creek Tributary F	Confluence with Stevens Creek	Approximately 5,145 feet upstream of confluence with Stevens Creek (approximately 3,685 feet upstream of Illiniwick Road/County Highway 20)
Stevens Creek Tributary G	Confluence with Stevens Creek	Approximately 3,925 feet upstream of confluence with Stevens Creek (approximately 1,250 feet upstream of Private Access)

The streams, or portions of streams, listed in Table 4, “Limits of Zone AE Study,” were studied in detail and are included in this report. The limits of Zone AE study are also indicated on the Flood Profiles (Exhibit 1) and on the FIRM (Exhibit 2).

**Table 4 - Limits Zone AE Study**

Flooding Source	Study Limits	
	Downstream Limits	Upstream Limits
Big Creek	Confluence with Long Creek	33,800 feet above the confluence with Long Creek (approximately 75 feet above County Route 60)
Big Creek Arm of Lake Decatur	Mouth at Lake Decatur	12,300 feet above mouth at Lake Decatur (approximately 200 feet downstream of Baltimore Avenue)
Friends Creek	Confluence with Sangamon River	Approximately 73,430 feet above confluence with Sangamon River (approximately 3,330 feet above Washington Street Road)
Friends Creek Ditch	Confluence with Friends Creek	20,600 feet above the confluence with Friends Creek (at Briggs Road)
Independence Branch	Confluence with Spring Creek	Approximately 6,142 feet upstream of confluence with Spring Creek (approximately 530 feet upstream of Illiniwick Road/County Highway 20)
Long Creek	Confluence with Big Creek Arm of Lake Decatur (200 feet downstream of Baltimore Road)	Confluence of Big Creek
Long Creek (East of Big Creek)	Confluence with Long Creek	Approximately 32,300 feet above the confluence (approximately at State Route 105)
Long Creek Tributary	Confluence with Long Creek	5,675 feet above the confluence with Long Creek
Northeast Drainage Ditch	Confluence with Spring Creek	Approximately 4,975 feet upstream of confluence with Spring Creek (approximately 2,300 feet upstream of Hubbard Avenue)
Sangamon River	Macon / Christian County boundary	199,250 feet above the Macon / Christian County boundary at the Macon / Piatt County boundary (approximately 12,850 feet above the confluence of Friends Creek)

**Table 4 - Limits Zone AE Study (continued)**

Flooding Source	Study Limits	
	Downstream Limits	Downstream Limits
Spring Creek	Confluence with Stevens Creek	Approximately 53,761 feet upstream of confluence with Stevens Creek (approximately 820 feet upstream of Illiniwick Road/County Highway 20)
Spring Creek Tributary	Confluence with Spring Creek	Approximately 4,644 feet upstream of confluence with Spring Creek (approximately 75 feet upstream of Mound Road/County Highway 22)
Spring Creek Tributary East	Confluence with Spring Creek Tributary	Approximately 2,478 feet upstream of confluence with Spring Creek Tributary (approximately 1,175 feet upstream of Meadowlark Drive)
Stevens Creek	Confluence with Sangamon River	Approximately 102,955 feet upstream of confluence with Sangamon River (approximately 425 feet upstream of Hampshire Road)
Stevens Creek Tributary A	Confluence with Stevens Creek	Approximately 7,259 feet upstream of confluence with Stevens Creek (approximately 75 feet upstream of Boiling Springs Road)
Stevens Creek Tributary B	Confluence with Stevens Creek	Approximately 7,460 feet upstream of confluence with Stevens Creek (approximately 375 feet upstream of Arbor Drive/Taylor Avenue)
Stevens Creek Tributary F	Confluence with Stevens Creek	Approximately 5,145 feet upstream of confluence with Stevens Creek (approximately 3,685 feet upstream of Illiniwick Road/County Highway 20)
Stevens Creek Tributary G	Confluence with Stevens Creek	Approximately 3,925 feet upstream of confluence with Stevens Creek (approximately 1,250 feet upstream of Private Access)
Tributary 2	Mouth at Lake Decatur	3,715 feet above the mouth at Lake Decatur (approximately 1,000 feet above Lake Ridge Avenue)
Ward Branch	Confluence with Sangamon River	26,700 feet above the confluence with Sangamon River (at County Route 30)

**June 16, 2011**  
**Initial Countywide FIS**

The Friends Creek Zone AE study conducted for the 1984 FIS for the unincorporated areas of Macon County (Reference 3) was used to map Zone AE floodplain and floodway within the Village of Argenta, superseding the Friends Creek approximate study. In addition, the 1984 Macon County (Unincorporated Areas) Zone AE study of Ward Branch (formerly South Spring Creek) was used to map Zone AE floodplain for the entire reach of Ward Branch within the City of Decatur, superseding the approximate study.

Effective base flood elevations (BFEs) for Decatur and the unincorporated areas of Macon County were in disagreement along the following streams: Sangamon River, Long Creek and Long Creek Tributary. The effective data was reviewed and a single profile was prepared for each stream. Some BFEs changed as a result, and these revisions were incorporated as part of this project.

**To be determined**  
**Revised Countywide FIS**

This PMR incorporates a new study of the Spring and Stevens Creeks watershed (Reference 7). Zone AE studies were conducted for the following streams: Independence Branch, Northeast Drainage Ditch, Spring Creek, Spring Creek Tributary, Spring Creek Tributary East, Stevens Creek, Stevens Creek Tributary A, Stevens Creek Tributary B, Stevens Creek Tributary F, and Stevens Creek Tributary G.

**Letters of Map Revision**

At the time of this PMR, there were no existing LOMRs affecting the 13 revised FIRM panels.

Table 5 provides a history of the incorporation of determination letters issued by FEMA for the June 16, 2011 initial countywide FIS. It should be noted that all or portions of a given map change may be superseded by subsequent LOMRs or restudies.

**Table 5 - Letters of Map Change (June 16, 2011)**

<b>LOMC Type</b>	<b>Case Number</b>	<b>Effective Date</b>	<b>Community</b>	<b>Flooding Source</b>	<b>Project Identifier</b>
LOMR	01-05-373P	6/27/2001	City of Decatur	Spring Creek	Spring Creek Improvements

### **FIRM Notes to Users**

Each FIS report provides floodplain data, which may include a combination of the following: 10-, 4-, 2-, 1-, and 0.2-percent-annual-chance flood elevations (the 1-percent-annual-chance flood elevation is also referred to as the Base Flood Elevation [BFE]); delineations of the 1-percent-annual-chance and 0.2-percent-annual-chance floodplains; and 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.

Figure 1 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.

**Figure 1 - FIRM Notes to Users**

## **NOTES TO USERS**

For information and questions about this map, available products associated with this FIRM including historic versions of this 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 the 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 this 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 this 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 this 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 1 - FIRM Notes to Users (continued)

**PROJECTION INFORMATION:** The projection used in the preparation of the map was State Plane Illinois East 1201. 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 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 Macon County, IL, corresponding revisions to the FIRM Index will be incorporated to reflect the effective dates of those panels.

**FLOOD RISK REPORT:** A Flood Risk Report (FRR) may be available for many of the flooding sources and communities referenced in this 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 allow 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.

## 2.2 Community Description

Macon County is located in the Illinois River Valley in central Illinois. The county has a total area of 374,900 acres, or approximately 585 square miles. It is traversed by Interstate Highway 72, U.S. Highways 36 and 51, and six state highways (Reference 8). The county is bounded on the west by Christian, Logan and Sangamon Counties; on the north by DeWitt County; on the east by Moultrie and Piatt Counties; and on the south by Christian and Shelby Counties. In 2010, Macon County had a population of 110,768. The estimated 2014 population is 108,350 (Reference 9).

Much of Macon County is devoted to agricultural production, and cropland covers 281,415 acres, or 75.1 percent of the county. The remainder of the county is covered by grassland (12.0 percent), forest/woodland (4.1 percent), wetland (1.4 percent), urban/built-up land (5.6 percent), open water (1.8 percent), and barren/exposed land (0.1 percent). Of the 102 Illinois counties, Macon County ranks fifteenth in acreage covered in urban/built-up land (20,878 acres), twelfth in acres covered by urban grassland (11,100 acres), and seventeenth in acres covered by cropland (281,415 acres) (Reference 10).

Industries in the county other than agriculture are located primarily in the Decatur area and include manufacturers of heavy equipment, auto parts, and glass as well as the agriculture-related industries of agricultural product processing, seed production, and agricultural service (Reference 8).

Macon County's topography is nearly level and gently sloping on the broad uplands with greater relief in areas dissected by drainageways. The highest elevation in the county is 740 feet above sea level in Oakley Township and its lowest elevation is 540 feet above sea level where the Sangamon River leaves the county. Most soils in the county are identified as poorly drained soils (145,000 acres) or somewhat poorly drained soils (115,000 acres) (Reference 8). Most of the county is drained by the Sangamon River, the largest river in Macon County, and its tributaries.

In 1923, Lake Decatur was impounded in response to increasing water demands made by local industries, particularly the food processing plants. Urban and residential development in the City of Decatur has encroached on the floodplains of Lake Decatur as well as those of Stevens Creek and Spring Creek. Urban development has encroached into the floodplains in numerous places, and obstructions to the flow of floodwaters, such as sewer lines, footbridges, access roads, and highways, have increased the natural level of floodwaters.

Stevens Creek is a tributary of the Sangamon River and rises in northern Macon County, flowing first south then southwesterly along the western edge of Decatur as well as along the western edge of the community of Forsyth, where residential subdivisions, community parks, and a golf course primarily account for land use

of the floodplain (Reference 11). Extreme northern and southern reaches of the stream within the Decatur city limits are currently developed. Urban Decatur has also expanded southwards into an area where Big Creek flows northwest into Long Creek (Reference 12).

Spring Creek is the main tributary of Stevens Creek, joining it 4.9 miles from its mouth (Reference 3). Spring Creek flows south and then southwest for a distance of approximately 9 miles, and has a drainage area of approximately 27 square miles.

Other streams in the county include Friends Creek, which flows southeast past Argenta to its confluence with the Sangamon River just upstream of Lake Decatur; Long Creek (East of Big Creek), which joins Big Creek 1.8 miles from Lake Decatur; Ward Branch (formerly South Spring Creek), which rises in south central Macon County and flows north to Decatur and its confluence with the Sangamon River just upstream of the Illinois Route 48 Bridge (Reference 3).

Macon County has a typical mid-western continental climate characterized by cold winters and hot summers. According to records from the weather station located in Decatur, Illinois (station 112193), the average annual temperature for Macon County is 53.1 degrees Fahrenheit (°F). The average annual total precipitation at the Decatur station is 39.74 inches. The largest recorded daily rainfall total was 5.11 inches on July 26, 1992 (Reference 13).

### 2.3 Principal Flood Problems

In Macon County, floods along the Sangamon River and its principal tributaries are of frequent occurrence and considerable duration. The Sangamon River has been known to flood four times in one year. Flooding in Macon County is usually caused by snowmelt in the drainage area, often accompanied by prolonged early spring rain or, occasionally, by prolonged late spring or fall rains alone (Reference 3).

In 2008, extremely heavy precipitation occurred across Illinois, resulting in flooding and above-average stream flows during every month of the year. On September 14, 2008, the river stage of record was set on the Sangamon River at the Route 48 gage (05573540) at Decatur, Illinois. Overall in 2008, the total insured property losses in Illinois from flooding and heavy rain damages were \$645 million (Reference 14).

Table 6, “Historical Flood Data” summarizes the river stages of record on the Sangamon River at Route 48 at Decatur, Illinois. Information for the table was collected from the USGS National Water Information System, *Peak Streamflow for Illinois* (Reference 15).

**Table 6 - Historical Flood Data**

Sangamon River at Route 48 at Decatur, Illinois  
USGS Gage Number 05573540

Date	Peak Streamflow (cfs) <sup>1</sup>	River Stage (feet)
September 14, 2008	21,500 <sup>2</sup>	24.43
May 12, 2002	31,800 <sup>2</sup>	24.33
May 2, 1983	12,400	23.04
November 19, 1985	13,900	22.61
December 30, 1990	12,100	21.87
May 16, 1990	13,000	21.50
April 15, 1994	17,100	21.12
January 13, 2005	15,900 <sup>2</sup>	20.96
April 19, 2013	13,400 <sup>2</sup>	20.65
February 26, 1985	8,700	19.94

<sup>1</sup>Discharge affected by regulation or diversion

<sup>2</sup>All or part of the record affected by urbanization, mining, agricultural changes, channelization or other

Other major streams at Decatur may also flood when the Sangamon River is at flood level. Flash floods on individual streams have also occurred. Stevens Creek is very flood prone and has caused considerable damage to hillsides, roadways, and parks within Decatur (Reference 1) and has also caused much flood damage in neighboring Forsyth (Reference 12).

#### 2.4 Flood Protection Measures

For purposes of the NFIP, FEMA only recognizes levee systems that meet, and continue to meet, minimum design, operation, and maintenance standards that are consistent with comprehensive floodplain management criteria. The Code of Federal Regulations, Title 44, Section 65.10 (44 CFR 65.10) describes the information needed for FEMA to determine if a levee system reduces the risk from the 1-percent-annual-chance flood. This information must be supplied to FEMA by the community or other party when a flood risk study or restudy is conducted, when FIRMs are revised, or upon FEMA request. FEMA reviews the information for the purpose of establishing the appropriate FIRM flood zone. Levee systems that are determined to reduce the risk from the 1-percent-annual-chance flood are accredited by FEMA.

The Sanitary District of Decatur (SDD) levee, located at the confluence of the Sangamon River and Stevens Creek, was built to provide flood protection to the SDD facilities. A floodwall was later added to provide additional protection from Stevens Creek floodwaters. However, the SDD levee is not and has never been accredited by FEMA as reducing risk from the 1-percent-annual-chance flood.

### 3.0 ENGINEERING METHODS

For the flooding sources studied by Zone AE methods in Macon 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-, 25-, 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-, 25-, 50-, 100-, and 500-year floods, have a 10-, 4-, 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 Macon 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 Zone AE methods affecting the county.

Analyses that have not been superseded have been compiled and are summarized below.

##### **Pre-Countywide FISs**

For the Sangamon River between IL 48 and Nesbitt Bridge, peak discharges were developed based on an analysis of records from gages maintained by the USGS at Riverton (No. 05576500) and Oakley (No. 05572500), Illinois. The bias in these records resulting from storage of flood flows by Lakes Decatur and Springfield was considered, and the reliability of the peak discharges developed from these records was compared with that used to develop discharges for ungaged streams. Values of the 1-, 2-, 1-, and 0.2-percent-annual-chance peak discharges at these gages were obtained from a Log-Pearson Type III distribution of annual peak flow data. These peak discharges were used in conjunction with the State Standard Method recommended by the State of Illinois (Reference 16, 17) to identify peak discharges above and below Lake Decatur. The Oakley gage data was only used for development of peak discharges above Decatur Dam.

For the Sangamon River (upstream and downstream of the City of Decatur reach), Big Creek, Friends Creek, Friends Creek Ditch, Independence Branch, Long Creek, Long Creek (East of Big Creek), Long Creek Tributary, and Ward Branch (formerly South Spring Creek), the discharges were determined using the USGS report, “Technique for Estimating Magnitude and Frequency of Floods in Illinois” (Reference 18).

To define discharge-frequency data for the Big Creek Arm of Lake Decatur and Tributary 2, two methods were considered: a regional relationship relating basin characteristics to streamflow characteristics (Reference 16); and a method developed by the Soil Conservation Service (SCS), which utilizes relationships of streamflow, hydrologic soil type, land use, and drainage area (Reference 19). The former method was used to derive the 10-, 2-, 1-, and 0.2-percent-annual-chance flows. Discharges for the 0.2-percent-annual-chance flood were determined by straight-line extrapolation of a log-log graph of flood discharges computed for frequencies up to the 1-percent-annual chance.

### **June 16, 2011 Initial Countywide FIS**

No new studies were conducted for the initial countywide FIS. However, hydrologic analyses conducted for the 1984 FIS for the unincorporated areas of Macon County (Reference 3) were incorporated for Friends Creek within the Village of Argenta, superseding previously mapped Zone A.

### **To be determined Revised Countywide FIS**

Existing conditions hydrologic analyses were developed for Stevens Creek and tributaries and Spring Creek and tributaries to estimate the 10-, 4-, 2-, 1-, and 0.2-percent annual chance of exceedance events. Hydrologic data was developed within the U.S. Army Corps of Engineers (USACE) Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS) Version 3.5.0 modeling application (Reference 20).

For the HEC-HMS hydrologic computer model, the soil infiltration rate was estimated using the SCS curve number method. The transformation method used was the Clark Unit Hydrograph. Reach routing within HEC-HMS was performed using Muskingum-Cunge and Modified Puls methodologies. The 24-hour rainfall event was deemed to be the critical duration event for the Stevens Creek and Spring Creek watershed.

The resulting 1-percent annual chance discharges for the HEC-HMS model were plotted and compared to two regression equation discharges, bridge plan discharges, and the effective FIS discharges for several locations along Stevens Creek and Spring Creek. HEC-HMS discharges were also compared to regression

equation flows for the tributaries of Spring Creek and Stevens Creek. No stream gage sites are present on either Stevens Creek or Spring Creek. However, data and observations from a high precipitation/high flow event of September 14-15, 2008 aided in validation of the HEC-HMS model.

A summary of the drainage area-peak discharge relationships for all the streams studied by Zone AE methods is shown in Table 7, "Summary of Discharges."

**Table 7 - Summary of Discharges**

<i><u>Flooding Source and Location</u></i>	<i><u>Drainage Area (square miles)</u></i>	<i>Peak Discharges (cubic feet per second)</i>				
		<i><u>10-Percent- Annual-Chance</u></i>	<i><u>4-Percent- Annual-Chance</u></i>	<i><u>2-Percent- Annual-Chance</u></i>	<i><u>1-Percent- Annual-Chance</u></i>	<i><u>0.2-Percent- Annual-Chance</u></i>
<b>Big Creek</b>						
At confluence with Long Creek	26.2	2,670	*	4,290	5,250	6,770
<b>Big Creek Arm of Lake Decatur</b>						
At mouth	89.0	6,238	*	9,664	11,541	15,000
<b>Friends Creek</b>						
At confluence with the Sangamon River	126.7	4,190	*	6,180	7,030	8,930
Just upstream of confluence of Kickapoo Creek	64.0	2,580	*	3,820	4,350	5,540
Just upstream of confluence of Friends Creek Ditch	18.6	1,150	*	1,720	1,960	2,510
<b>Friends Creek Ditch</b>						
At confluence with Friends Creek	40.8	1,790	*	2,660	3,030	3,860
<b>Independence Branch</b>						
Above confluence with Spring Creek	3.3	257	338	411	492	632
<b>Long Creek</b>						
At mouth (at Big Creek Arm of Lake Decatur)	53.0	4,410	*	6,930	8,320	10,700
At State Route 121	45.4	4,050	*	6,400	7,740	9,980
<b>Long Creek (East of Big Creek)</b>						
At confluence with Big Creek	18.1	1,980	*	2,900	3,590	4,630
<b>Long Creek Tributary</b>						
At confluence with Long Creek	2.9	569	*	945	1,181	1,580

\*Data not available

**Table 7 - Summary of Discharges (continued)**

<i><u>Flooding Source and Location</u></i>	<i><u>Drainage Area (square miles)</u></i>	<i>Peak Discharges (cubic feet per second)</i>				
		<i><u>10-Percent- Annual-Chance</u></i>	<i><u>4-Percent- Annual-Chance</u></i>	<i><u>2-Percent- Annual-Chance</u></i>	<i><u>1-Percent- Annual-Chance</u></i>	<i><u>0.2-Percent- Annual-Chance</u></i>
<b>Northeast Drainage Ditch</b>						
Above confluence with Spring Creek	3.4	407	517	614	722	903
<b>Sangamon River</b>						
Just upstream of confluence of Stevens Creek	941 <sup>1</sup>	13,850	*	23,680	27,700	34,900
At Lost Bridge	943	12,972	*	20,161	23,028	30,600
At Oakley Gage	773	11,800	*	17,000	19,000	25,400
Just upstream of confluence of Friends Creek	647	10,200	*	14,700	16,500	22,000
<b>Spring Creek</b>						
Above confluence with Stevens Creek	26.9	2,256	2,902	3,490	4,116	5,443
Approximately 690 feet downstream of Main Street/ Business Route 51	24.5	1,867	2,408	2,898	3,422	4,533
Below confluence with Northeast Drainage Ditch	22.3	1,749	2,245	2,702	3,192	4,227
Below confluence with Spring Creek Tributary	18.7	1,373	1,777	2,152	2,552	3,393
Above confluence with Spring Creek Tributary	16.1	1,234	1,583	1,909	2,256	2,987
Approximately 1,100 feet downstream of confluence with Independence Branch	14.2	1,029	1,320	1,592	1,882	2,490
Below confluence with Independence Branch	12.5	893	1,146	1,384	1,636	2,167
Above confluence with Independence Branch	6.6	457	585	702	827	1,091

<sup>1</sup>Drainage area discrepancy between pre-countywide Macon County (Unincorporated Areas) FIS and pre-countywide City of Decatur FIS

\*Data not available

**Table 7 - Summary of Discharges (continued)**

<i><u>Flooding Source and Location</u></i>	<i><u>Drainage Area (square miles)</u></i>	<i>Peak Discharges (cubic feet per second)</i>				
		<i><u>10-Percent- Annual-Chance</u></i>	<i><u>4-Percent- Annual-Chance</u></i>	<i><u>2-Percent- Annual-Chance</u></i>	<i><u>1-Percent- Annual-Chance</u></i>	<i><u>0.2-Percent- Annual-Chance</u></i>
<b>Spring Creek Tributary</b>						
Above confluence with Spring Creek	2.6	408	521	622	735	924
Above confluence with Spring Creek Tributary East	1.3	172	224	271	323	412
<b>Spring Creek Tributary East</b>						
Above confluence with Spring Creek Tributary	0.9	254	320	378	443	548
<b>Stevens Creek</b>						
At confluence with Sangamon River <sup>1</sup>	88.0	6,357	8,719	10,472	12,597	17,814
Below confluence with Stevens Creek Tributary A	84.5	6,797	8,849	10,826	13,024	17,984
Above confluence with Spring Creek	49.6	4,306	5,855	7,316	8,791	12,329
Below confluence with Stevens Creek Tributary B <sup>1</sup>	47.9	4,165	5,661	7,073	8,491	11,902
Above confluence with Stevens Creek Tributary B	46.7	4,350	5,880	7,252	8,790	12,188
At I-72	45.5	4,175	5,643	6,959	8,435	11,691
Below confluence with Stevens Creek Tributary F	41.4	4,131	5,559	6,833	8,251	10,663
Above confluence with Stevens Creek Tributary F	28.9	2,746	3,663	4,460	5,368	6,909
At Wise Road	23.4	2,142	2,846	3,467	4,170	5,360
Below confluence with Stevens Creek Tributary G	17.5	1,469	1,929	2,339	2,801	3,567
Above confluence with Stevens Creek Tributary G	8.4	641	838	1,014	1,203	1,545

<sup>1</sup>Decrease in discharge due to floodplain storage attenuation

**Table 7 - Summary of Discharges (continued)**

<u>Flooding Source and Location</u>	<u>Drainage Area (square miles)</u>	<u>Peak Discharges (cubic feet per second)</u>				
		<u>10-Percent- Annual-Chance</u>	<u>4-Percent- Annual-Chance</u>	<u>2-Percent- Annual-Chance</u>	<u>1-Percent- Annual-Chance</u>	<u>0.2-Percent- Annual-Chance</u>
<b>Stevens Creek Tributary A</b> Above confluence with Stevens Creek	7.9	999	1,321	1,609	1,933	2,486
<b>Stevens Creek Tributary B</b> Above confluence with Stevens Creek	1.2	129	174	214	262	339
<b>Stevens Creek Tributary F</b> Above confluence with Stevens Creek	7.1	1,127	1,474	1,784	2,133	2,718
<b>Stevens Creek Tributary G</b> Above confluence with Stevens Creek	9.1	1,045	1,365	1,653	1,972	2,520
<b>Tributary 2</b> At mouth	1.7	698	*	1,174	1,519	2,060
<b>Ward Branch</b> At mouth	10.1	1,430	*	2,190	2,510	3,270

\*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. BFEs on the FIRM represent the elevations shown on the Flood Profiles and in the Floodway Data tables in the FIS Report. Rounded whole-foot elevations may be shown on the FIRM in coastal areas, areas of ponding, and other areas with static BFEs. These whole-foot elevations may not exactly reflect the elevations derived from the hydraulic analyses.

Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS Report in conjunction with the data shown on the FIRM. The hydraulic analyses for this FIS were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

Hydraulic analyses that have not been superseded have been compiled and are summarized below.

### **Pre-Countywide FISs**

The USACE provided source data consisting of digitized cross sections in computer data decks for Sangamon River downstream of Lake Decatur, Big Creek and its tributary, and Long Creek (East of Big Creek). Minor changes were authorized by FEMA through which the new structures built in the floodplain since the USACE work, in approximately 1970, were field surveyed by the Study Contractor and the revisions to the data files were made. At the locations where the Study Contractor provided surveyed channel cross sections, the overbank sections were developed from USGS Quadrangle Maps (Reference 21, 22). Ward Branch (formerly South Spring Creek) was analyzed by use of the surveyed sections and USGS mapping interpretations while for the Sangamon River upstream of Lake Decatur and its tributaries, Friends Creek and Friends Creek Ditch, the surveyed channel cross sections were supplemented by overbank information obtained from topographic maps and a 2-foot contour interval (Reference 23).

For the Sangamon River (upstream and downstream of the reach within the City of Decatur), Big Creek, Friends Creek, Friends Creek Ditch, Independence Branch, Long Creek, Long Creek (East of Big Creek), Long Creek Tributary, and Ward Branch (formerly South Spring Creek), the 10-, 2-, 1-, and 0.2-percent annual chance flood profiles were modeled by use of the generalized computer program, "HEC-2 Water-Surface Profiles" (Reference 24). Input data consisted of discharges, roughness factors, expansion and contraction coefficients, cross-section coordinates (elevation and station), and distances between cross sections

measured along the left overbank, right overbank, and channel. Starting water-surface elevations were calculated using the slope-area method. When appropriate, the tributary starting water-surface elevation was adjusted by engineering judgment to reflect probable water surfaces during flooding on the larger streams.

For the Big Creek Arm of Lake Decatur and Tributary 2, cross-section data were obtained by field measurement. For the Sangamon River between IL 48 and Nesbitt Bridge cross section data was supplied by the USACE (Reference 25) and was updated by field measurement. Water-surface elevations of floods of the selected recurrence intervals were computed through use of the USACE HEC-2 step-backwater computer program (Reference 26). For those streams for which data was supplied by the USACE, existing computer input data were used directly for this study (Reference 27, 28). For streams tributary to Lake Decatur, starting water-surface elevations were assumed as critical depth—the normal pool elevation of Lake Decatur with the gates at the dam being open. Starting water-surface elevations Tributary 2 were based on slope-area computations.

### **June 16, 2011 Initial Countywide FIS**

No new studies were conducted for the initial countywide FIS. However, hydraulic analyses conducted for the 1984 FIS for the unincorporated areas of Macon County (Reference 3) were incorporated for Friends Creek within the Village of Argenta, superseding previously mapped Zone A.

### **To be determined Revised Countywide FIS**

For Stevens Creek and tributaries and Spring Creek and tributaries, cross section locations were developed in HEC-GeoRAS Version 10.0 (Reference 29), and surveyed channel geometry was inserted into topographically generated cross-sectional data. Existing conditions steady flow hydraulic models were developed within the USACE Hydrologic Engineering Center – River Analysis System (HEC-RAS) Version 4.1 (Reference 30) to compute the 10-, 4-, 2-, 1-, and 0.2-percent annual chance water surface profiles. Hydraulic model data was developed through field surveys performed by the IDNR Office of Water Resources (IDNR-OWR). Channel sections, bridges, culverts, and hydraulic structures were surveyed with some additional definition of channel overbank areas and roadway crests using a digital elevation model (DEM) derived from Light Detection and Ranging (LiDAR) data (Reference 31). Information from construction plans was used to supplement the survey data.

Downstream boundary conditions were determined as normal flow depths based on downstream channel slopes. No stream gage sites are present on either Stevens Creek or Spring Creek. However, data and observation from the high

precipitation/high flow event of September 14-15, 2008 aided in validation of the HEC-RAS models. Chow (Reference 15) was used to determine the proper Manning's coefficients for each stream channel and overbank area.

Floodway analysis was also performed for the 1-percent annual chance of exceedance event for each of the studied streams to establish a 0.1 foot rise in water surface and to meet the auxiliary floodway requirements within Illinois concerning velocity and conveyance preservation. The water surface profiles and floodway data were used in conjunction with topographic data to delineate the 1- and 0.2-percent-annual-chance floodplain and regulatory floodway.

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"
Big Creek	0.040	0.080
Big Creek Arm of Lake Decatur	0.080	0.040-0.080
Friends Creek	0.030-0.060	0.060-0.080
Friends Creek Ditch	*	*
Independence Branch	0.035	0.050
Long Creek	0.040	0.080
Long Creek (East of Big Creek)	0.024-0.040	0.060-0.080
Long Creek Tributary	0.040-0.080	0.040-0.080
Northeast Drainage Ditch	0.035	0.045-0.065
Sangamon River	0.016-0.080	0.020-0.080
Spring Creek	0.035-0.048	0.050-0.100
Spring Creek Tributary	0.045-0.055	0.050-0.130
Spring Creek Tributary East	0.050-0.055	0.060-0.130
Stevens Creek	0.035-0.040	0.040-0.130
Stevens Creek Tributary A	0.045	0.100
Stevens Creek Tributary B	0.045	0.050-0.100
Stevens Creek Tributary F	0.035-0.045	0.040-0.050
Stevens Creek Tributary G	0.040-0.045	0.040-0.100
Tributary 2	0.080	0.04-0.080
Ward Branch	0.035-0.040	0.060-0.080

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

Flood elevations shown in this FIS Report and on the FIRMs are referenced to NAVD88. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between NGVD29 and NAVD88 or other datum conversion, visit the National Geodetic Survey website at [www.ngs.noaa.gov](http://www.ngs.noaa.gov). The National Geodetic Survey may also be contacted at the following address:

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

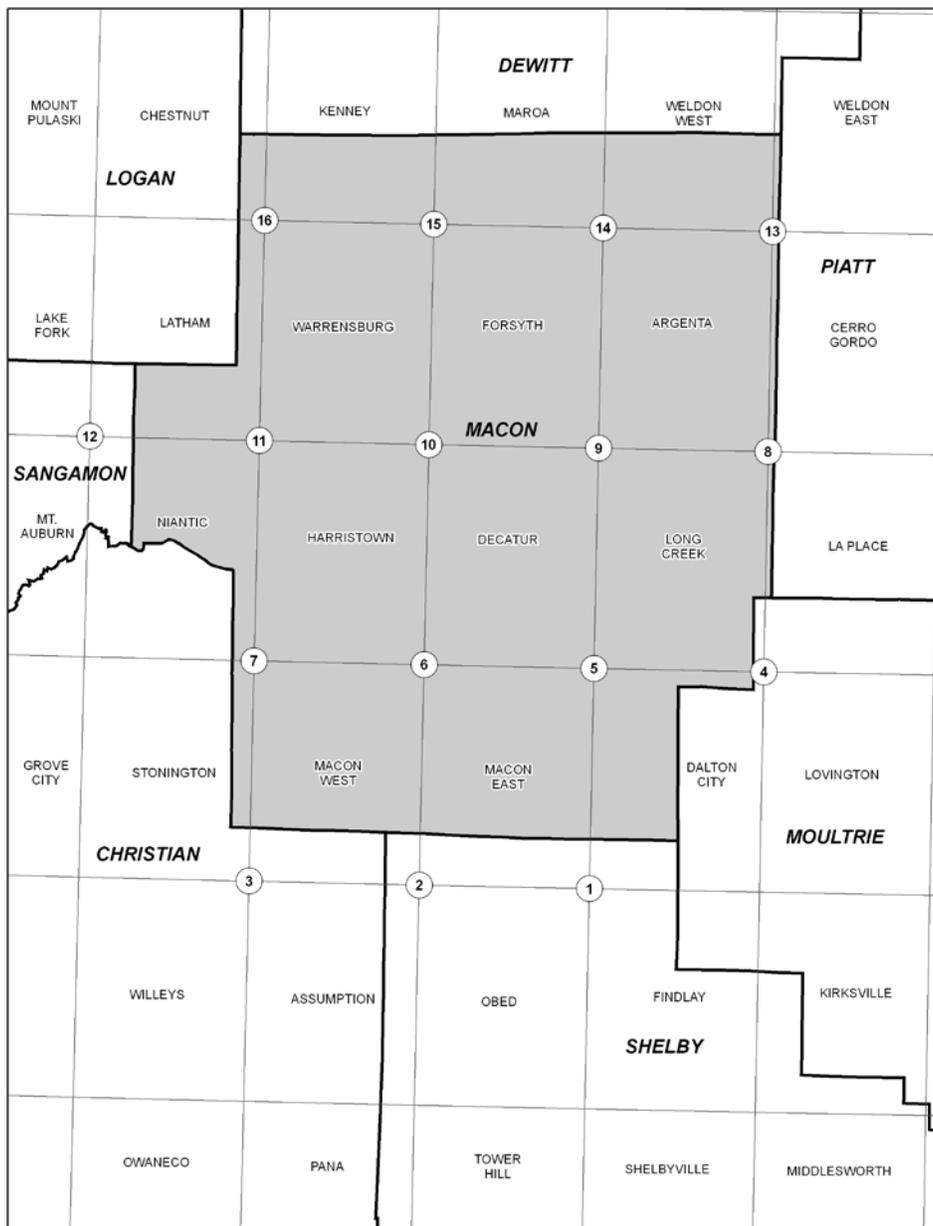
Temporary vertical monuments are often established during the preparation of a flood hazard analysis for the purpose of establishing local vertical control. Although these monuments are not shown on the FIRM, they may be found in the archived project documentation associated with the FIS Report and the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

To obtain current elevation, description, and/or location information for benchmarks in the area, please contact information services branch of the NGS at (301) 713-3242, or visit their website at [www.ngs.noaa.gov](http://www.ngs.noaa.gov).

The datum conversion locations and values that were calculated for Macon County are provided below:

**June 16, 2011**  
**Initial Countywide FIS**

Effective information for the initial countywide FIS was converted from NGVD29 to NAVD88 based on data presented in Figure 2 and Table 9. Computations show an average conversion factor of -0.262 feet (NGVD29 - 0.262 = NAVD88) for the county. The conversion factor was applied uniformly across the county and used to prepare the Summary of Stillwater Elevations Table, Floodway Data Tables, Flood Profiles, and FIRMs.



**Figure 2 – Vertical Datum Conversions**  
**USGS Quadrangle Corner Intersections**  
 The change in elevation for each Point ID is listed in Table 9.

**Table 9 - Vertical Datum Conversions  
Single Conversion Factor (countywide) Method**

<b>Point ID #</b>	<b>Quadrangle Name</b>	<b>Corner</b>	<b>NAD83 Latitude (dec. deg.)</b>	<b>NAD83 Longitude (dec. deg.)</b>	<b>NGVD29 to NAVD88 Elevation Change (feet)</b>
1	Findlay	NW	39.625	88.875	-0.253
2	Obed	NW	39.625	89.000	-0.279
3	Assumption	NW	39.625	89.125	-0.285
4	Lovington	NW	39.750	88.750	-0.210
5	Dalton City	NW	39.750	88.875	-0.240
6	Macon East	NW	39.750	89.000	-0.240
7	Macon West	NW	39.750	89.125	-0.289
8	La Place	NW	39.875	88.750	-0.223
9	Long Creek	NW	39.875	88.875	-0.253
10	Decatur	NW	39.875	89.000	-0.276
11	Harristown	NW	39.875	89.125	-0.302
12	Niantic	NW	39.875	89.250	-0.312
13	Cerro Gordo	NW	40.000	88.750	-0.243
14	Argenta	NW	40.000	88.875	-0.246
15	Forsyth	NW	40.000	89.000	-0.253
16	Warrensburg	NW	40.000	89.125	-0.282
Range of conversion values					-0.312 through -0.210
Average conversion values					<b>-0.262</b>
Maximum variance from the average conversion					0.052
Maximum variance from a non-conversion value					0.312

#### **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 Zone AE 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.

### **June 16, 2011**

#### **Initial Countywide FIS**

Floodplain delineations for the initial countywide FIS were made using the Illinois State Geological Survey statewide ArcSDE raster mosaic of USGS digital raster graphs at a scale of 1:24,000 (Reference 32) and the USGS National Elevation Dataset (Reference 33).

#### **To be determined**

#### **Revised Countywide FIS**

For the revision area, floodplain delineations used a DEM developed by the ISWS from 2010 LiDAR data provided by Macon County (Reference 31). The floodplain boundaries were further refined using a Digital Terrain Model (DTM) developed by the Illinois State Geological Survey from 2011 LiDAR data provided through the Illinois Height Modernization Program (Reference 34). The data support a contour interval of 2 feet.

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 Zone A 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 3, "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 35). 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 3, "Floodway Schematic."

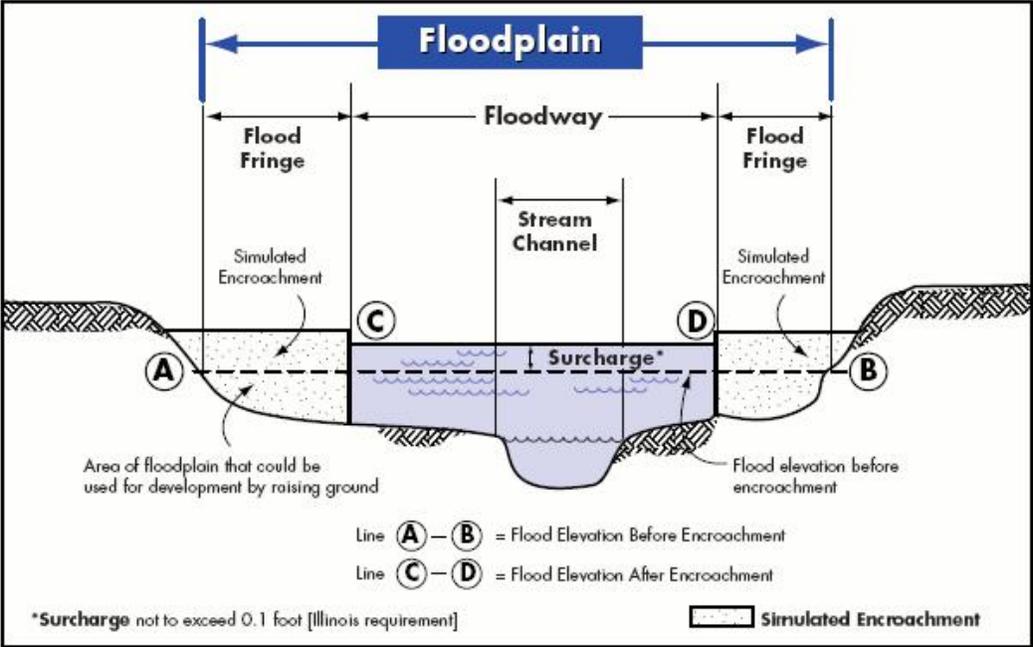


Figure 3 - Floodway Schematic

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.

**June 16, 2011**  
**Initial Countywide FIS**

Floodway was mapped for Friends Creek within the Village of Argenta and Ward Branch (formerly South Spring Creek) within the City of Decatur, which previously did not have mapped floodway.

**To be determined**  
**Revised Countywide FIS**

New and/or revised floodway was mapped for Independence Branch, Northeast Drainage Ditch, Spring Creek, Spring Creek Tributary, Spring Creek Tributary East, Stevens Creek, Stevens Creek Tributary A, Stevens Creek Tributary B, Stevens Creek Tributary F, and Stevens Creek Tributary G.

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 FIS. 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 BFEs that creates a potential for flood damages.

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Big Creek								
A	1,000	480	4,278	1.2	630.5	630.5	630.6	0.1
B	6,000	263	1,850	2.8	632.0	632.0	632.1	0.1
C	10,500	370	2,095	2.5	633.9	633.9	634.0	0.1
D	13,200	650	2,582	2.0	636.6	636.6	636.7	0.1
E	14,150	650	2,551	2.1	638.1	638.1	638.2	0.1
F	15,050	550	1,921	2.7	640.0	640.0	640.0	0.0
G	15,700	490	1,908	2.8	641.8	641.8	641.8	0.0
H	16,380	220 <sup>2</sup>	1,304	4.0	644.7	644.7	644.7	0.0
I	17,650	953	4,782	1.1	646.0	646.0	646.0	0.0
J	19,130	690	2,277	2.3	646.6	646.6	646.7	0.1
K	21,170	431	1,351	3.9	648.6	648.6	648.6	0.0
L	22,830	501	2,186	1.3	651.8	651.8	651.8	0.0
M	24,330	480	1,600	1.8	652.7	652.7	652.7	0.0
N	26,050	260	992	2.9	654.8	654.8	654.8	0.0
O	28,150	190	539	4.2	659.9	659.9	660.0	0.1
P	30,800	300	1,101	2.1	665.3	665.3	665.3	0.0
Q	32,430	200	696	3.3	667.8	667.8	667.8	0.0
R	33,779	190	594	3.8	674.7	674.7	674.8	0.1

<sup>1</sup> Feet above confluence with Long Creek

<sup>2</sup> Floodway width reflects constricted section, see FIRM panel for regulatory floodway

**TABLE 10**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**MACON COUNTY, IL  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**BIG CREEK**

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
Big Creek Arm of Lake Decatur								
A	500 <sup>1</sup>	1,646	8,230	1.4	618.5	611.2 <sup>3</sup>	611.3	0.1
B	6,350 <sup>1</sup>	1,257	4,685	2.5	618.5	613.4 <sup>3</sup>	613.5	0.1
C	11,550 <sup>1</sup>	2,664	5,116	1.6	618.5	616.4 <sup>3</sup>	616.5	0.1
Friends Creek								
A	4,800 <sup>2</sup>	1,346	5,103	1.4	625.5	625.5	625.5	0.0
B	8,900 <sup>2</sup>	1,303	2,829	2.5	627.5	627.5	627.6	0.1
C	10,478 <sup>2</sup>	1,701	5,061	1.4	629.0	629.0	629.0	0.0
D	12,978 <sup>2</sup>	644	2,847	2.5	629.8	629.8	629.8	0.0
E	14,478 <sup>2</sup>	1,334	6,358	1.1	630.5	630.5	630.6	0.1
F	17,876 <sup>2</sup>	200	1,140	6.2	632.0	632.0	632.1	0.1
G	19,116 <sup>2</sup>	617	3,801	1.8	634.3	634.3	634.3	0.0
H	23,516 <sup>2</sup>	555	2,566	2.7	635.9	635.9	636.0	0.1
I	27,635 <sup>2</sup>	400	1,957	3.6	639.7	639.7	639.8	0.1
J	28,253 <sup>2</sup>	60	851	8.3	641.2	641.2	641.3	0.1
K	31,131 <sup>2</sup>	607	4,437	1.6	644.2	644.2	644.3	0.1
L	33,365 <sup>2</sup>	310	2,229	3.2	644.7	644.7	644.8	0.1
M	34,740 <sup>2</sup>	722	5,091	1.4	645.5	645.5	645.6	0.1
N	37,740 <sup>2</sup>	622	3,285	1.3	646.2	646.2	646.3	0.1
O	43,238 <sup>2</sup>	160	1,013	4.3	650.9	650.9	651.0	0.1
P	49,996 <sup>2</sup>	260	1,944	2.2	656.0	656.0	656.1	0.1

<sup>1</sup> Feet above mouth at Lake Decatur

<sup>2</sup> Feet above confluence with Sangamon River

<sup>3</sup> Elevations without considering backwater effect from Lake Decatur

**TABLE 10**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**MACON COUNTY, IL  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**BIG CREEK ARM OF LAKE DECATUR  
FRIENDS CREEK**

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
Friends Creek - continued								
Q	57,274 <sup>1</sup>	711	2,260	0.9	660.2	660.2	660.3	0.1
R	62,436 <sup>1</sup>	252	944	2.1	666.5	666.5	666.6	0.1
S	67,872 <sup>1</sup>	44	342	5.7	674.1	674.1	674.2	0.1
T	70,142 <sup>1</sup>	373	2,532	0.8	675.4	675.4	675.5	0.1
U	73,442 <sup>1</sup>	107	270	7.3	677.2	677.2	677.2	0.0
Friends Creek Ditch								
A	3,497 <sup>2</sup>	377	1,420	2.1	661.7	661.7	661.7	0.0
B	4,453 <sup>2</sup>	73	547	5.5	662.9	662.9	662.9	0.0
C	15,966 <sup>2</sup>	76	461	6.6	670.0	670.0	670.0	0.0
D	20,586 <sup>2</sup>	480	978	3.1	674.8	674.8	674.9	0.1

<sup>1</sup> Feet above confluence with Sangamon River

<sup>2</sup> Feet above confluence with Friends Creek

**TABLE 10**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**MACON COUNTY, IL  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**FRIENDS CREEK  
FRIENDS CREEK DITCH**

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
Independence Branch								
A	756 <sup>1</sup>	192	431	1.1	668.9	668.9	668.9	0.0
B	2,190 <sup>1</sup>	259	356	1.4	669.5	669.5	669.5	0.0
C	4,386 <sup>1</sup>	32	164	3.0	670.5	670.5	670.5	0.0
D	5,648 <sup>1</sup>	41	157	3.1	671.4	671.4	671.5	0.1
Long Creek								
A	5,600 <sup>2</sup>	142	1,275	6.1	626.9	626.9	627.0	0.1
B	8,150 <sup>2</sup>	300	2,597	4.3	630.1	630.1	630.2	0.1
Long Creek (East of Big Creek)								
A	350 <sup>3</sup>	500	2,466	1.5	630.1	625.7 <sup>4</sup>	625.7	0.0
B	1,900 <sup>3</sup>	304	1,022	3.5	630.1	627.1 <sup>4</sup>	627.2	0.1
C	2,650 <sup>3</sup>	165	920	3.9	630.6	630.6	630.6	0.0
D	3,100 <sup>3</sup>	500	2,737	1.3	631.4	631.4	631.4	0.0
E	3,900 <sup>3</sup>	450	1,630	2.2	631.8	631.8	631.8	0.0
F	6,300 <sup>3</sup>	370	1,365	2.6	635.6	635.6	635.7	0.1
G	7,100 <sup>3</sup>	180	405	8.9	637.7	637.7	637.8	0.1
H	8,050 <sup>3</sup>	250	1,507	2.2	641.1	641.1	641.1	0.0
I	9,700 <sup>3</sup>	360	1,717	2.0	642.4	642.4	642.5	0.1
J	11,450 <sup>3</sup>	200	770	4.4	645.6	645.6	645.6	0.0
K	12,150 <sup>3</sup>	343	1,726	2.0	646.8	646.8	646.8	0.0

<sup>1</sup> Feet above confluence with Spring Creek

<sup>2</sup> Feet above mouth at Big Creek Arm of Lake Decatur

<sup>3</sup> Feet above confluence with Long Creek

<sup>4</sup> Elevations without considering backwater effect from Long Creek

**TABLE 10**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**MACON COUNTY, IL  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**INDEPENDENCE BRANCH  
LONG CREEK  
LONG CREEK (EAST OF BIG CREEK)**

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Long Creek (East of Big Creek) - continued								
L	12,750	125	755	4.5	653.8	653.8	653.8	0.0
M	13,850	320	3,205	1.1	654.8	654.8	654.8	0.0
N	14,790	320	2,342	1.4	654.8	654.8	654.8	0.0
O	16,810	350	1,742	1.9	655.4	655.4	655.5	0.1
P	19,440	450	1,918	1.8	661.1	661.1	661.1	0.0
Q	20,260	450	1,935	1.7	661.5	661.5	661.6	0.1
R	21,460	500	1,825	1.8	662.2	662.2	662.3	0.1
S	23,510	500	1,417	1.9	663.9	663.9	664.0	0.1
T	25,527	600	1,863	1.4	666.2	666.2	666.2	0.0
U	28,067	289	915	3.0	671.4	671.4	671.4	0.0
V	28,737	550	2,309	0.9	671.9	671.9	671.9	0.0
W	29,433	600	1,964	1.1	672.1	672.1	672.2	0.1
X	30,743	600	1,427	1.5	672.7	672.7	672.8	0.1
Y	31,483	550	888	2.5	673.7	673.7	673.8	0.1
Z	32,272	33	255	8.6	676.2	676.2	676.3	0.1
Long Creek Tributary								
A	5,690	88	220	4.49	637.6	637.6	637.6	0.0

<sup>1</sup> Feet above confluence with Long Creek

**TABLE 10**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**MACON COUNTY, IL  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**LONG CREEK (EAST OF BIG CREEK)  
LONG CREEK TRIBUTARY**

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Northeast Drainage Ditch								
A	1,257	126	408	1.8	654.5	654.5	654.5	0.0
B	2,053	66	334	2.2	654.6	654.6	654.7	0.1
C	2,797	76	355	2.0	655.3	655.3	655.4	0.1
D	3,650	46	201	3.6	655.7	655.7	655.7	0.0
E	4,975	50	230	3.1	656.9	656.9	657.0	0.1

<sup>1</sup> Feet above confluence with Spring Creek

**TABLE 10**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**MACON COUNTY, IL  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**NORTHEAST DRAINAGE DITCH**

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Sangamon River								
A	1,600	6,100	13,370	2.2	574.2	574.2	574.3	0.1
B	4,451	5,064/4,650 <sup>3</sup>	17,754	1.7	576.5	576.5	576.6	0.1
C	8,040	3,512/3,280 <sup>3</sup>	18,729	1.6	578.2	578.2	578.3	0.1
D	9,465	4,339/4,250 <sup>3</sup>	22,530	1.3	578.8	578.8	578.9	0.1
E	12,365	4,690/4,600 <sup>3</sup>	23,409	1.3	579.6	579.6	579.7	0.1
F	18,887	449/390 <sup>2,3</sup>	6,732	4.4	584.6	584.6	584.6	0.0
G	21,241	2,673/2,275 <sup>3</sup>	21,426	1.4	586.4	586.4	586.4	0.0
H	24,521	3,628	23,527	1.3	587.0	587.0	587.0	0.0
I	28,819	4,849	24,460	1.2	587.8	587.8	587.8	0.0
J	33,889	430 <sup>2</sup>	7,782	3.8	591.5	591.5	591.5	0.0
K	39,199	1,300	13,471	2.2	592.6	592.6	592.7	0.1
L	44,153	2,125	18,007	1.7	594.1	594.1	594.2	0.1
M	48,961	2,330	18,425	1.6	596.0	596.0	596.1	0.1
N	53,771	1,617	16,060	1.9	597.1	597.1	597.2	0.1
O	59,221	1,719	19,454	1.5	598.0	598.0	598.0	0.0
P	63,911	2,878	29,912	1.0	598.8	598.8	598.8	0.0
Q	70,309	692	8,301	3.6	600.4	600.4	600.4	0.0
R	71,809	700	8,805	3.4	600.8	600.8	600.9	0.1
S	73,899	1,173	14,888	2.0	601.6	601.6	601.7	0.1
T	76,149	2,185	26,196	1.1	602.0	602.0	602.1	0.1
U	80,371	2,031	21,862	1.4	602.4	602.4	602.5	0.1
V	82,851	1,349	16,130	1.8	602.8	602.8	602.9	0.1
W	88,711	2,674	23,530	1.2	603.6	603.6	603.7	0.1

<sup>1</sup>Feet above county boundary

<sup>2</sup>Floodway width reflects constricted section, see FIRM panel for regulatory floodway

<sup>3</sup>Total width / width within Macon County

**TABLE  
10**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**MACON COUNTY, IL  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**SANGAMON RIVER**

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Sangamon River - continued								
X	92,511	2,279	18,144	1.5	604.2	604.2	604.3	0.1
Y	94,911	1,644	14,093	2.0	604.9	604.9	605.0	0.1
Z	96,276	454 <sup>2</sup>	5,379	5.2	605.6	605.6	605.7	0.1
AA	96,691	367 <sup>2</sup>	4,622	6.0	605.9	605.9	606.0	0.1
AB	98,060	2,061	25,018	1.1	608.2	608.2	608.3	0.1
AC	100,172	2,512	30,747	0.9	608.4	608.4	608.5	0.1
AD	101,598	2,178	27,111	1.0	608.5	608.5	608.6	0.1
AE	102,443	1,715	15,478	1.8	608.5	608.5	608.6	0.1
AF	102,601	1,577	8,034	3.5	608.5	608.5	608.6	0.1
AG	103,023	1,204 <sup>2</sup>	14,788	1.9	608.8	608.8	608.9	0.1
AH	103,235	386	7,018	4.0	608.9	608.9	609.0	0.1
AI	104,132	*	*	*	*	*	*	*
AJ	104,238	*	*	*	*	*	*	*
AK	104,555	1,698	30,382	0.9	618.3	618.3	618.4	0.1
AL	108,145	2,428	43,542	0.6	618.4	618.4	618.5	0.1
AM	118,652	2,075	33,322	0.7	618.5	618.5	618.6	0.1
AN	125,516	2,031	28,053	0.8	618.7	618.7	618.8	0.1
AO	133,436	382	4,919	4.7	618.8	618.8	618.9	0.1
AP	138,663	2,059	21,646	1.1	619.8	619.8	619.9	0.1
AQ	147,217	1,484	13,502	1.7	620.4	620.4	620.5	0.1
AR	152,919	1,756	19,236	1.2	620.8	620.8	620.9	0.1
AS	156,087	1,638	15,397	1.5	621.0	621.0	621.1	0.1
AT	163,427	1,088 <sup>2</sup>	5,799	4.0	621.4	621.4	621.5	0.1

<sup>1</sup> Feet above county boundary

<sup>2</sup> Floodway width reflects constricted section, see FIRM panel for regulatory floodway

\* Data not available

**TABLE 10**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**MACON COUNTY, IL  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**SANGAMON 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
Sangamon River - continued								
AU	170,900 <sup>1</sup>	1,687	13,589	1.4	621.1	621.1	621.2	0.1
AV	174,632 <sup>1</sup>	1,310 <sup>2</sup>	4,126	4.6	622.1	622.1	622.2	0.1
AW	177,132 <sup>1</sup>	2,150	21,061	0.9	622.8	622.8	622.9	0.1
AX	179,932 <sup>1</sup>	1,824	10,875	1.7	622.9	622.9	623.0	0.1
AY	182,732 <sup>1</sup>	1,614	10,371	1.8	623.5	623.5	623.6	0.1
AZ	186,232 <sup>1</sup>	1,200	7,542	2.5	624.4	624.4	624.5	0.1
BA	193,632 <sup>1</sup>	1,467	7,848	2.1	626.6	626.6	626.7	0.1
BB	195,332 <sup>1</sup>	1,297	7,723	2.1	627.1	627.1	627.2	0.1
BC	199,332 <sup>1</sup>	1,498	10,255	1.6	628.1	628.1	628.2	0.1
Spring Creek								
A	699 <sup>2</sup>	360	4,016	1.0	622.0	622.0	622.1	0.1
B	5,324 <sup>2</sup>	244	1,069	3.9	623.0	623.0	623.1	0.1
C	6,493 <sup>2</sup>	386	2,462	1.7	627.6	627.6	627.6	0.0
D	7,443 <sup>2</sup>	508	3,361	1.2	628.1	628.1	628.1	0.0
E	8,949 <sup>2</sup>	511	2,484	1.7	628.8	628.8	628.8	0.0
F	10,134 <sup>2</sup>	300	1,996	2.1	632.1	632.1	632.2	0.1
G	11,307 <sup>2</sup>	387	2,123	1.6	632.7	632.7	632.8	0.1
H	12,520 <sup>2</sup>	138	832	3.8	633.9	633.9	633.9	0.0
I	13,634 <sup>2</sup>	176	849	3.8	634.5	634.5	634.6	0.1
J	14,799 <sup>2</sup>	149	693	4.6	636.3	636.3	636.4	0.1

<sup>1</sup> Feet above county boundary

<sup>2</sup> Feet above confluence with Stevens Creek

**TABLE  
10**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**MACON COUNTY, IL  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**SANGAMON RIVER  
SPRING CREEK**

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Spring Creek - continued								
K	15,407	66	465	6.9	637.0	637.0	637.0	0.0
L	16,327	76	528	6.1	639.0	639.0	639.0	0.0
M	17,705	510	1,838	1.7	642.6	642.6	642.6	0.0
N	19,383	475	2,315	1.4	645.6	645.6	645.6	0.0
O	21,391	296	1,818	1.8	647.8	647.8	647.8	0.0
P	22,464	399	2,084	1.5	648.3	648.3	648.4	0.1
Q	23,673	292	1,430	2.2	649.4	649.4	649.4	0.0
R	25,066	298	1,073	3.0	650.3	650.3	650.4	0.1
S	26,639	253	1,356	2.4	652.9	652.9	652.9	0.0
T	27,861	306	1,209	2.3	653.7	653.7	653.8	0.1
U	29,765	357	1,331	1.7	656.0	656.0	656.0	0.0
V	31,748	295	931	2.4	658.2	658.2	658.2	0.0
W	33,191	302	1,060	2.1	660.2	660.2	660.2	0.0
X	36,413	245	789	2.4	662.9	662.9	663.0	0.1
Y	37,588 <sup>1</sup>	390	1,294	1.5	665.2	665.2	665.2	0.0
Z	39,218 <sup>1</sup>	245	1,023	1.8	666.4	666.4	666.4	0.0
AA	41,977 <sup>1</sup>	415	870	2.2	667.5	667.5	667.5	0.0
AB	44,838 <sup>1</sup>	180	392	2.1	669.1	669.1	669.1	0.0
AC	45,915 <sup>1</sup>	193	371	2.2	669.9	669.9	669.9	0.0
AD	49,096 <sup>1</sup>	226	421	2.0	674.3	674.3	674.3	0.0
AE	50,654 <sup>1</sup>	229	485	1.7	675.8	675.8	675.9	0.1
AF	53,761 <sup>1</sup>	219	294	2.8	677.9	677.9	677.9	0.0

<sup>1</sup> Feet above confluence with Stevens Creek

**TABLE 10**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**MACON COUNTY, IL  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**SPRING CREEK**

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
Spring Creek Tributary								
A	1,413 <sup>1</sup>	41	186	3.9	655.3	655.3	655.3	0.0
B	1,727 <sup>1</sup>	98	266	2.9	656.4	656.4	656.4	0.0
C	2,658 <sup>1</sup>	50	163	2.0	658.3	658.3	658.3	0.0
D	3,686 <sup>1</sup>	14	43	7.5	661.6	661.6	661.7	0.1
E	4,294 <sup>1</sup>	33	102	3.2	664.7	664.7	664.7	0.0
Spring Creek Tributary East								
A	226 <sup>2</sup>	34	166	2.7	658.4	658.4	658.5	0.1
B	873 <sup>2</sup>	27	113	3.9	660.3	660.3	660.3	0.0
C	2,307 <sup>2</sup>	45	135	3.3	663.3	663.3	663.4	0.1

<sup>1</sup> Feet above confluence with Spring Creek

<sup>2</sup> Feet above confluence with Spring Creek Tributary

**TABLE 10**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**MACON COUNTY, IL  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**SPRING CREEK TRIBUTARY  
SPRING CREEK TRIBUTARY EAST**

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Stevens Creek								
A	2,093	853	8,102	2.7	605.4	605.4	605.4	0.0
B	3,462	820	8,955	1.4	606.2	606.2	606.3	0.1
C	5,553	860	9,035	2.8	608.5	608.5	608.6	0.1
D	6,299	580	6,717	1.9	608.8	608.8	608.9	0.1
E	8,990	1,230	10,034	1.7	610.7	610.7	610.8	0.1
F	9,696	440	5,425	3.0	614.3	614.3	614.3	0.0
G	11,159	760	11,293	1.1	615.3	615.3	615.4	0.1
H	13,844	1,140	14,162	0.9	615.7	615.7	615.7	0.0
I	18,154	1,580	16,129	0.8	615.9	615.9	615.9	0.0
J	19,981	465	5,536	2.4	617.8	617.8	617.8	0.0
K	21,908	670	6,867	1.9	619.0	619.0	619.0	0.0
L	23,850	517	5,629	2.3	620.1	620.1	620.2	0.1
M	25,871	530	4,921	2.6	620.7	620.7	620.8	0.1
N	27,108	524	5,690	1.5	621.7	621.7	621.7	0.0
O	28,973	975	8,238	1.1	622.3	622.3	622.3	0.0
P	30,961	359	4,441	2.0	627.2	627.2	627.3	0.1
Q	32,309	346	3,639	2.4	627.5	627.5	627.5	0.0
R	34,009	483	5,432	1.6	628.6	628.6	628.6	0.0
S	36,567	858	6,720	1.3	629.6	629.6	629.6	0.0
T	38,644	648	4,965	1.8	630.6	630.6	630.7	0.1
U	39,735	469	4,095	2.1	633.5	633.5	633.5	0.0
V	42,486	823	5,070	1.7	634.5	634.5	634.5	0.0
W	44,671	548	4,203	2.1	638.1	638.1	638.1	0.0

<sup>1</sup> Feet above confluence with Sangamon River

**TABLE 10**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**MACON COUNTY, IL  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**STEVENS CREEK**

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Stevens Creek - continued								
X	47,231	530	4,130	2.0	641.7	641.7	641.8	0.1
Y	48,998	978	4,925	1.7	642.5	642.5	642.6	0.1
Z	50,917	495	3,106	2.7	644.5	644.5	644.5	0.0
AA	51,891	612	2,447	4.1	645.5	645.5	645.6	0.1
AB	53,684	381	2,523	3.3	647.5	647.5	647.5	0.0
AC	55,131	808	4,163	2.0	648.8	648.8	648.8	0.0
AD	57,185	326	2,332	3.5	651.7	651.7	651.7	0.0
AE	59,185	795	4,299	1.9	653.0	653.0	653.0	0.0
AF	60,662	431	2,522	3.3	654.3	654.3	654.3	0.0
AG	62,670	268	2,294	3.6	657.3	657.3	657.4	0.1
AH	65,170	732	5,549	1.5	658.4	658.4	658.4	0.0
AI	67,336	1,464	7,786	1.1	659.0	659.0	659.0	0.0
AJ	68,951	786	5,062	1.1	660.4	660.4	660.5	0.1
AK	72,247	552	2,705	2.0	661.3	661.3	661.3	0.0
AL	75,808	455	2,311	2.4	663.5	663.5	663.5	0.0
AM	79,394	363	2,056	2.0	667.1	667.1	667.1	0.0
AN	83,421	450	2,255	1.8	669.4	669.4	669.4	0.0
AO	86,802	664	2,597	1.1	671.7	671.7	671.7	0.0
AP	91,405	278	1,092	2.6	673.9	673.9	673.9	0.0
AQ	94,881	385	1,866	1.5	678.1	678.1	678.1	0.0
AR	96,769	510	1,957	0.6	680.5	680.5	680.5	0.0
AS	99,217	280	592	2.0	681.0	681.0	681.1	0.1
AT	101,565	465	818	1.5	684.1	684.1	684.1	0.0
AU	102,955	385	857	1.4	686.8	686.8	686.8	0.0

<sup>1</sup> Feet above confluence with Sangamon River

**TABLE 10**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**MACON COUNTY, IL  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**STEVENS CREEK**

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Stevens Creek Tributary A								
A	2,040	249	1,167	1.7	620.7	620.7	620.7	0.0
B	3,381	298	843	2.3	622.4	622.4	622.5	0.1
C	5,754	190	531	3.6	629.2	629.2	629.3	0.1
D	7,259	180	1,095	1.8	637.6	637.6	637.6	0.0
Stevens Creek Tributary B								
A	2,490	134	112	2.3	635.0	635.0	635.0	0.0
B	4,336	31	72	3.6	646.0	646.0	646.0	0.0
C	7,460	28	83	3.1	659.1	659.1	659.1	0.0
Stevens Creek Tributary F								
A	1,001	381	2,016	0.8	660.0	660.0	660.1	0.1
B	2,265	490	1,712	1.0	660.2	660.2	660.3	0.1
C	3,703	552	1,435	1.1	660.5	660.5	660.6	0.1
D	5,145	379	651	2.5	662.0	662.0	662.0	0.0
Stevens Creek Tributary G								
A	1,570	183	731	2.7	680.7	680.7	680.7	0.0
B	2,246	217	926	2.1	681.6	681.6	681.6	0.0
C	3,925	310	1,001	2.0	682.9	682.9	682.9	0.0

<sup>1</sup> Feet above confluence with Stevens Creek

**TABLE 10**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**MACON COUNTY, IL  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**STEVENS CREEK TRIBUTARY A  
STEVENS CREEK TRIBUTARY B  
STEVENS CREEK TRIBUTARY F  
STEVENS CREEK TRIBUTARY G**

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 2								
A	630 <sup>1</sup>	407	2,269	0.7	618.5	616.0 <sup>3</sup>	616.1	0.1
B	1,320 <sup>1</sup>	414	1,465	1.0	618.5	616.1 <sup>3</sup>	616.2	0.1
C	2,760 <sup>1</sup>	189	834	1.8	623.3	623.3	623.4	0.1
D	3,710 <sup>1</sup>	165	512	3.0	624.6	624.6	624.7	0.1
Ward Branch								
A	6,456 <sup>2</sup>	335	1,116	2.2	613.9	613.9	613.9	0.0
B	9,611 <sup>2</sup>	289	1,538	1.6	623.4	623.4	623.4	0.0
C	15,654 <sup>2</sup>	232	417	3.4	643.0	643.0	643.0	0.0
D	21,682 <sup>2</sup>	82	343	2.4	671.5	671.5	671.6	0.1
E	24,520 <sup>2</sup>	178	422	1.9	680.6	680.6	680.6	0.0
F	26,666 <sup>2</sup>	20	106	7.7	685.6	685.6	685.6	0.0

<sup>1</sup> Feet above mouth at Lake Decatur

<sup>2</sup> Feet above confluence with Sangamon River

<sup>3</sup> Elevations without considering backwater effect from Lake Decatur

**TABLE  
10**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**MACON COUNTY, IL  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**TRIBUTARY 2  
WARD BRANCH**

## 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 Zone A methods. Because Zone AE hydraulic analyses are not performed for such areas, no BFEs or depths are shown within this zone.

### Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS by Zone AE methods. In most instances, whole-foot BFEs derived from the Zone AE 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 BFEs derived from the Zone AE 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 Zone AE 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 BFEs or depths are shown within this zone.

## **6.0 FLOOD INSURANCE RATE MAP**

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

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

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

The current FIRM presents flooding information for the entire geographic area of Macon County. Previously, separate FHBMs and/or FIRMs were prepared for each incorporated community and the unincorporated areas of the county identified as having SFHAs. 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**

FISs have been prepared for Christian, DeWitt, Logan, Moultrie, Piatt, and Sangamon Counties, Illinois (Reference 36).

Information pertaining to revised and unrevised flood hazards for each jurisdiction, or the portions of each jurisdiction, within Macon 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 Macon 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)
Argenta, Village of	January 12, 1979	None	N/A	
Blue Mound, Village of	November 3, 1978	None	July 18, 1985	
Decatur, City of	May 24, 1974	September 12, 1975 October 1, 1976	August 1, 1979	
Forsyth, Village of	December 4, 1984 <sup>3</sup>	None	December 4, 1984 <sup>3</sup>	January 6, 1988
Harristown, Village of <sup>1,2</sup>	N/A	N/A	N/A	
Long Creek, Village of	September 8, 1978 <sup>3</sup>	None	December 4, 1984 <sup>3</sup>	August 4, 1987
Macon, City of <sup>1,2</sup>	N/A	N/A	N/A	
Macon County (Unincorporated Areas)	September 8, 1978	None	December 4, 1984	
Maroa, City of <sup>2</sup>	N/A	N/A	N/A	
Mount Zion, Village of	March 2, 1979	None	September 18, 1985	

<sup>1</sup> No Special Flood Hazard Areas identified

<sup>2</sup> This community does not have map history prior to the first countywide mapping

<sup>3</sup> Date for this community taken from the Unincorporated Areas of Macon County

N/A - Not Applicable

**TABLE 11**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**MACON 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)
Niantic, Village of <sup>1,2</sup>	N/A	N/A	N/A	
Oreana, Village of <sup>1,2</sup>	N/A	N/A	N/A	
Warrensburg, Village of <sup>1,2</sup>	N/A	N/A	N/A	

<sup>1</sup> No Special Flood Hazard Areas identified

<sup>2</sup> This community does not have map history prior to the first countywide mapping

<sup>3</sup> Date for this community taken from the Unincorporated Areas of Macon County

N/A - Not Applicable

**TABLE 11**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**MACON COUNTY, IL  
AND INCORPORATED AREAS**

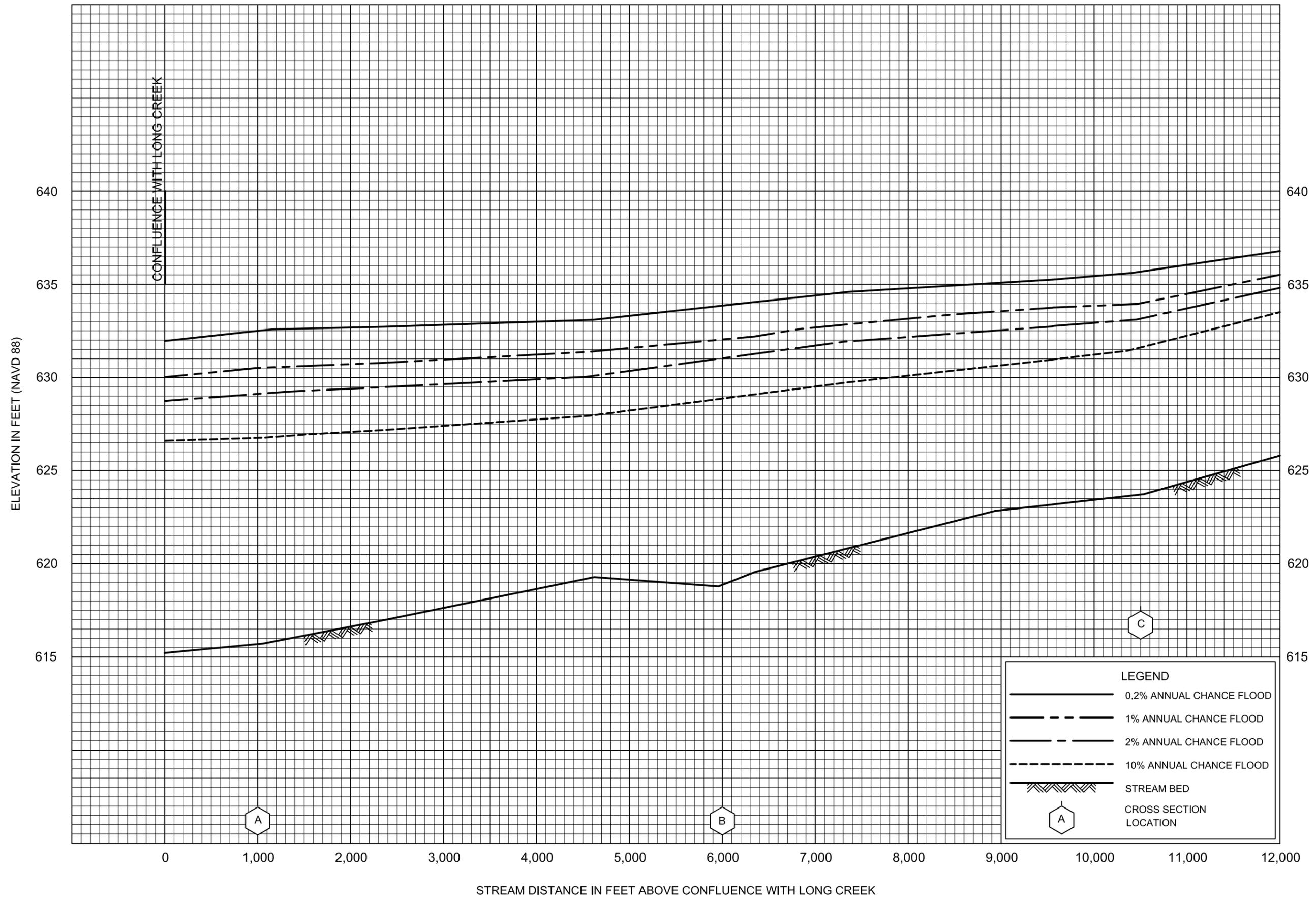
**COMMUNITY MAP HISTORY**

## 9.0 BIBLIOGRAPHY AND REFERENCES

1. Federal Emergency Management Agency. *Flood Insurance Study: City of Decatur, Illinois, Macon County*. Washington, D.C.: February 1979.
2. Federal Emergency Management Agency. *Flood Insurance Study: Village of Forsyth, Illinois, Macon County*. Washington, D.C.: January 6, 1988.
3. Federal Emergency Management Agency. *Flood Insurance Study: Macon County, Illinois, Unincorporated Areas*. Washington, D.C.: June 4, 1984.
4. Federal Emergency Management Agency. *Flood Insurance Study: Village of Long Creek, Illinois, Macon County*. Washington, D.C.: August 4, 1987.
5. Guillou and Uecker, Inc. *Flood Study of Stevens and Spring Creeks, City of Decatur, Macon County, Illinois*. May 1982.
6. Pictometry. *Photogrammetry, Macon County and City of Decatur, Illinois*. Resolution: 1 foot. 2008.
7. Illinois State Water Survey. *Hydrologic and Hydraulic Modeling for Stevens Creek Watershed, Macon County, Illinois*. Champaign, IL: March 2014.
8. Doll, J.C. *Soil Survey of Macon County, Illinois*. United States Department of Agriculture, Soil Conservation Service, in cooperation with the Illinois Agricultural Experiment Station. 1990. <http://soildatamart.nrcs.usda.gov/manuscripts/IL115/0/macon.pdf>
9. U.S. Census Bureau. *State & County Quick Facts*. Available from: <http://quickfacts.census.gov/qfd/index.html>.
10. Illinois Department of Natural Resources. *Illinois Land Cover Summary Data by Counties*. 2007. <http://dnr.state.il.us/orep/ctap/map/counties.htm>
11. Illinois Department of Natural Resources, Office of Water Resources. *Forsyth, Illinois Community Assistance Visit Narrative Report*. February 10, 2006.
12. Illinois Department of Natural Resources, Office of Water Resources. *Macon County Community Report*. 2002.
13. Illinois State Water Survey. *Historical Climate Data, Rockford, Illinois - Illinois State Climatologist Office*. Available from: <http://www.isws.illinois.edu/atmos/statecli/Summary/117382.htm>.

14. Changnon, Stanley A. and Alan Black. *2008: A Record Wet and Stormy Year in Illinois*. Illinois State Water Survey. Champaign, Illinois: May 2009.
15. Chow, V.T. *Open-Channel Hydraulics*. 1959.
16. State of Illinois, Department of Transportation. *Magnitude and Frequency of Floods in Illinois*. Jack M. Carns. 1973.
17. U. S. Department of the Interior, Geological Survey. *Addendum to Magnitude and Frequency of Floods in Illinois*. 1975.
18. U.S. Geological Survey. *Technique for Estimating Magnitude and Frequency of Floods in Illinois*. G.W. Curtis. 1977.
19. U.S. Department of Agriculture, Soil Conservation Service. *Urban Hydrology for Small Watersheds*. Technical Release No. 55. 1975.
20. U.S. Army Corps of Engineers, Hydrologic Engineering Center. *Hydrologic Modeling System HEC-HMS: Version 3.5.0*. Davis, CA: August 2010.
21. U.S. Geological Survey. *7.5 Minute Series Topographic Maps*. Scale: 1:24000, Contour Interval: 10 feet. Argenta, Illinois, 1967, Photorevised 1975; Decatur, Illinois, 1967, Photorevised 1975; Forsyth, Illinois, 1967, Photorevised 1975; Long Creek, Illinois, 1967, Photorevised 1975.
22. U.S. Geological Survey. *15 Minute Series Topographic Maps*. Scale: 1:62500, Contour interval: 10 feet. Dalton City, Illinois, 1949; Maroa, Illinois, 1957; Niantic, Illinois, 1954.
23. U.S. Army Corps of Engineers, Chicago District. *Topographic Maps*. Oakley Lake and Channel Improvements, Sangamon River, Illinois. 1971.
24. U.S. Army Corps of Engineers, Chicago District. *HEC-2 Water-Surface Profiles, User's Manual*. Davis, CA: November 1976.
25. U.S. Army Corps of Engineers, Chicago District. *Flood Plain Information, Macon County, Illinois*. February 1971.
26. U.S. Army Corps of Engineers, Hydrologic Engineering Center. *HEC-2 Water-Surface Profiles, Generalized Computer Program*. Davis, CA: October 1973.
27. U.S. Army Corps of Engineers, Chicago District. *HEC-2 Input Print-out, Sangamon River Re-Survey*. 1972.

28. U.S. Army Corps of Engineers, Chicago District. *HEC-2 Input Print-out, Lake Decatur Flood Plain Study*. August 1971.
29. U.S. Army Corps of Engineers, Hydrologic Engineering Center. *HEC-GeoRAS GIS Tools for Support of HEC-RAS using ArcGIS: Version 10.1*. Davis, CA: February 2013.
30. U.S. Army Corps of Engineers, Hydrologic Engineering Center. *HEC-RAS River Analysis System: Version 4.1.0*. Davis, CA: January 2010.
31. Surdex Corporation for U.S. Army Corps of Engineers, St. Louis District. *Macon County, Illinois LiDAR*. [Flight date: 2010]. LiDAR-derived Digital Elevation Model (DEM) developed by Illinois State Water Survey. Contour interval support: 2 feet. 2011.
32. Illinois State Geological Survey. *Statewide ArcSDE Raster Mosaic of USGS DRGs*. Champaign, IL: 2003.
33. U.S. Geological Survey (USGS) EROS Data Center. *National Elevation Dataset*. Sioux Falls, SD: 1999.
34. Illinois State Geological Survey, Illinois Height Modernization Program. *Macon County, Illinois LiDAR-Derived Digital Terrain Model (DTM) [2012-2013]*. LiDAR data acquired by AeroMetric, Inc. for the Illinois Department of Transportation. Contour interval support: 2 feet. Flight date: March-April 2011.
35. Illinois Compiled Statutes. *Waterways Rivers, Lakes and Streams Act, 615 ILCS 5/23, 5/29 & 5/30; 615 ILCS 5/18*. 2005.
36. Federal Emergency Management Agency. *Flood Map Service Center*. Available from: <https://msc.fema.gov/portal/advanceSearch>.

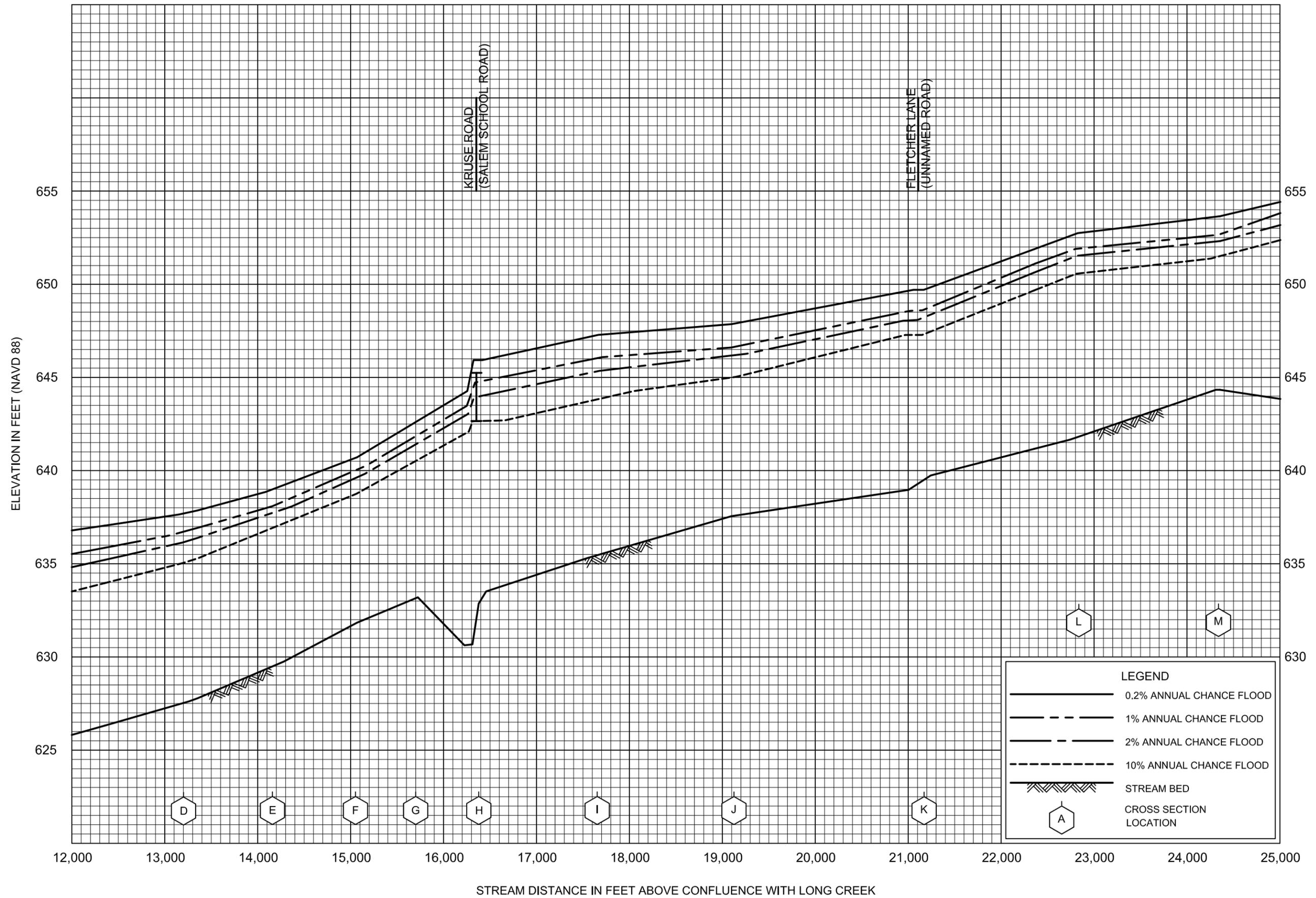


FLOOD PROFILES

BIG CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

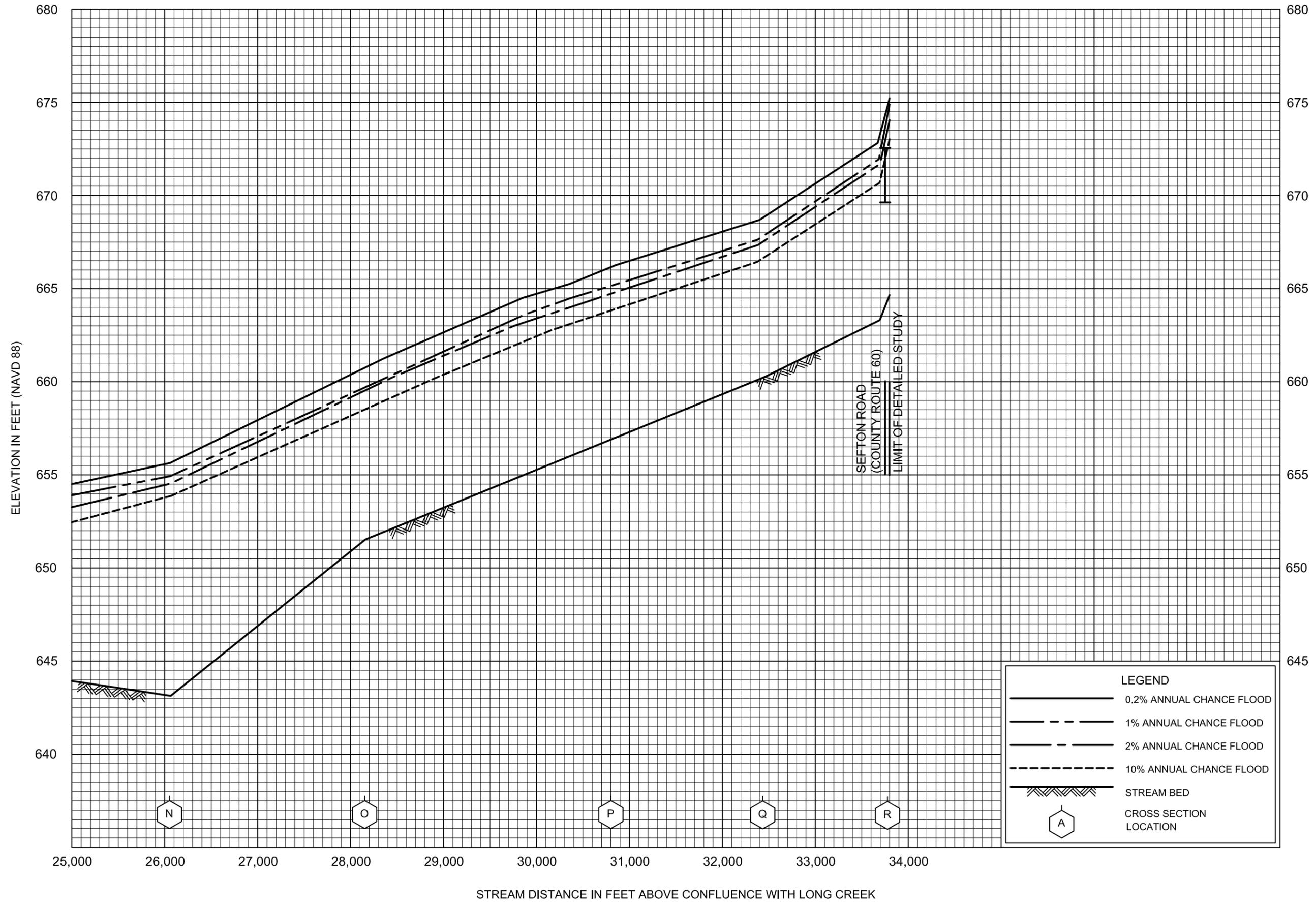


FLOOD PROFILES

BIG CREEK

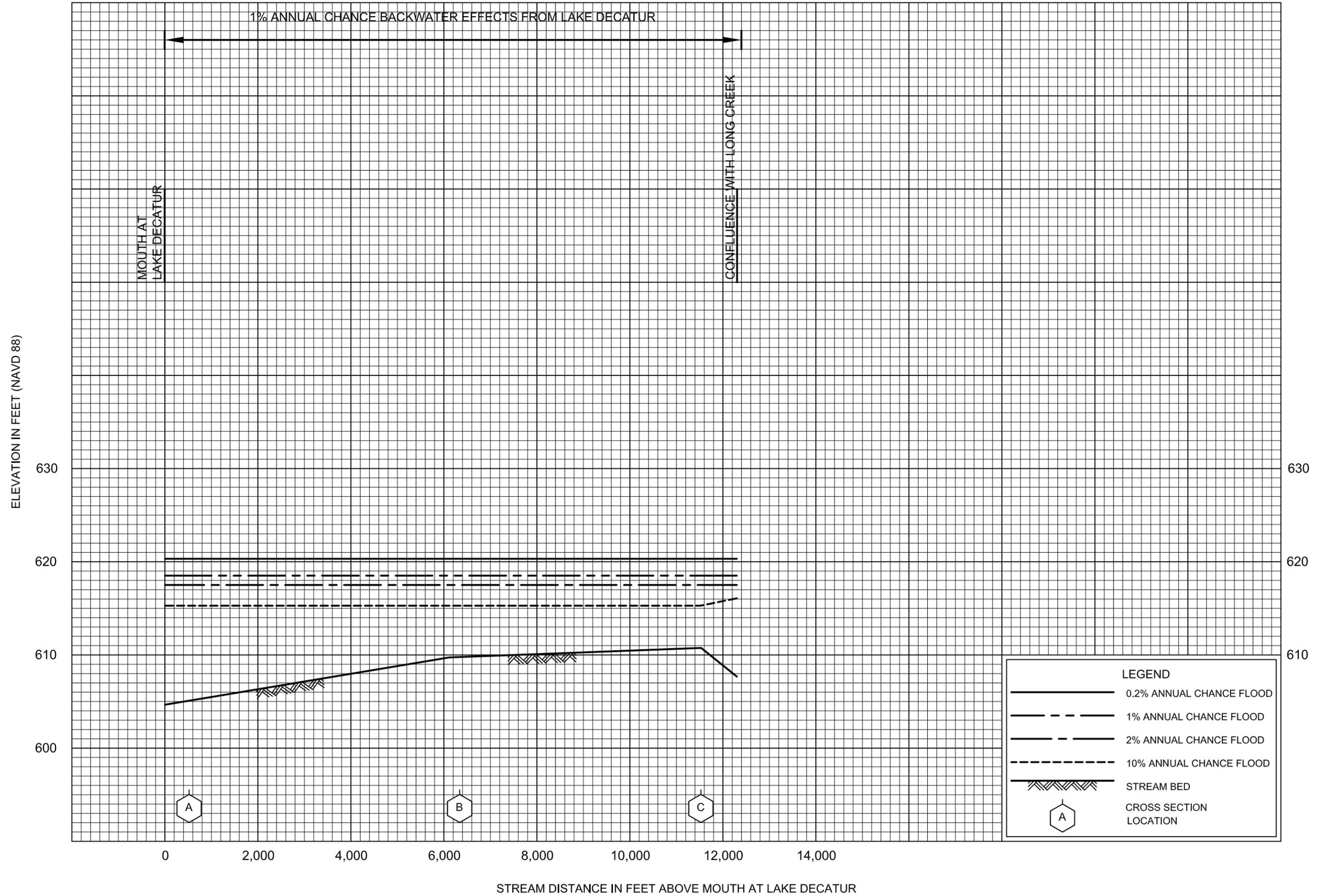
FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS



**FLOOD PROFILES**  
**BIG CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**MACON COUNTY, IL**  
AND INCORPORATED AREAS

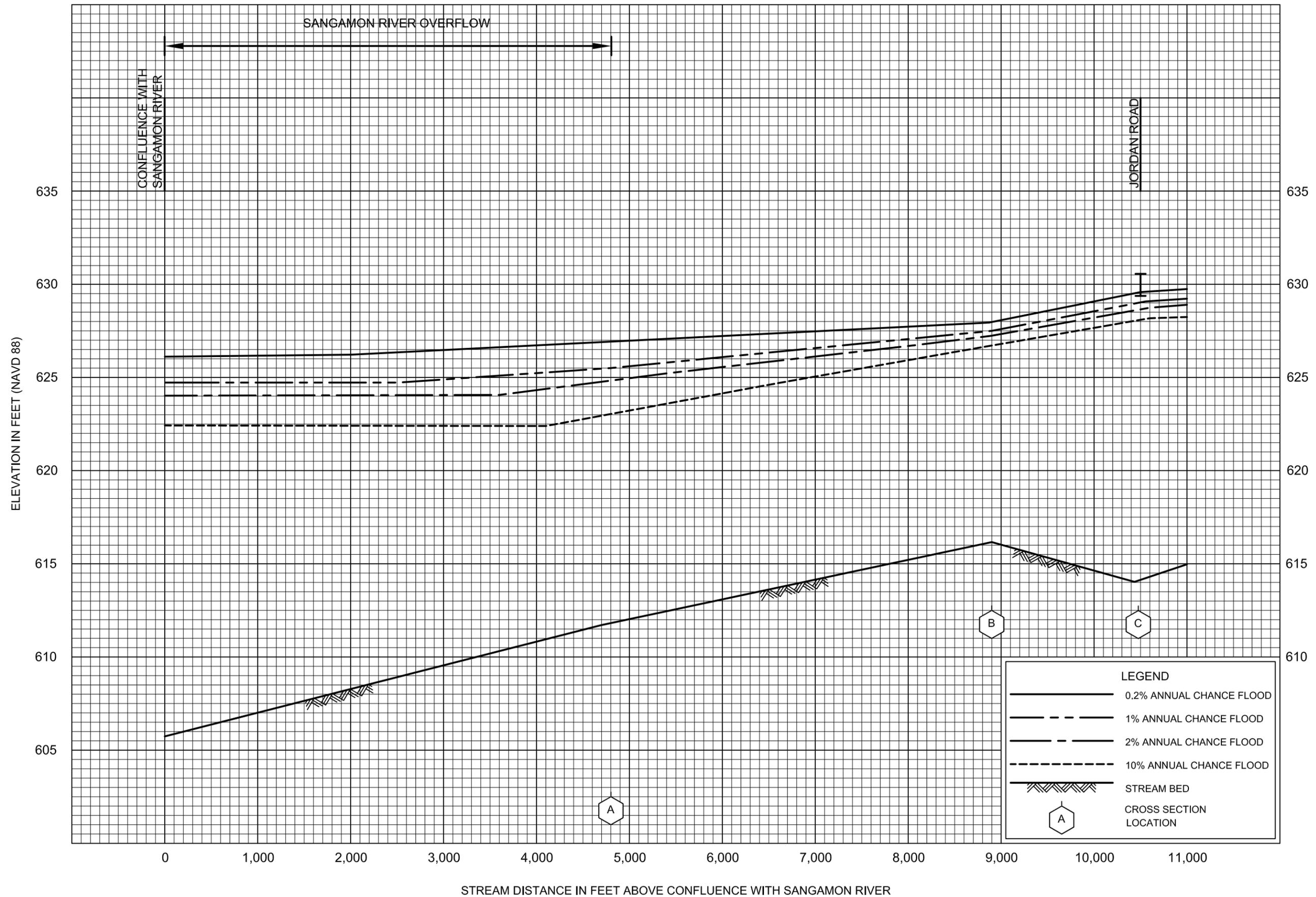


FLOOD PROFILES

BIG CREEK ARM OF LAKE DECATUR

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MACON COUNTY, IL  
AND INCORPORATED AREAS

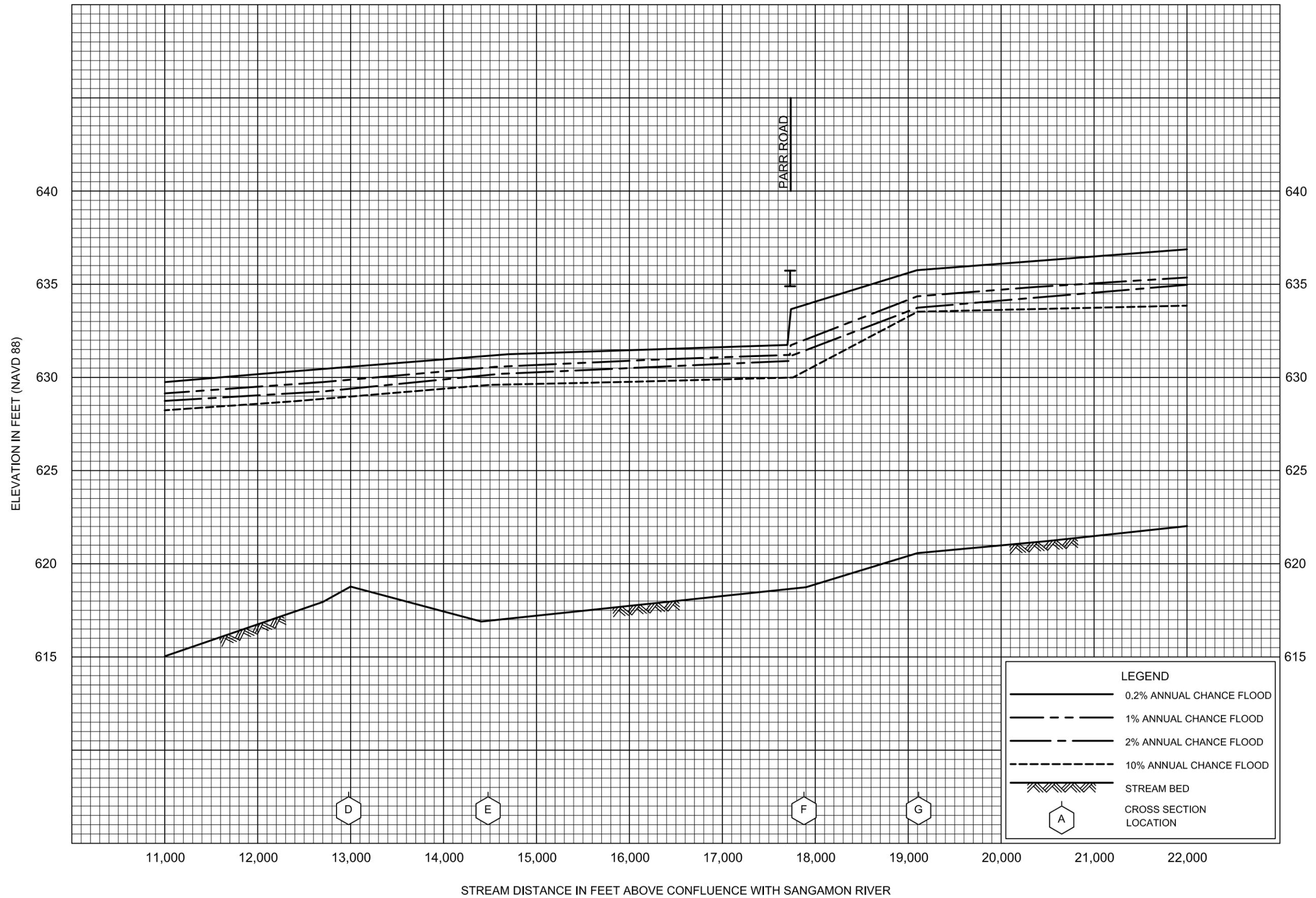


FLOOD PROFILES

FRIENDS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

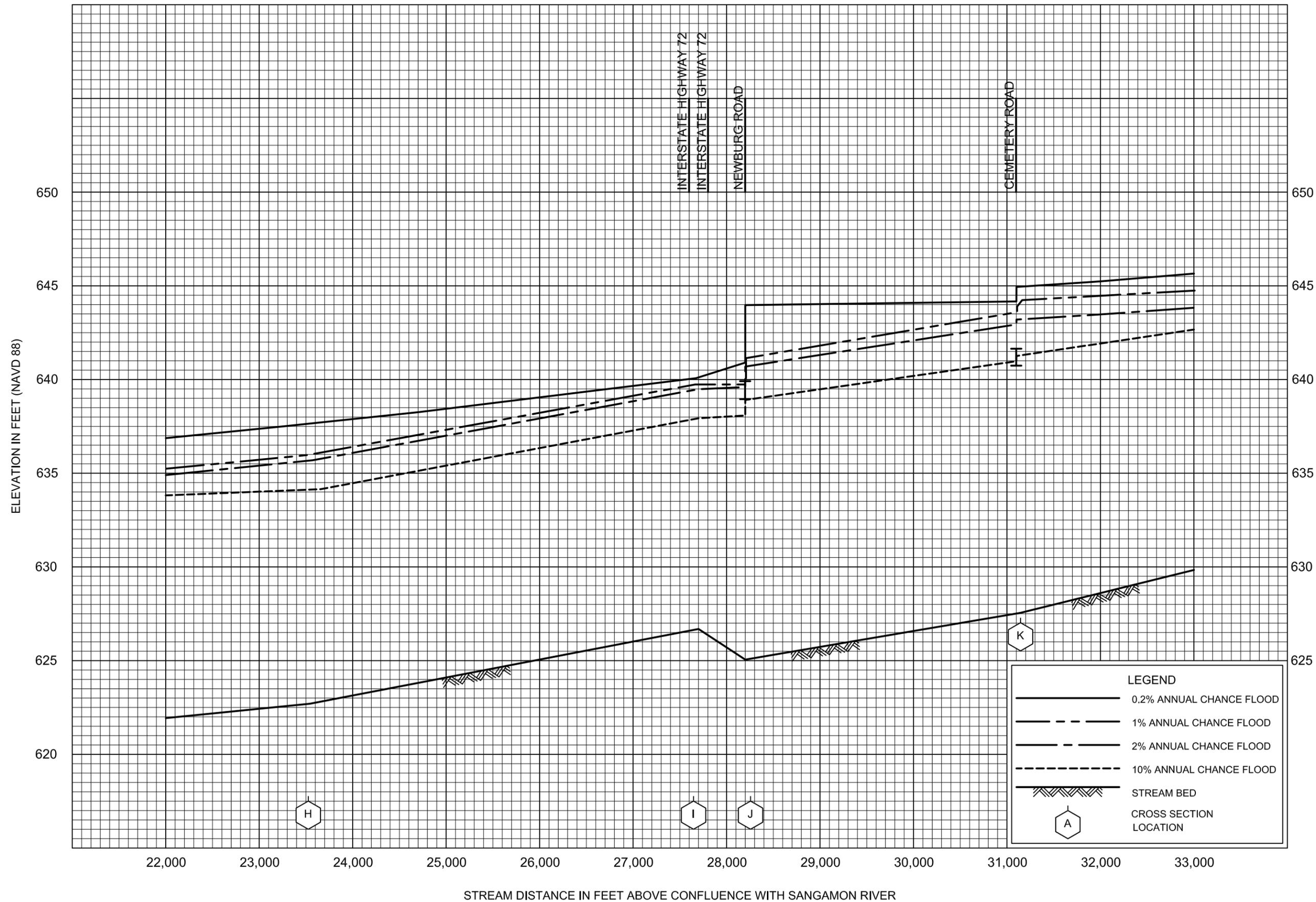


FLOOD PROFILES

FRIENDS CREEK

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MACON COUNTY, IL  
AND INCORPORATED AREAS

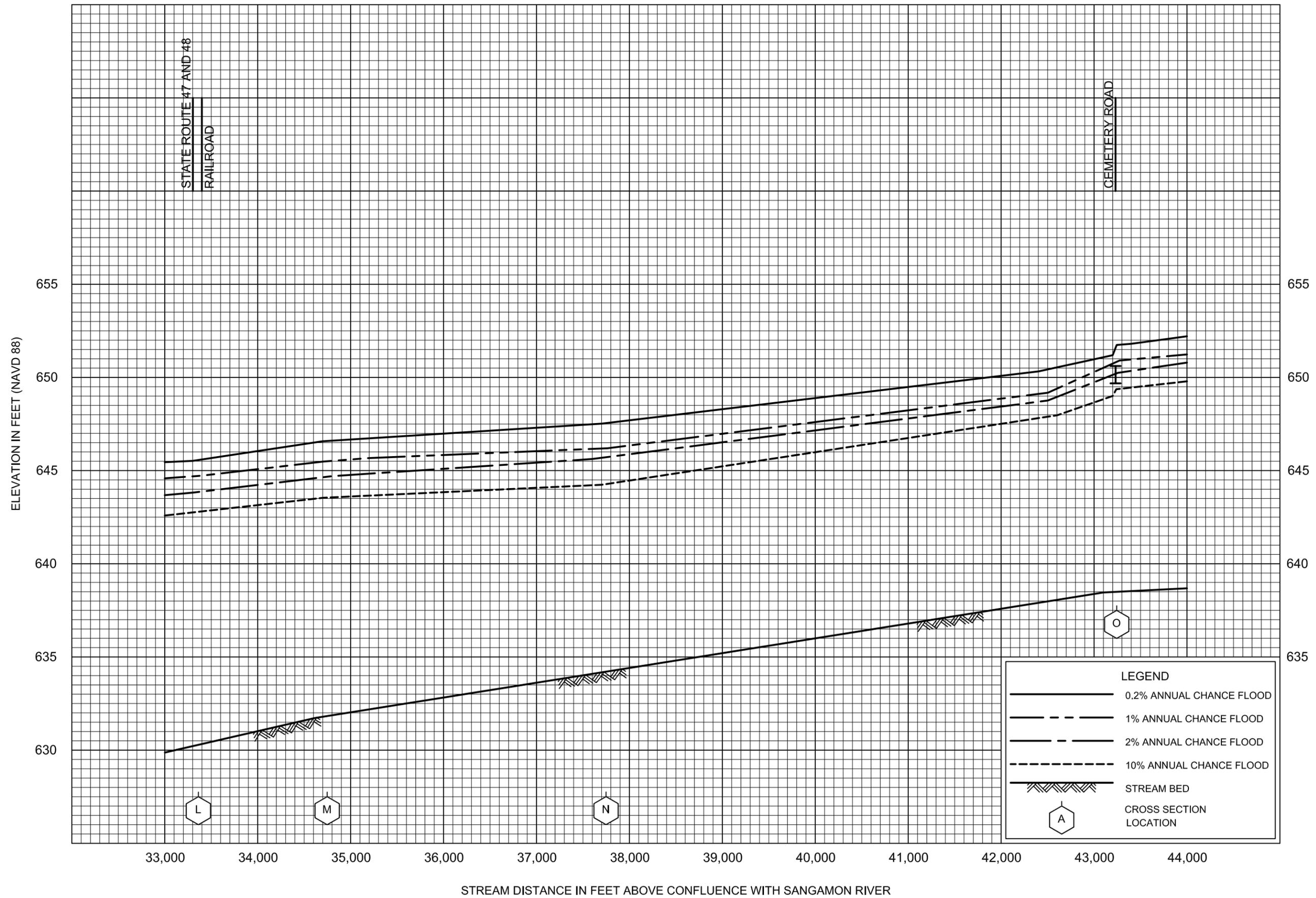


FLOOD PROFILES

FRIENDS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

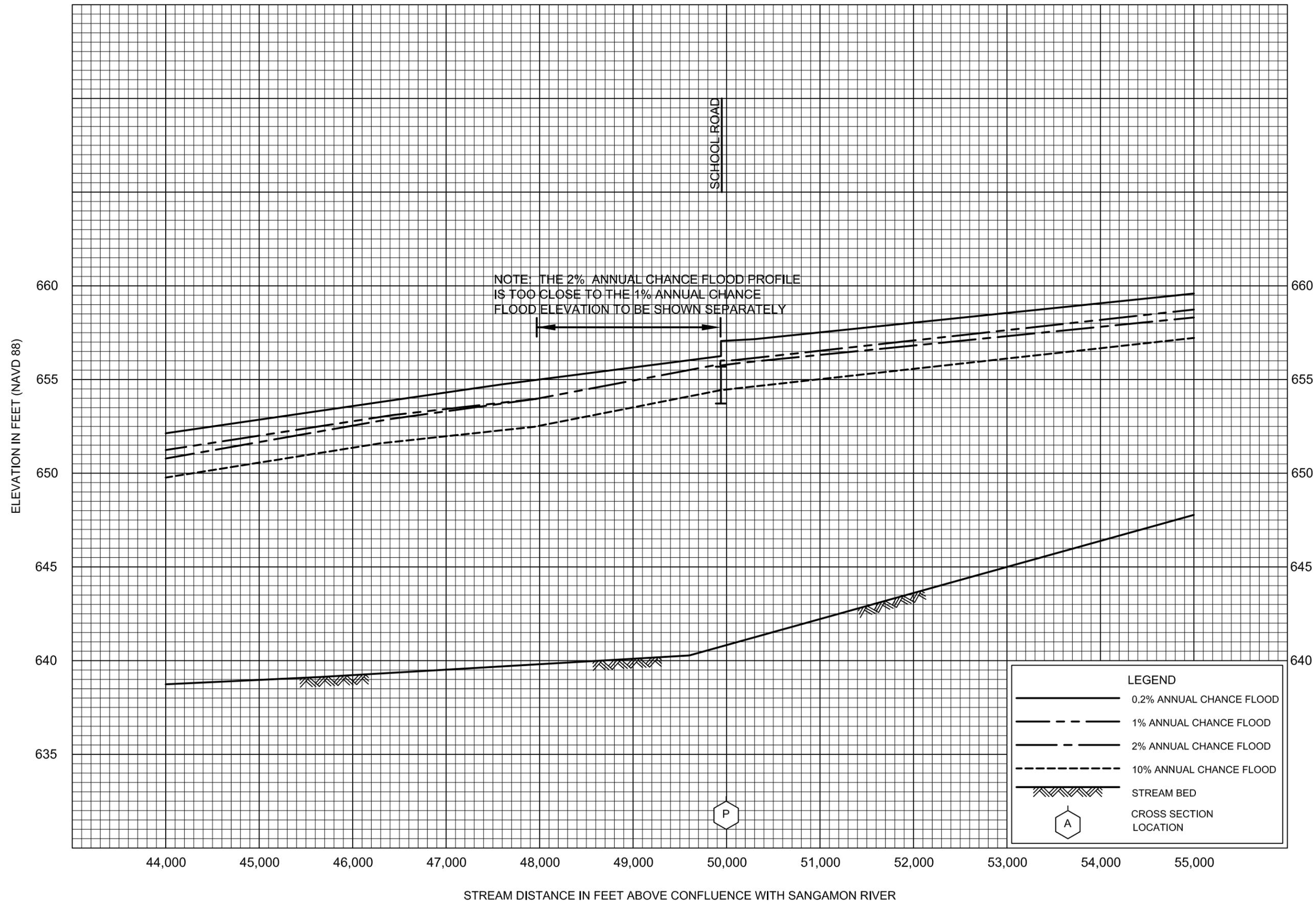


**FLOOD PROFILES**

**FRIENDS CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**MACON COUNTY, IL**  
AND INCORPORATED AREAS

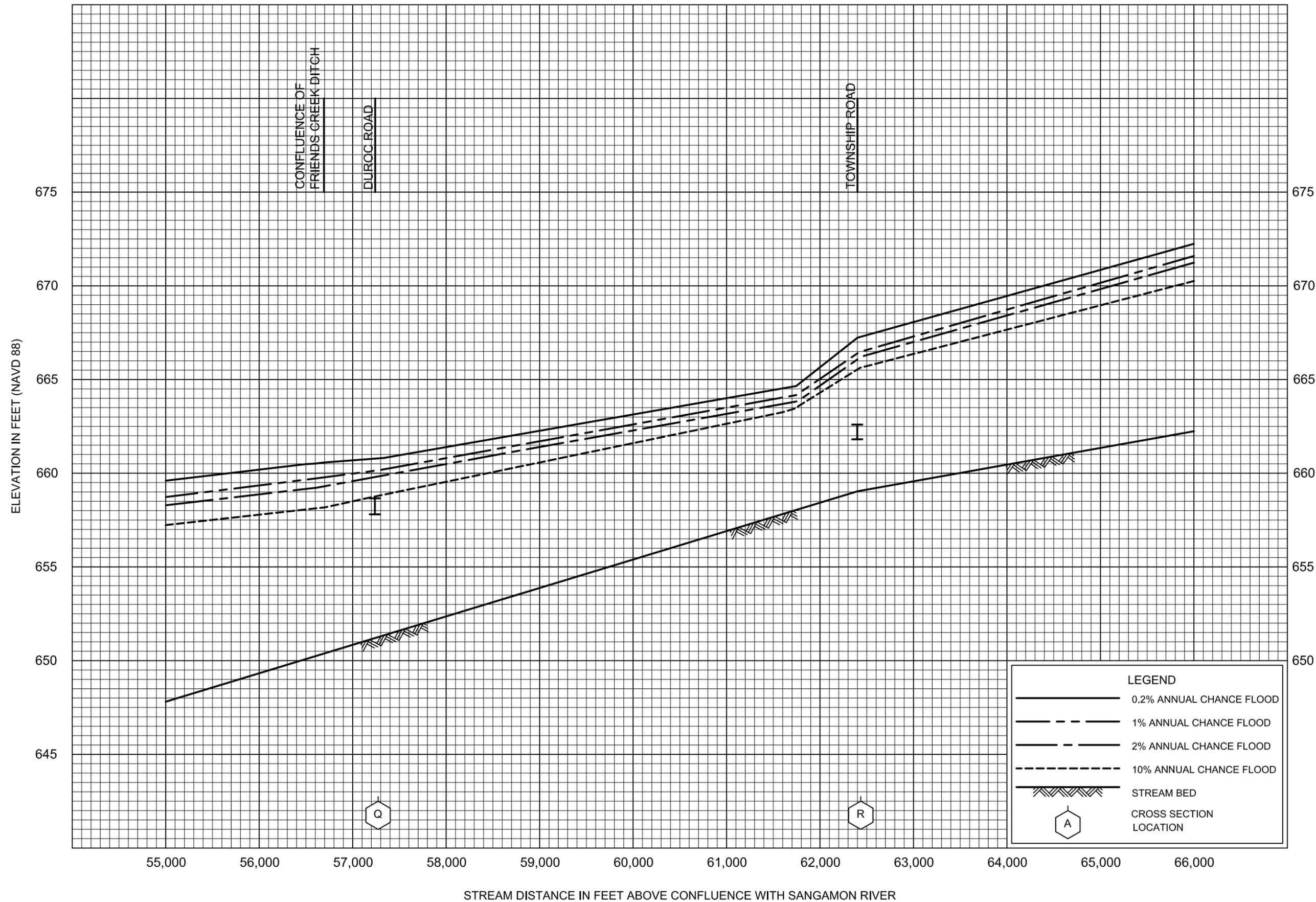


FLOOD PROFILES

FRIENDS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

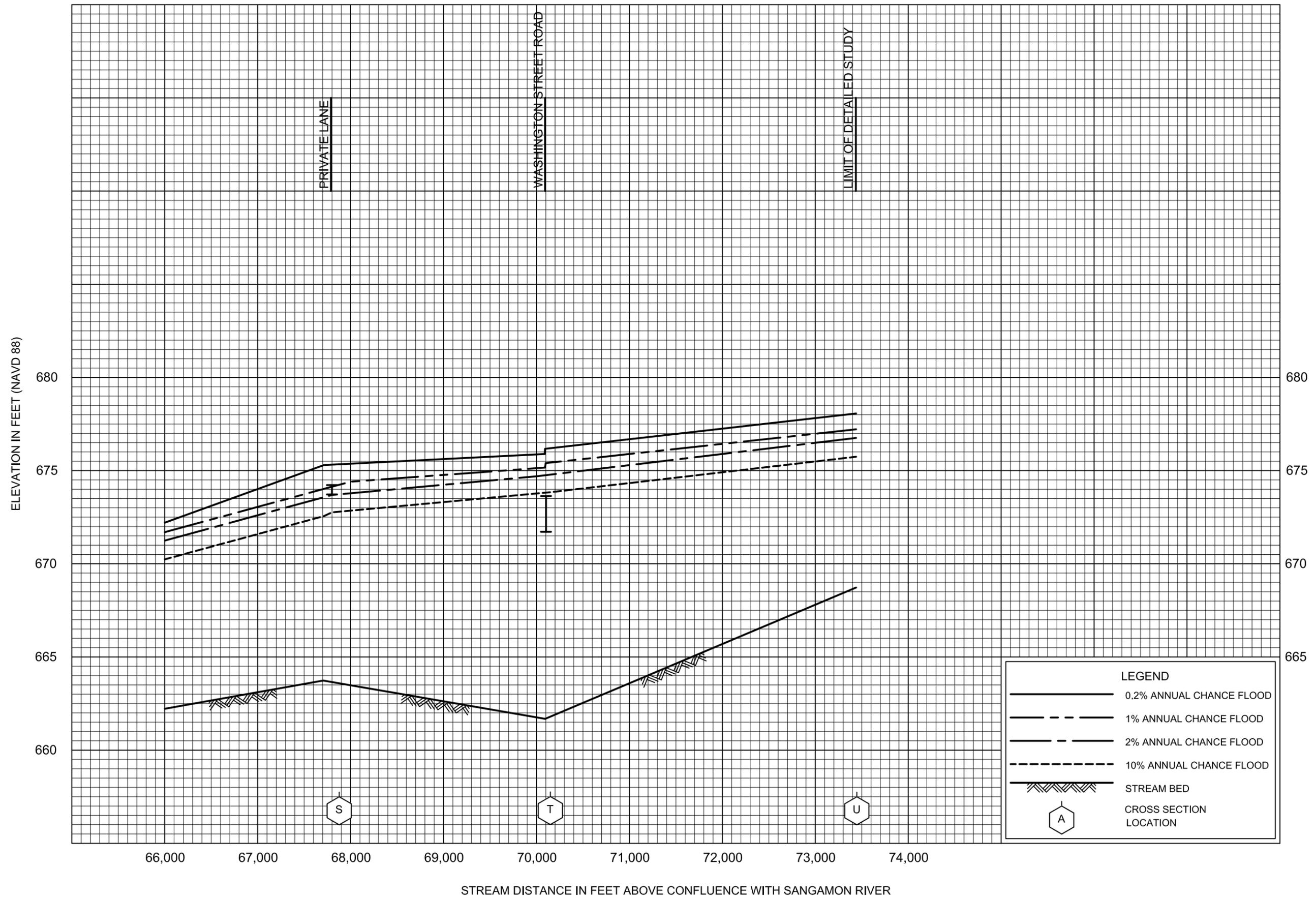


FLOOD PROFILES

FRIENDS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

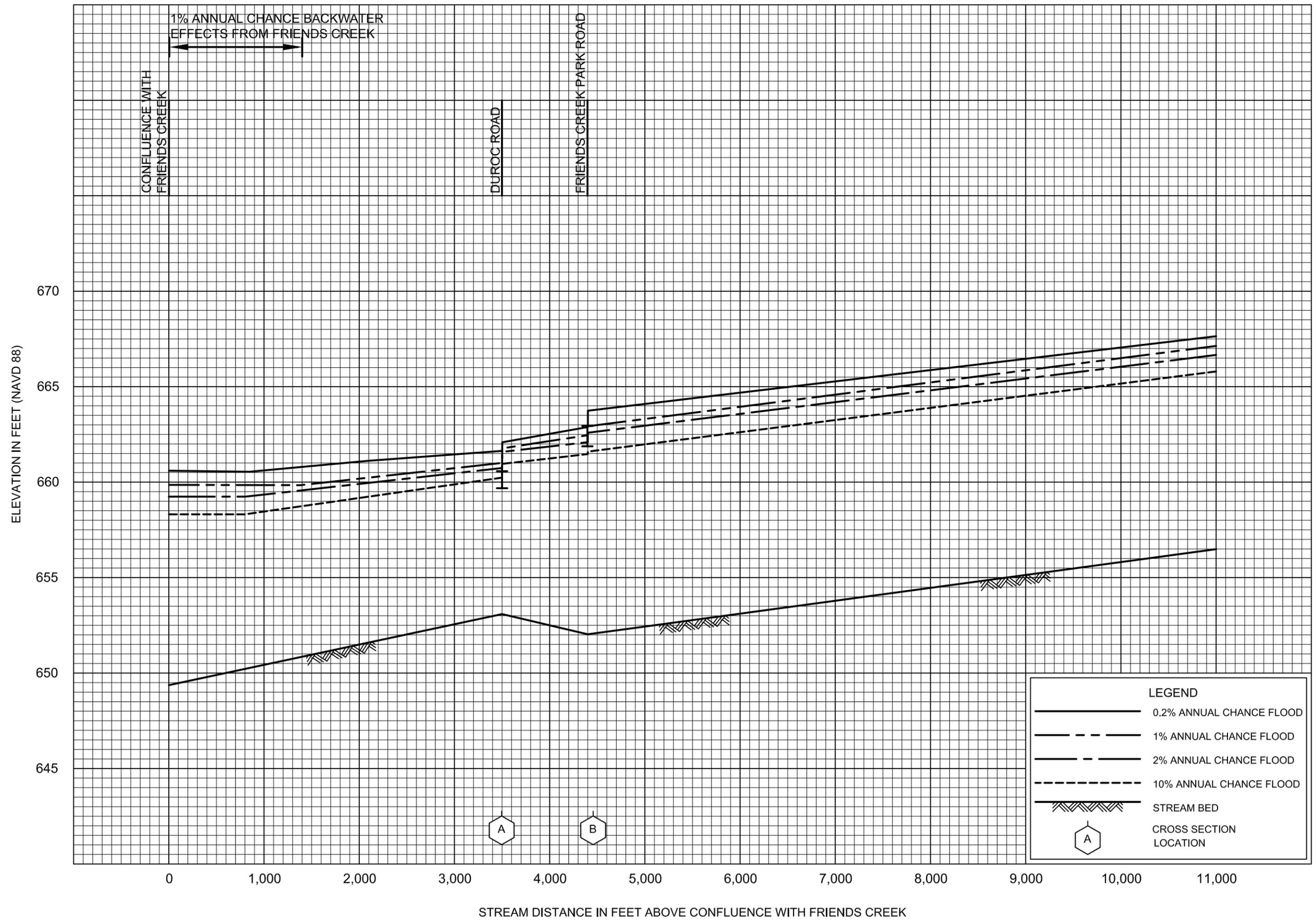


**FLOOD PROFILES**

**FRIENDS CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**MACON COUNTY, IL**  
AND INCORPORATED AREAS



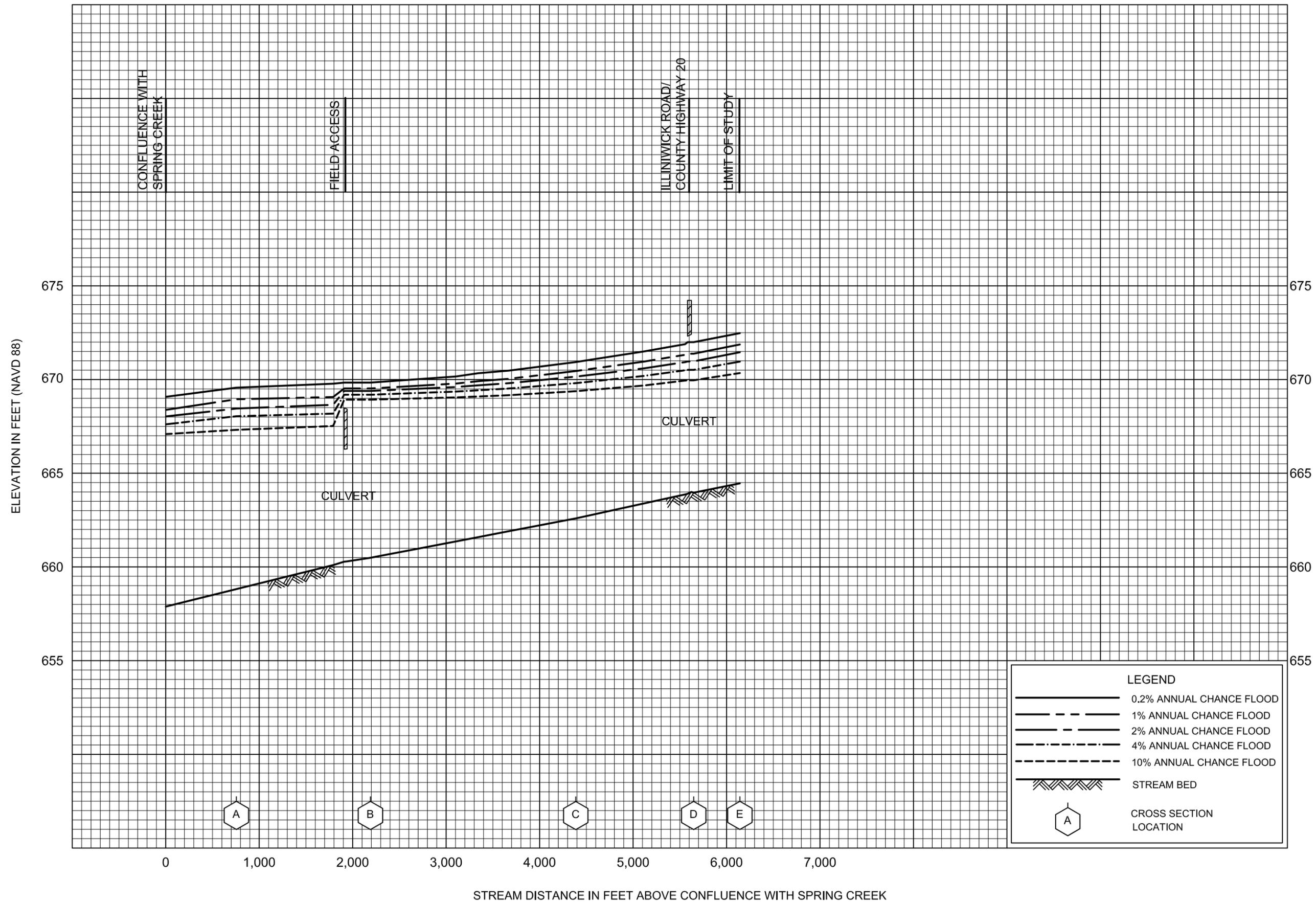
FLOOD PROFILES

FRIENDS CREEK DITCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

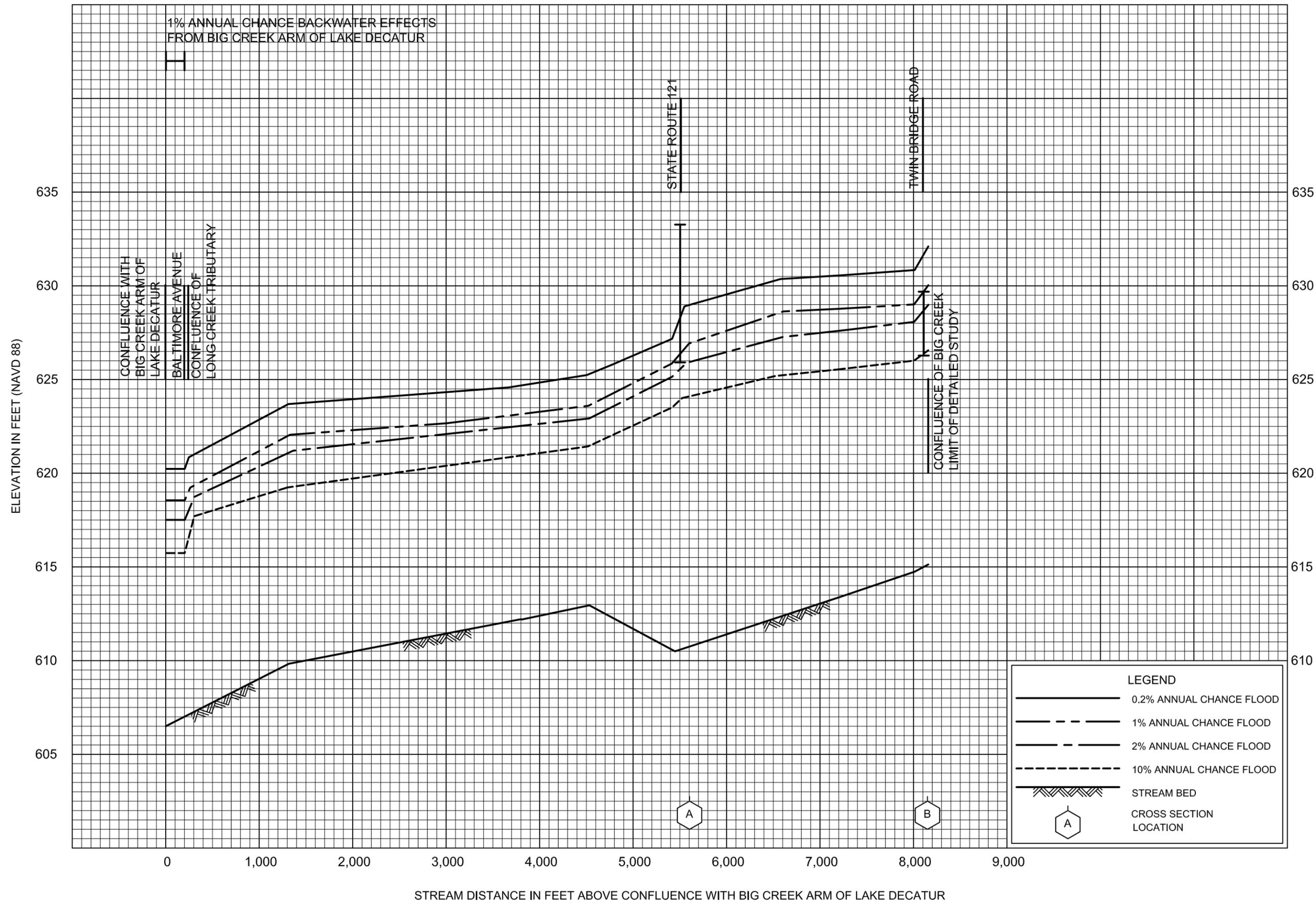




FLOOD PROFILES

INDEPENDENCE BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**MACON COUNTY, IL**  
 AND INCORPORATED AREAS

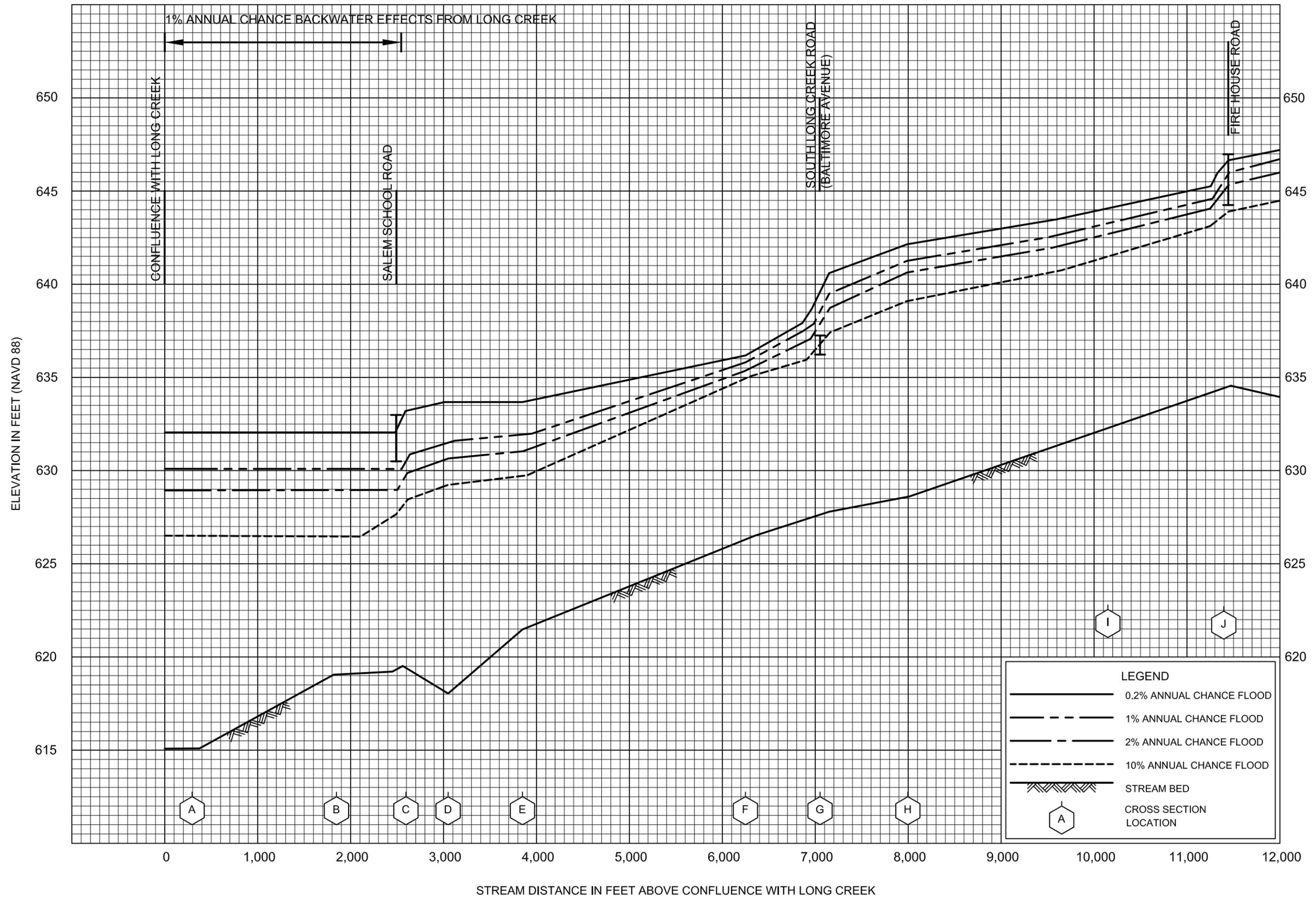


FLOOD PROFILES

LONG CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

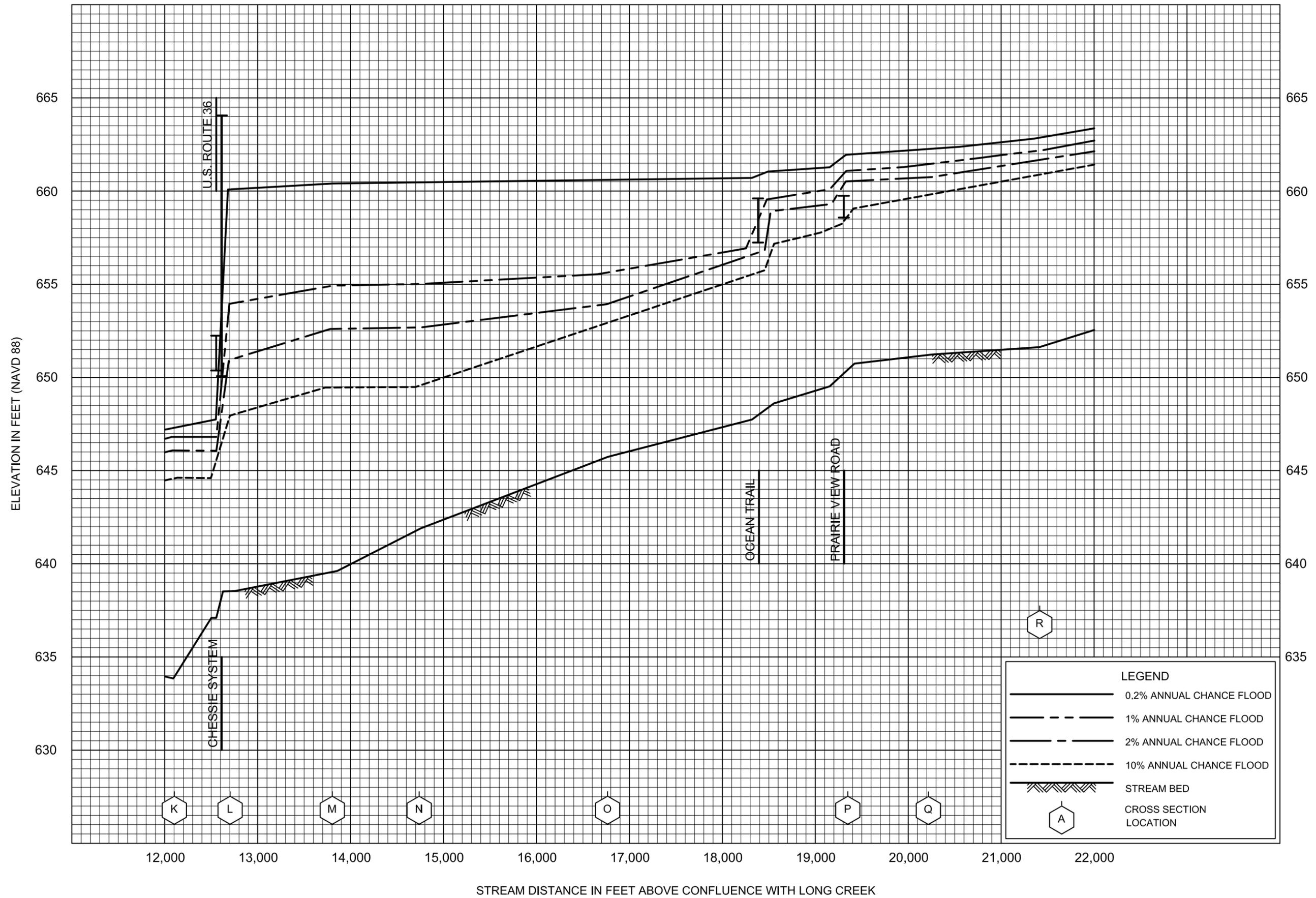


FLOOD PROFILES

LONG CREEK (EAST OF BIG CREEK)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

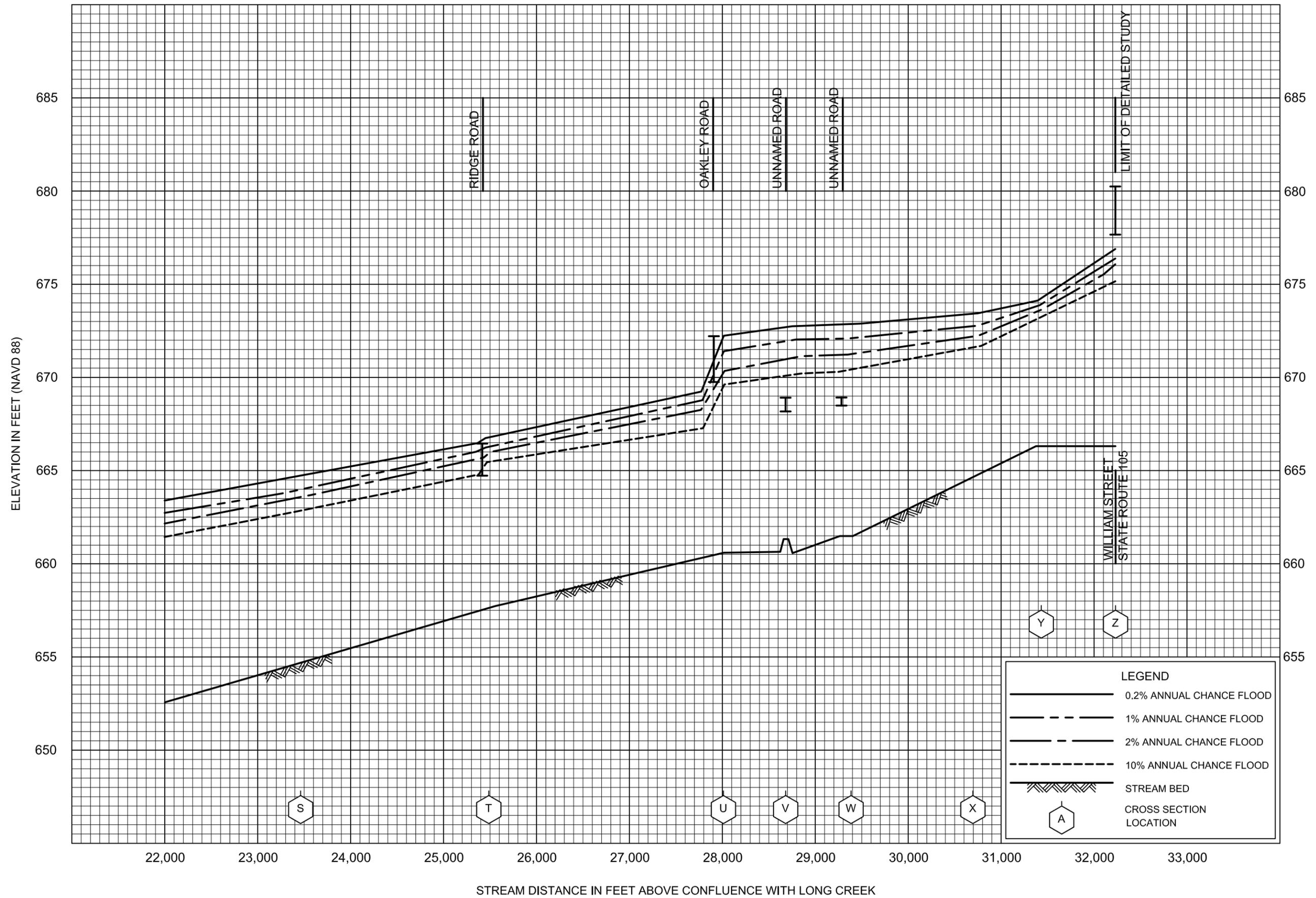


FLOOD PROFILES

LONG CREEK (EAST OF BIG CREEK)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

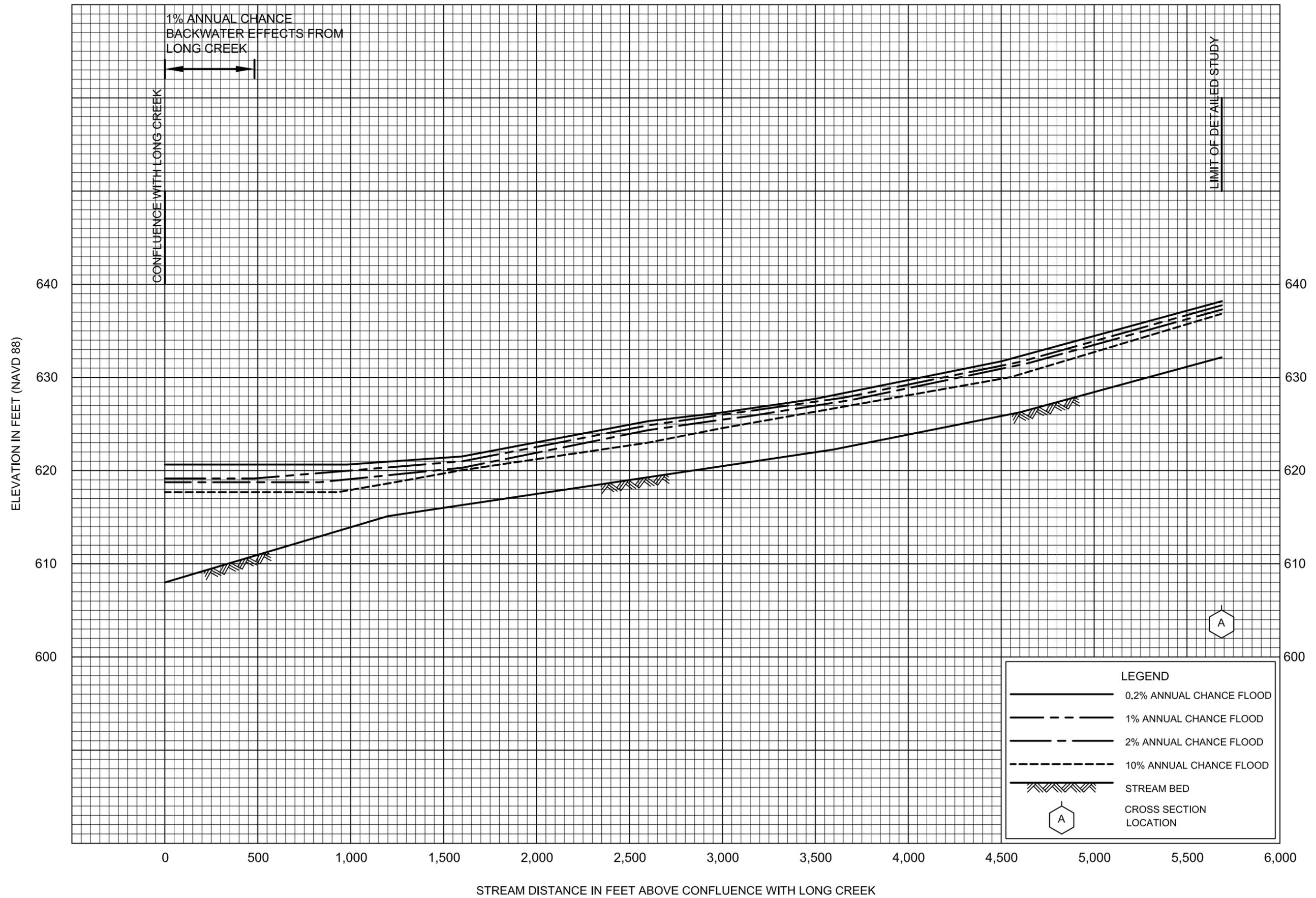


FLOOD PROFILES

LONG CREEK (EAST OF BIG CREEK)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

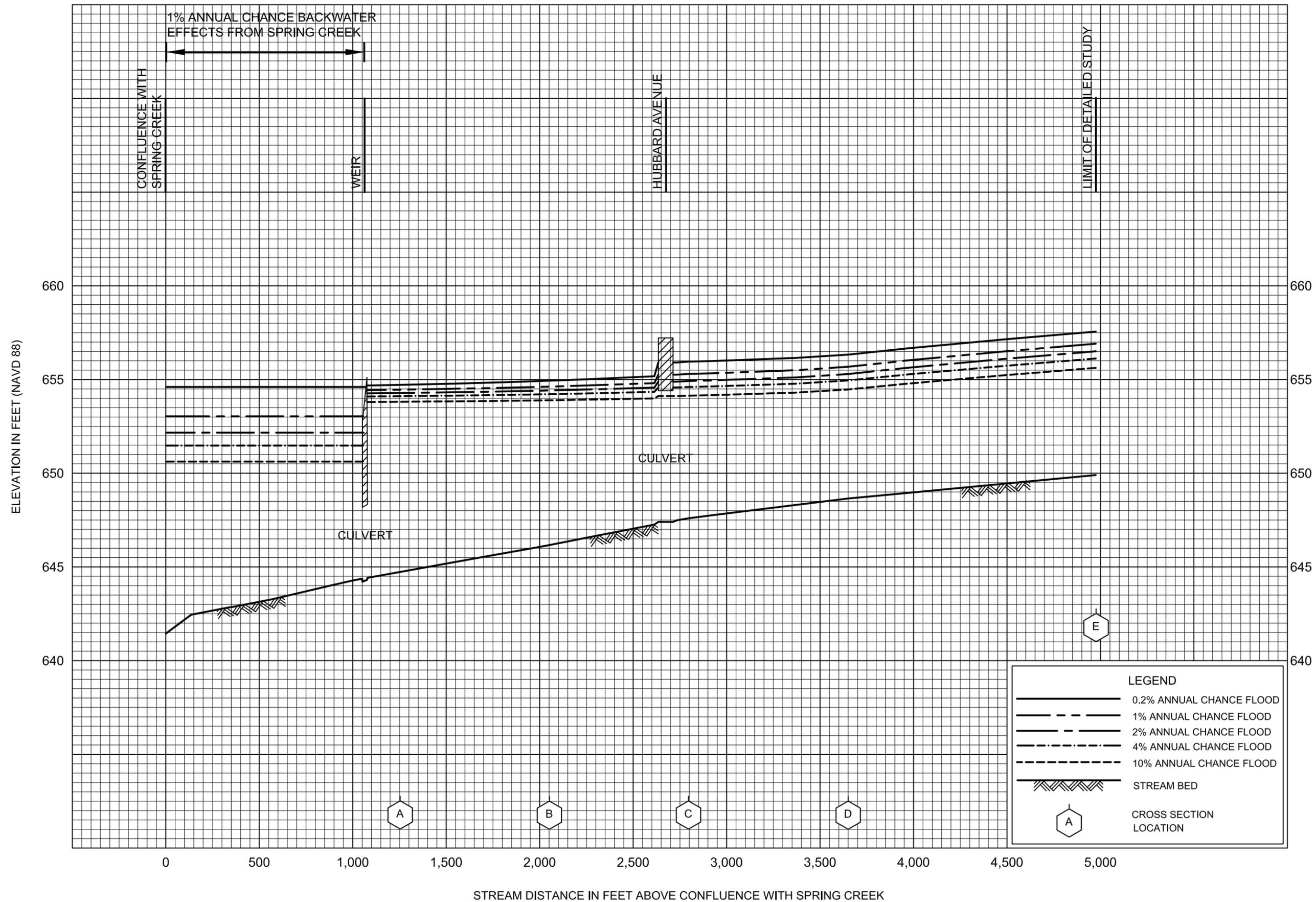


FLOOD PROFILES

LONG CREEK TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

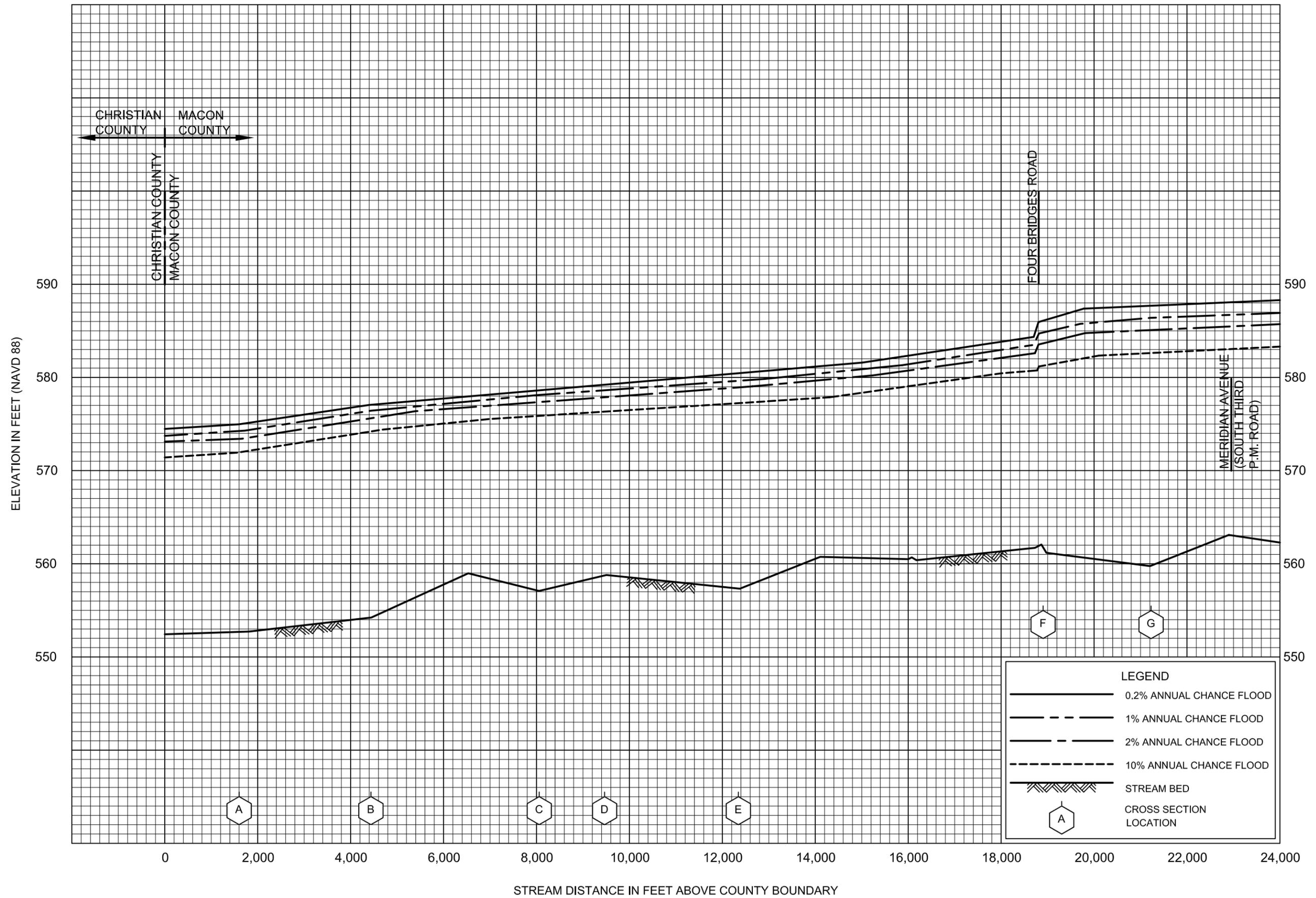


**FLOOD PROFILES**

**NORTHEAST DRAINAGE DITCH**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**MACON COUNTY, IL**  
AND INCORPORATED AREAS

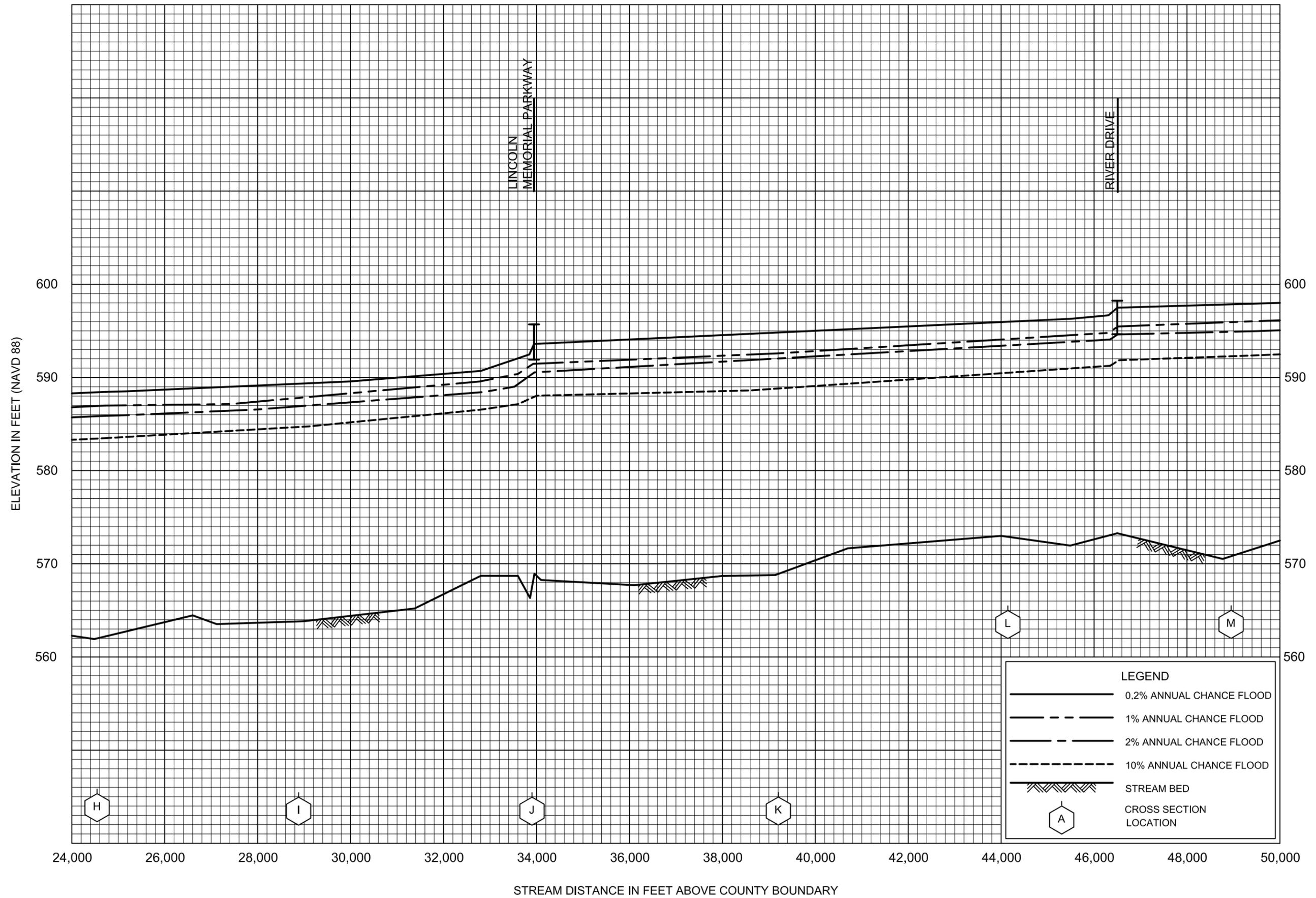


FLOOD PROFILES

SANGAMON RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

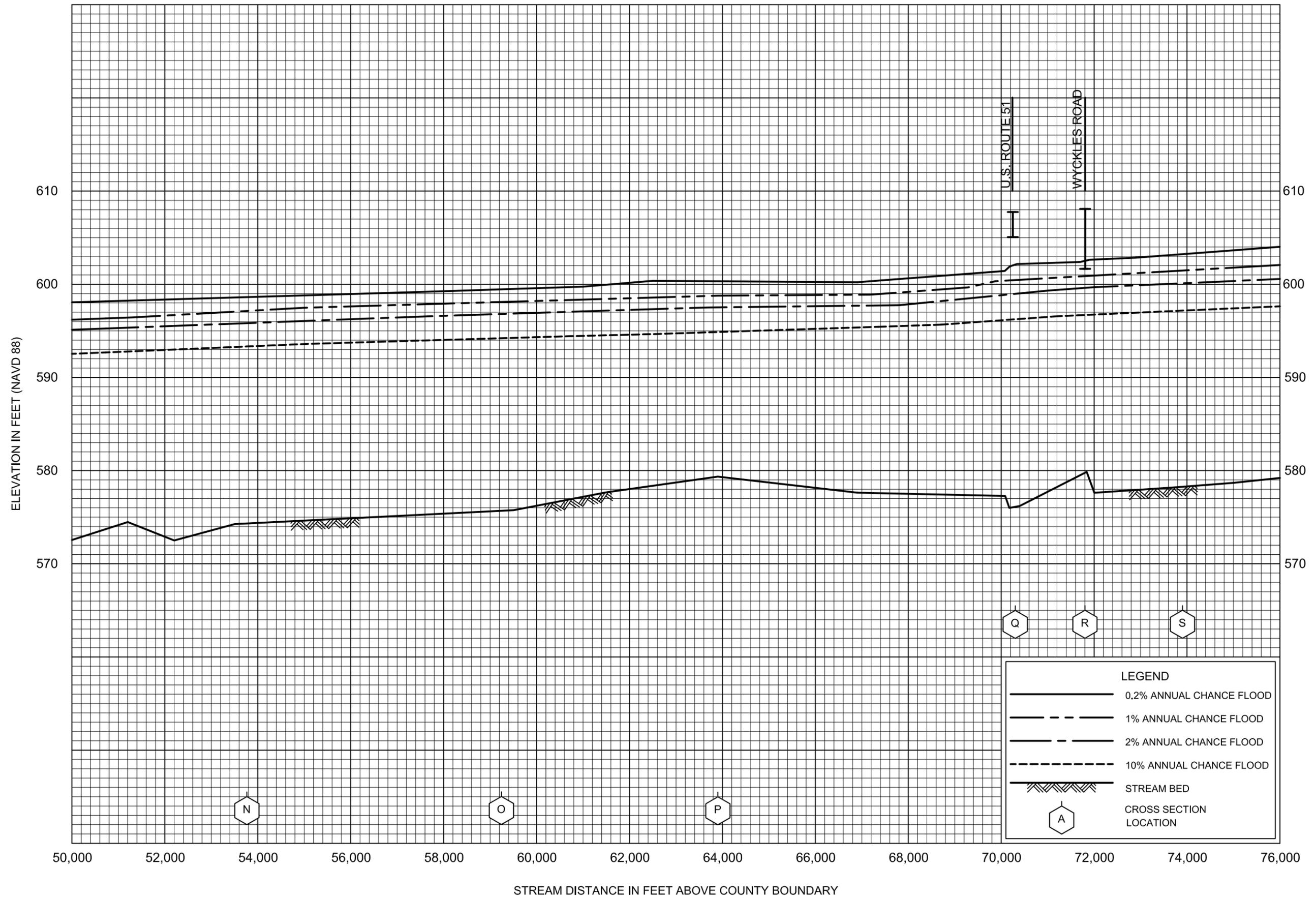


FLOOD PROFILES

SANGAMON RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

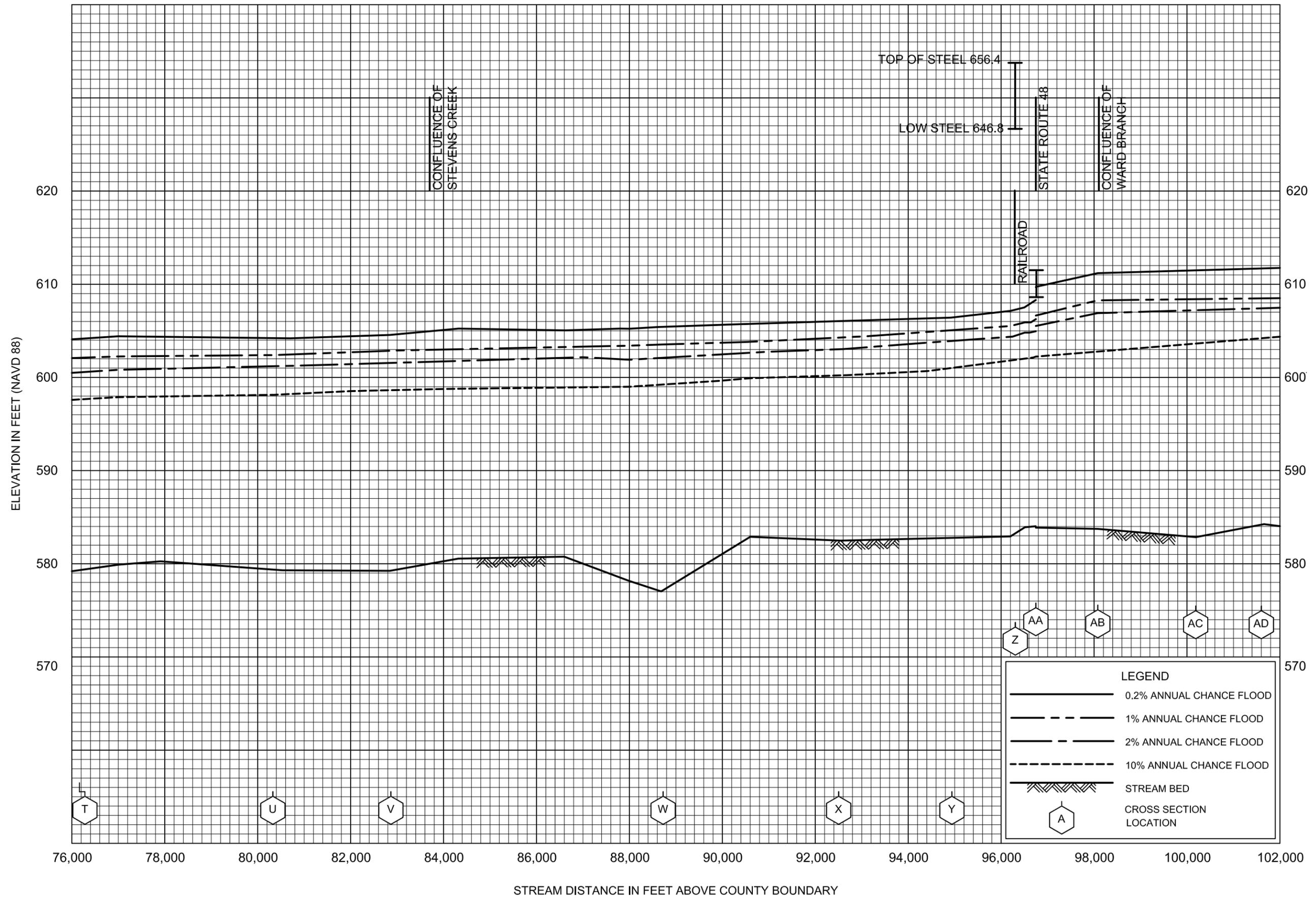


FLOOD PROFILES

SANGAMON RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

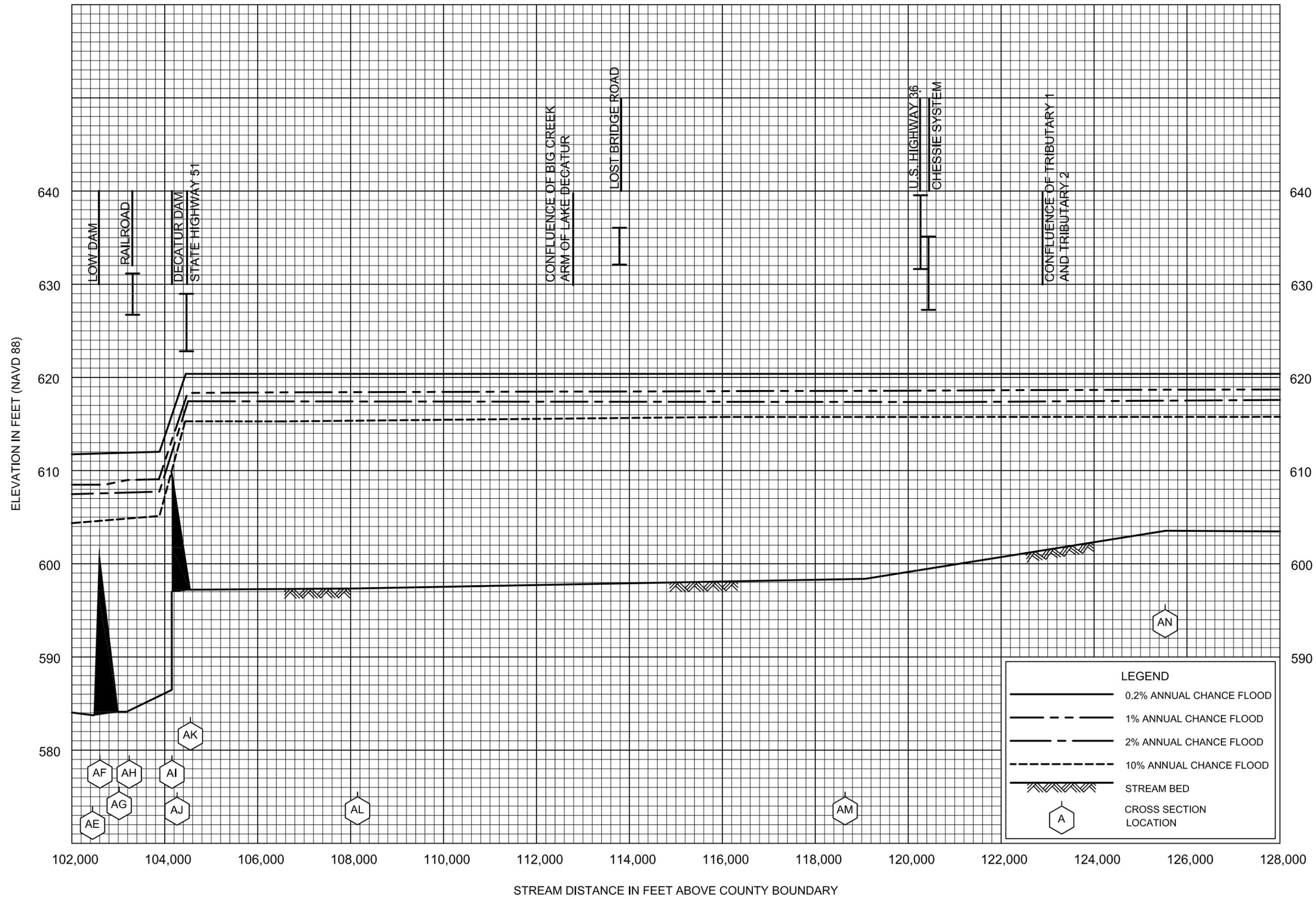


FLOOD PROFILES

SANGAMON RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

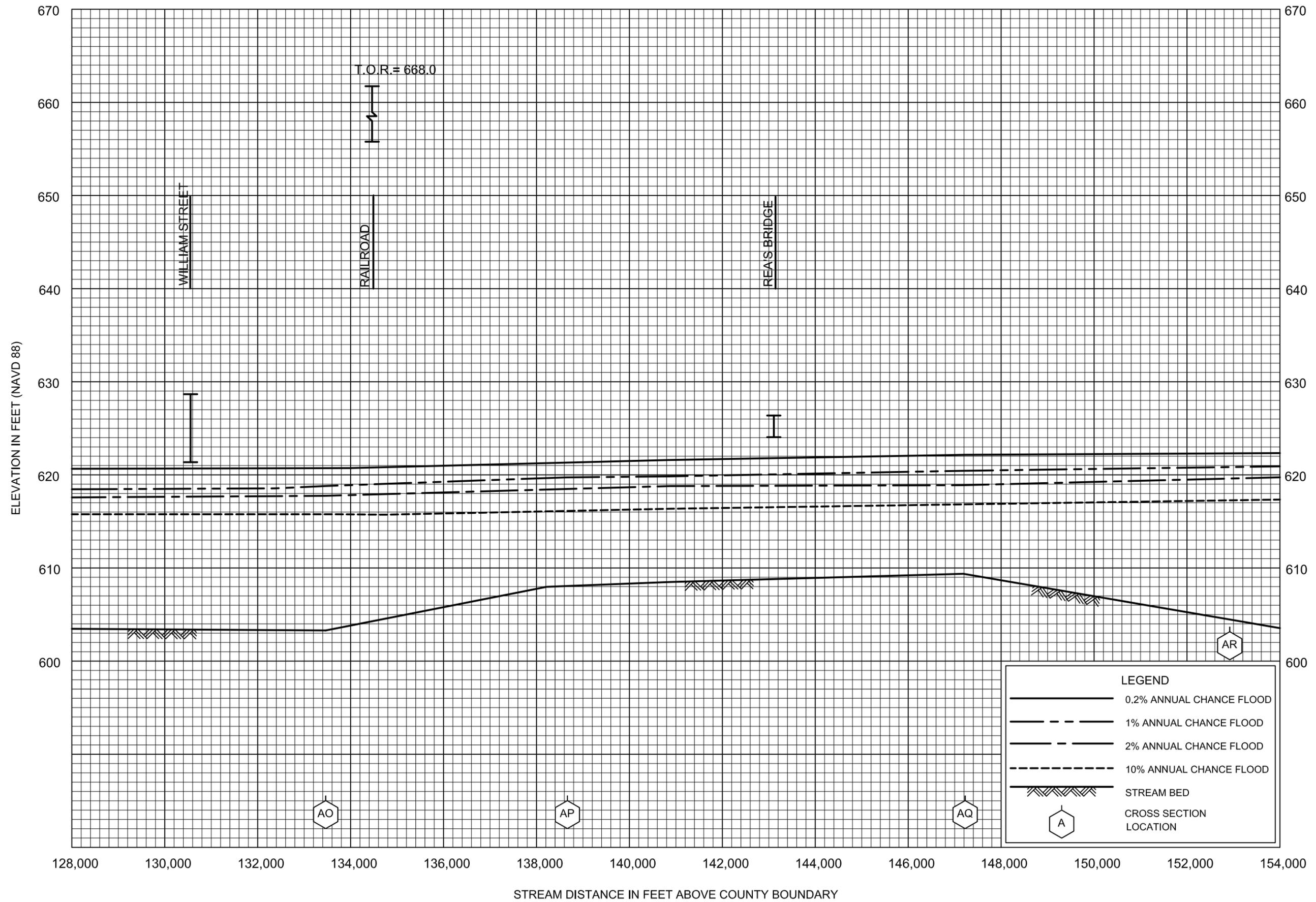


FLOOD PROFILES

SANGAMON RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

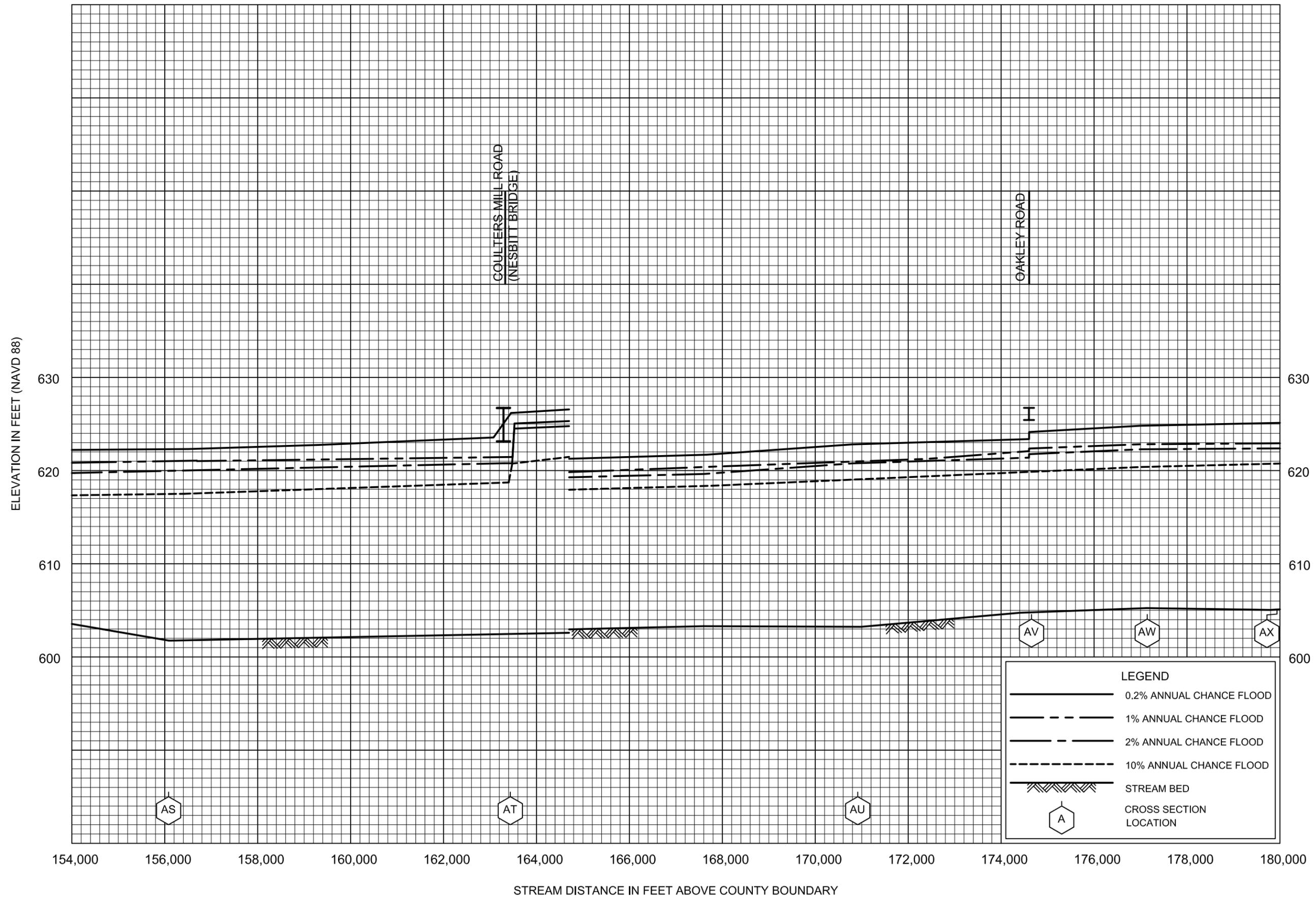


FLOOD PROFILES

SANGAMON RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

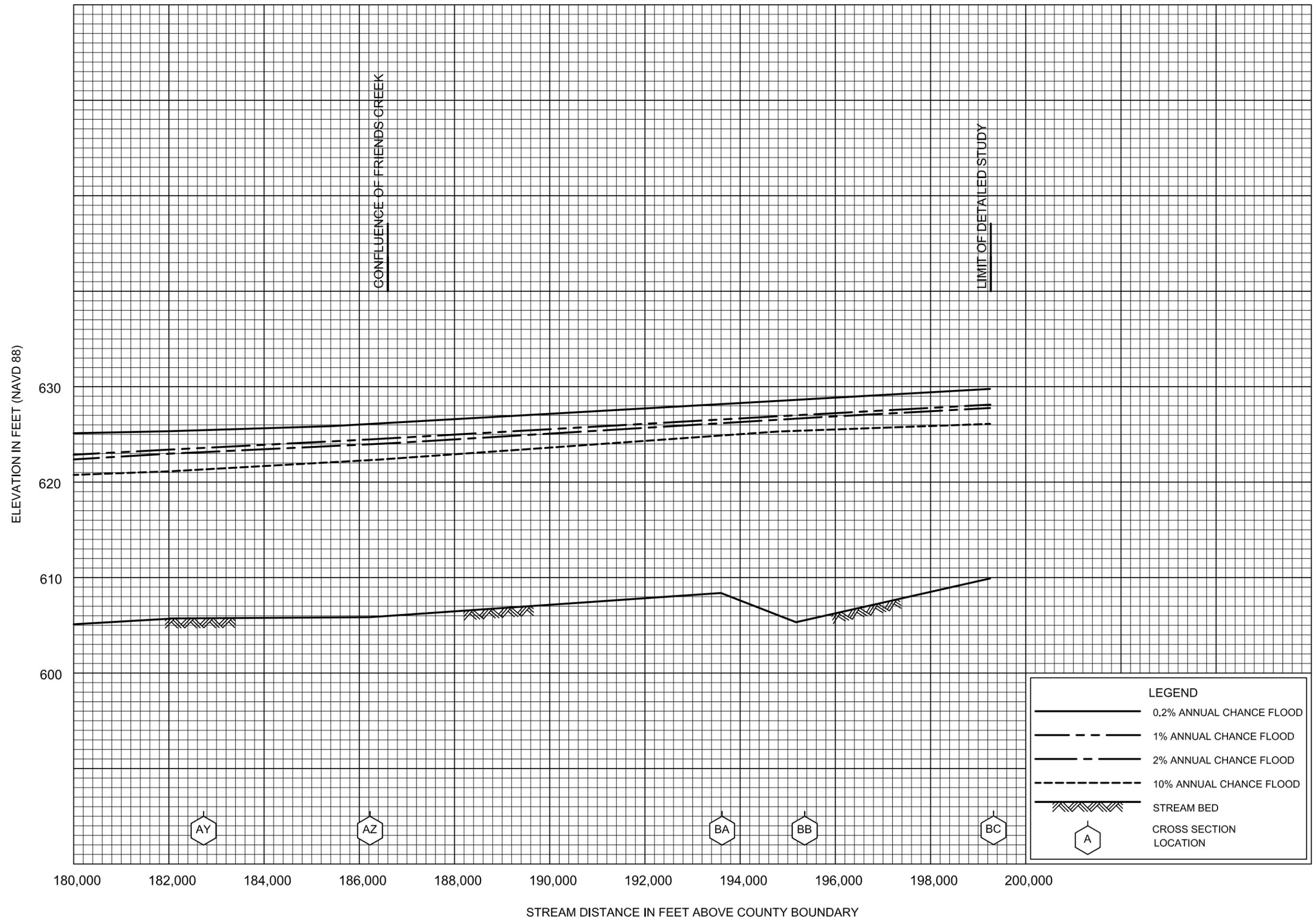


FLOOD PROFILES

SANGAMON RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

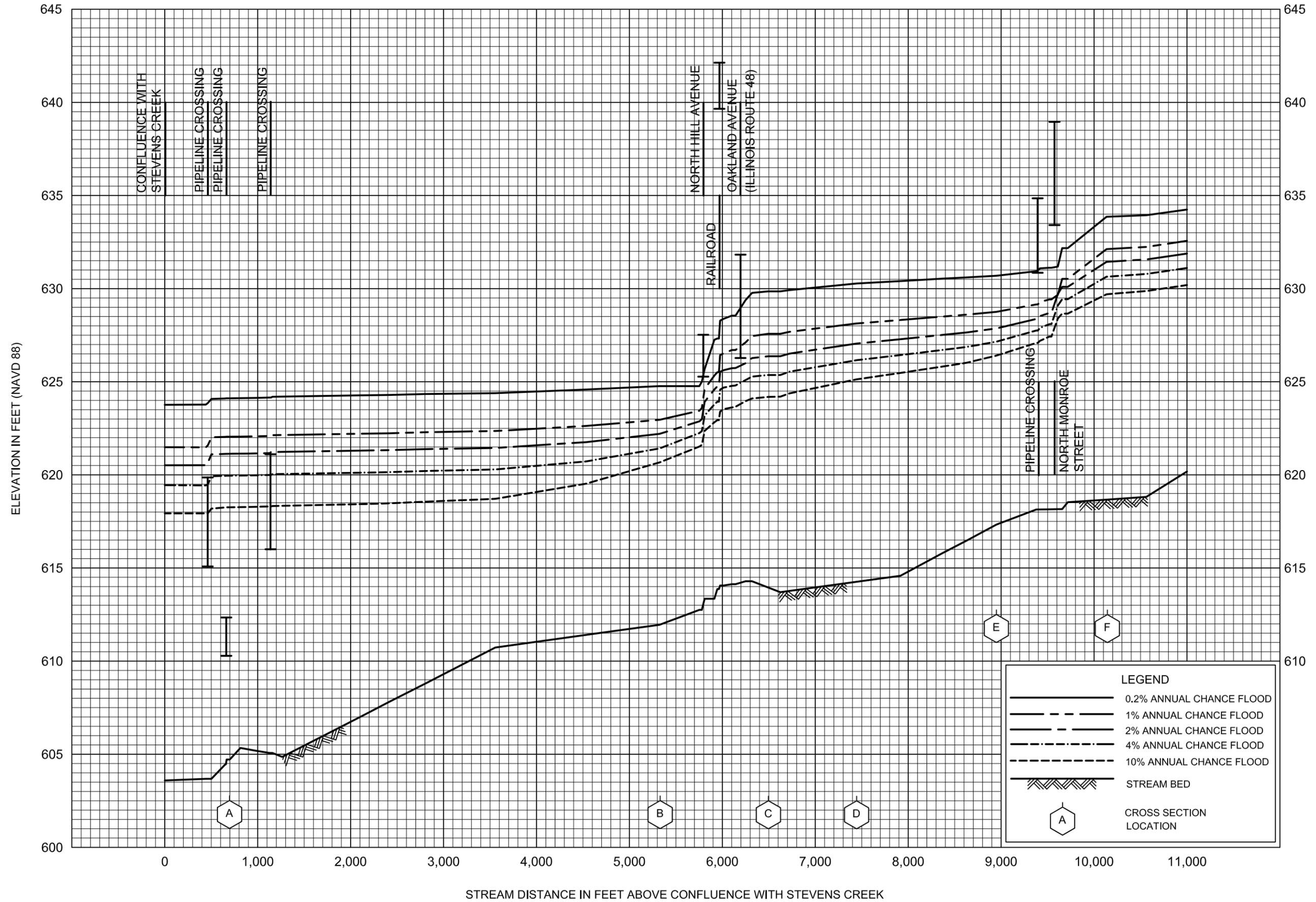


**FLOOD PROFILES**

**SANGAMON RIVER**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**MACON COUNTY, IL**  
AND INCORPORATED AREAS

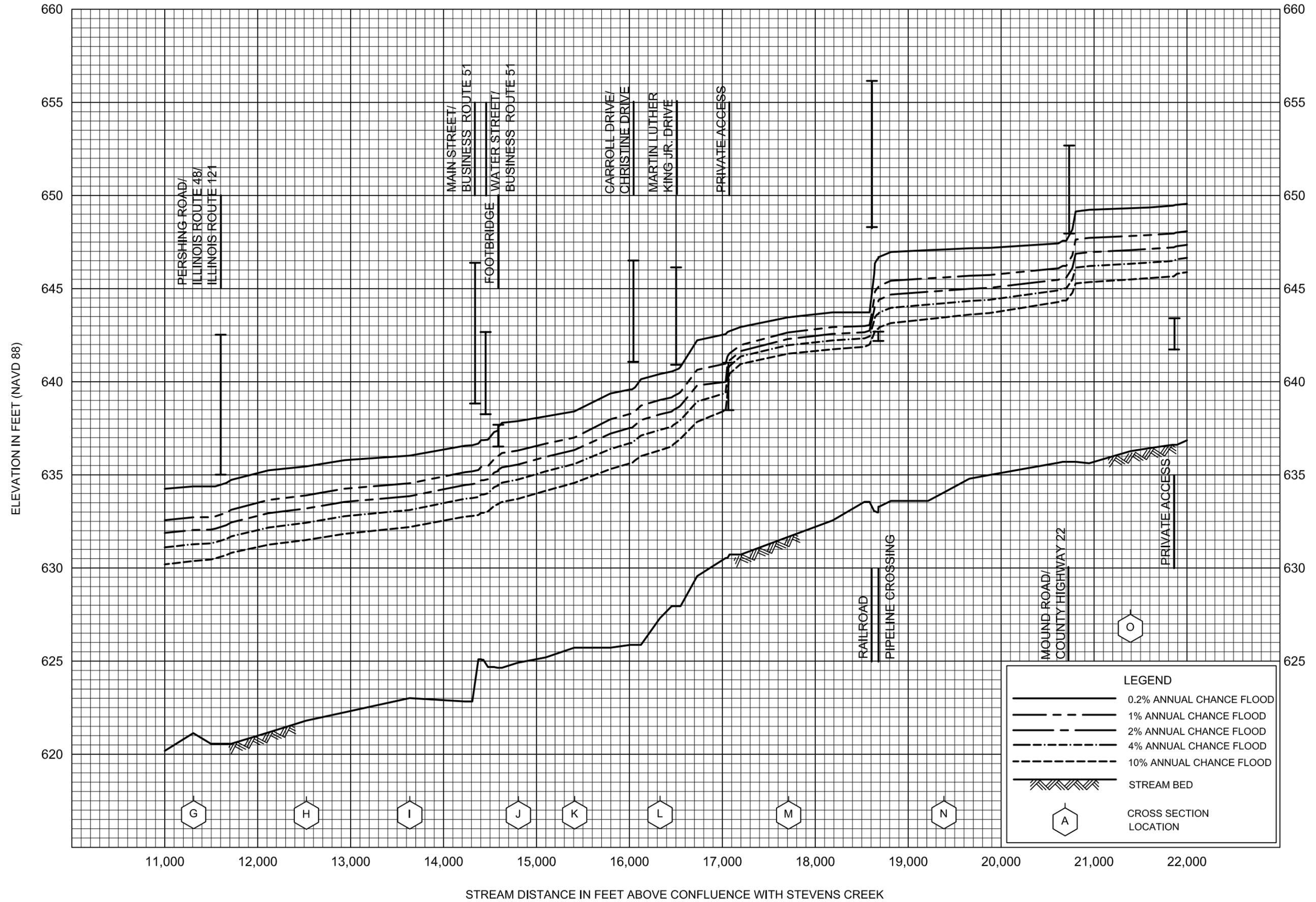


FLOOD PROFILES

SPRING CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

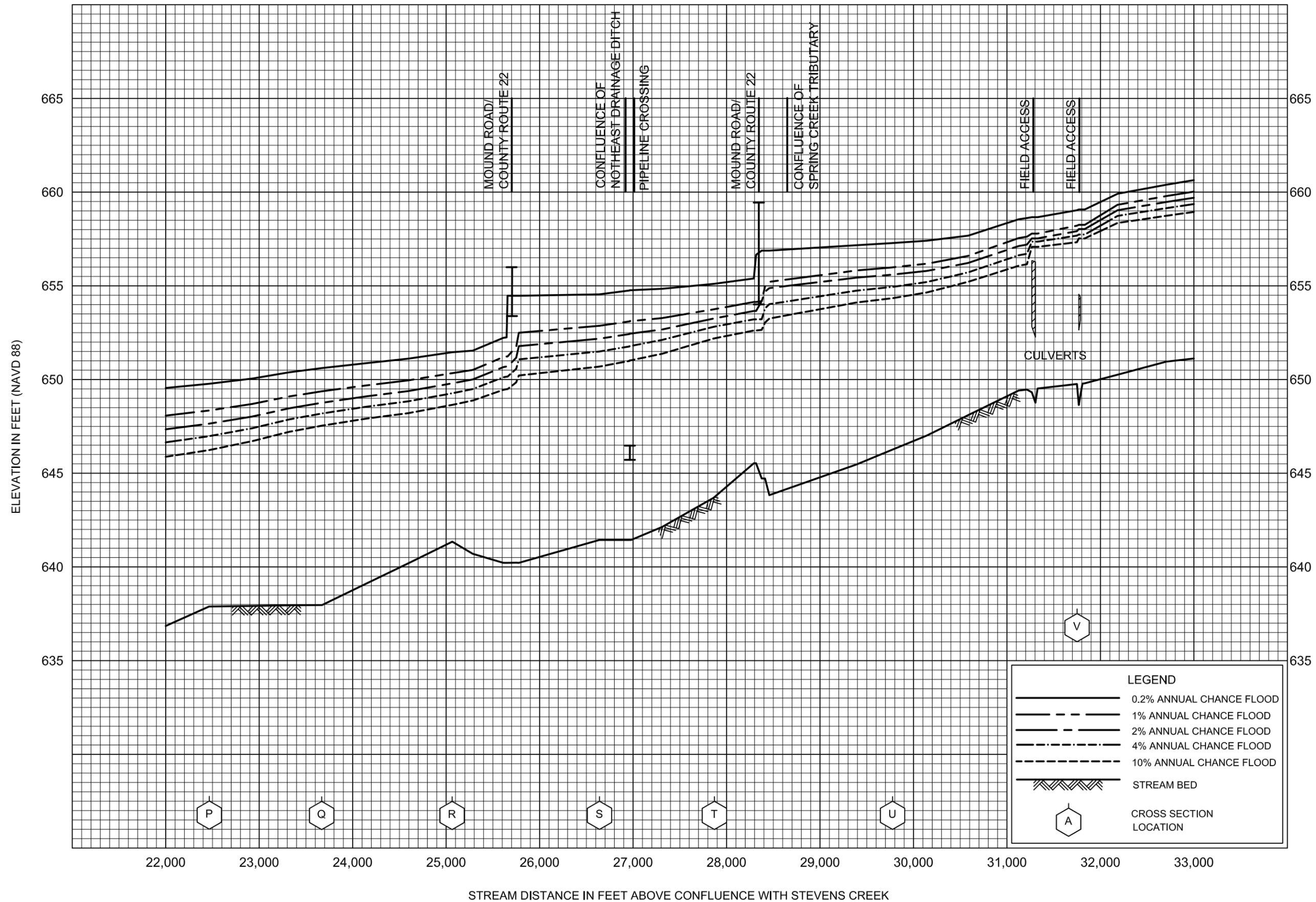


FLOOD PROFILES

SPRING CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

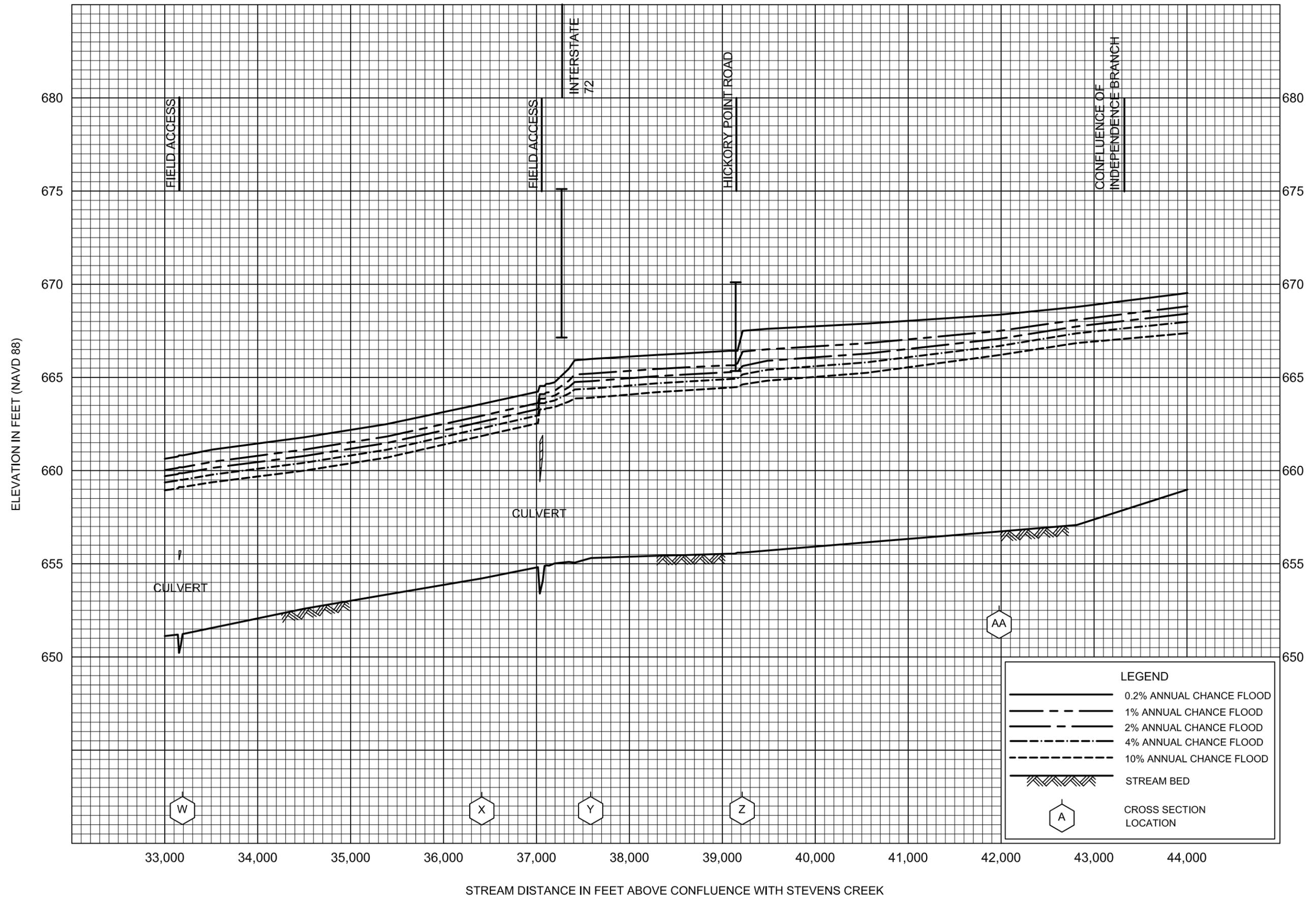
MACON COUNTY, IL  
AND INCORPORATED AREAS



FLOOD PROFILES

SPRING CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**MACON COUNTY, IL**  
 AND INCORPORATED AREAS

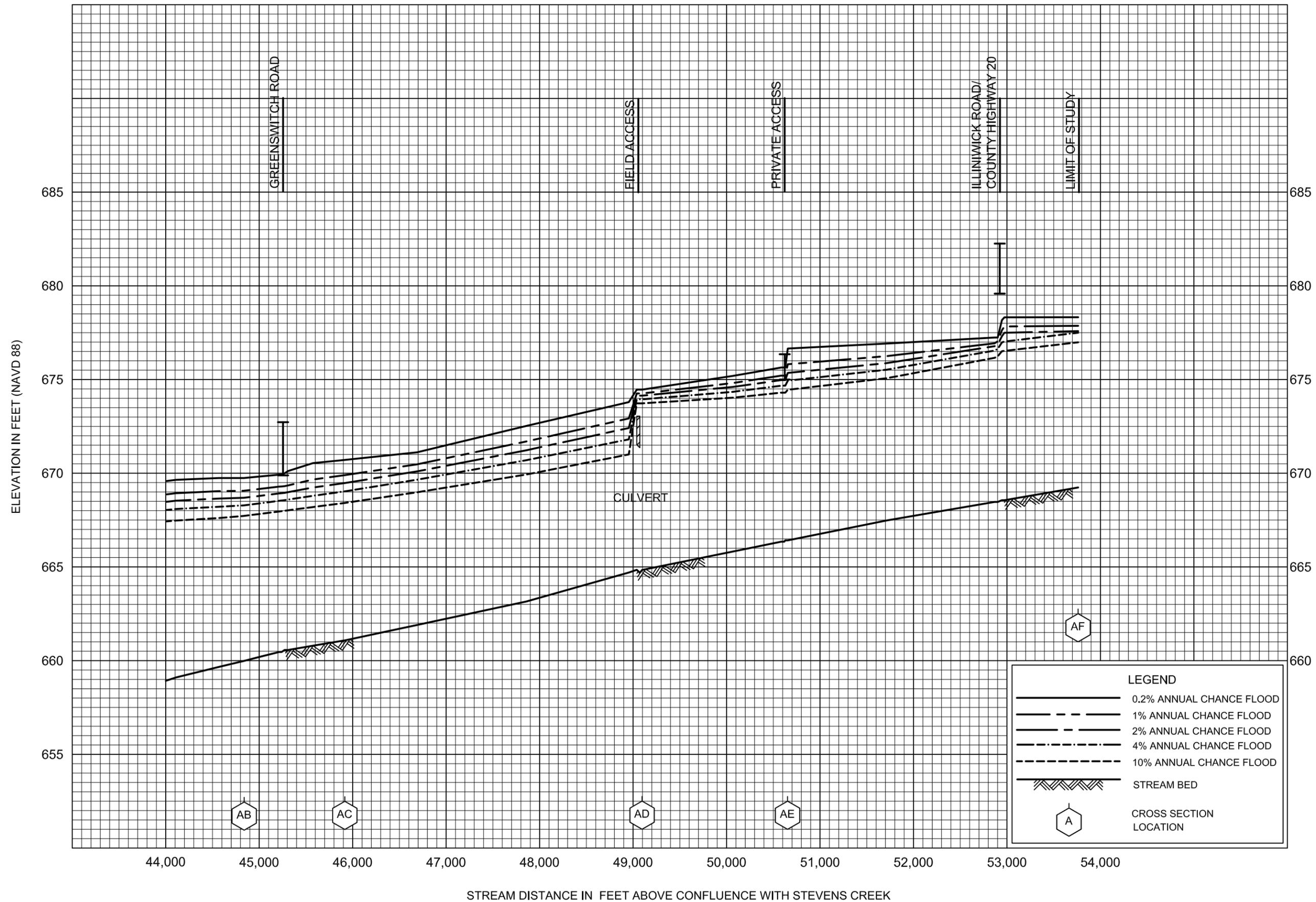


FLOOD PROFILES

SPRING CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

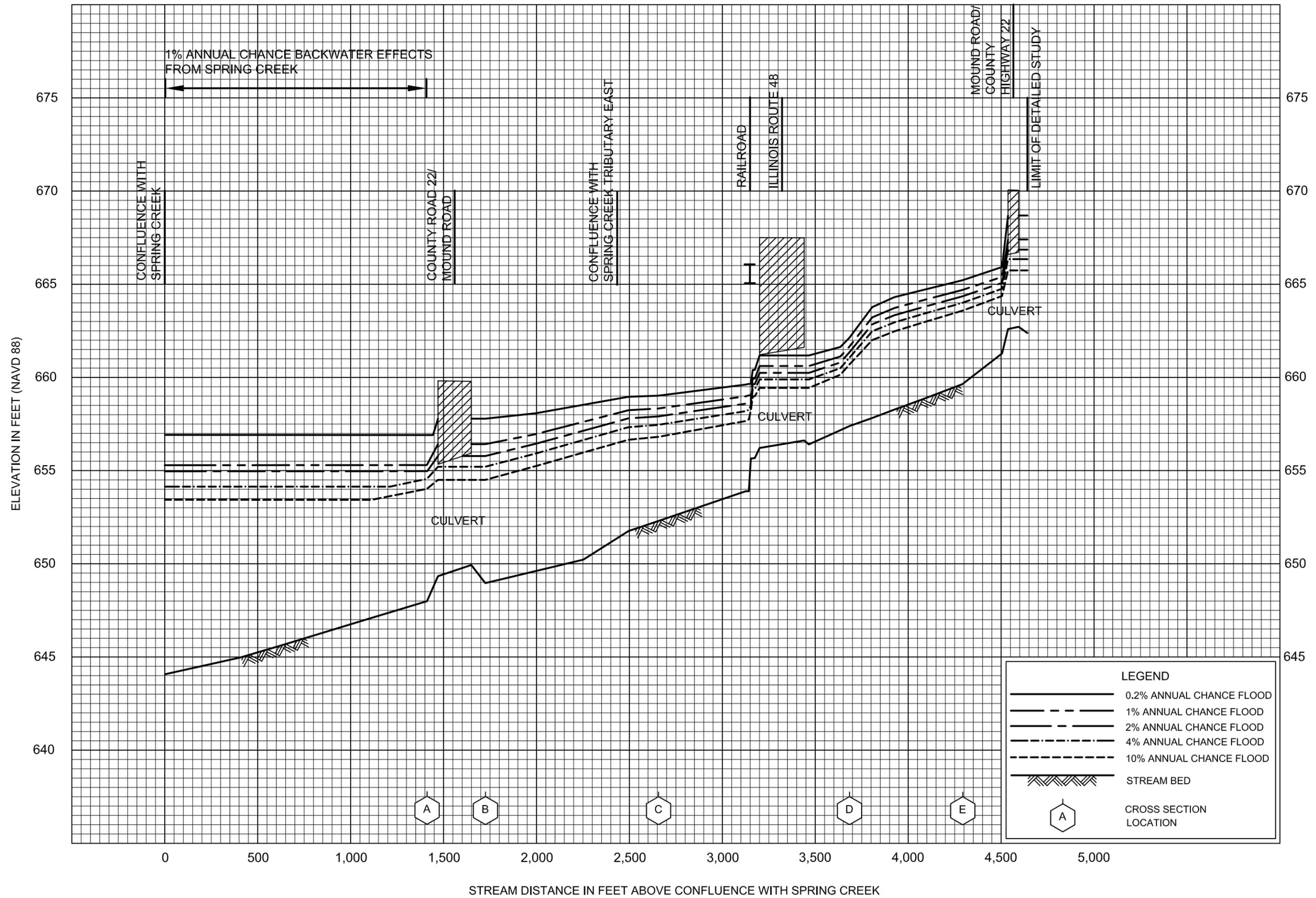


**FLOOD PROFILES**

**SPRING CREEK**

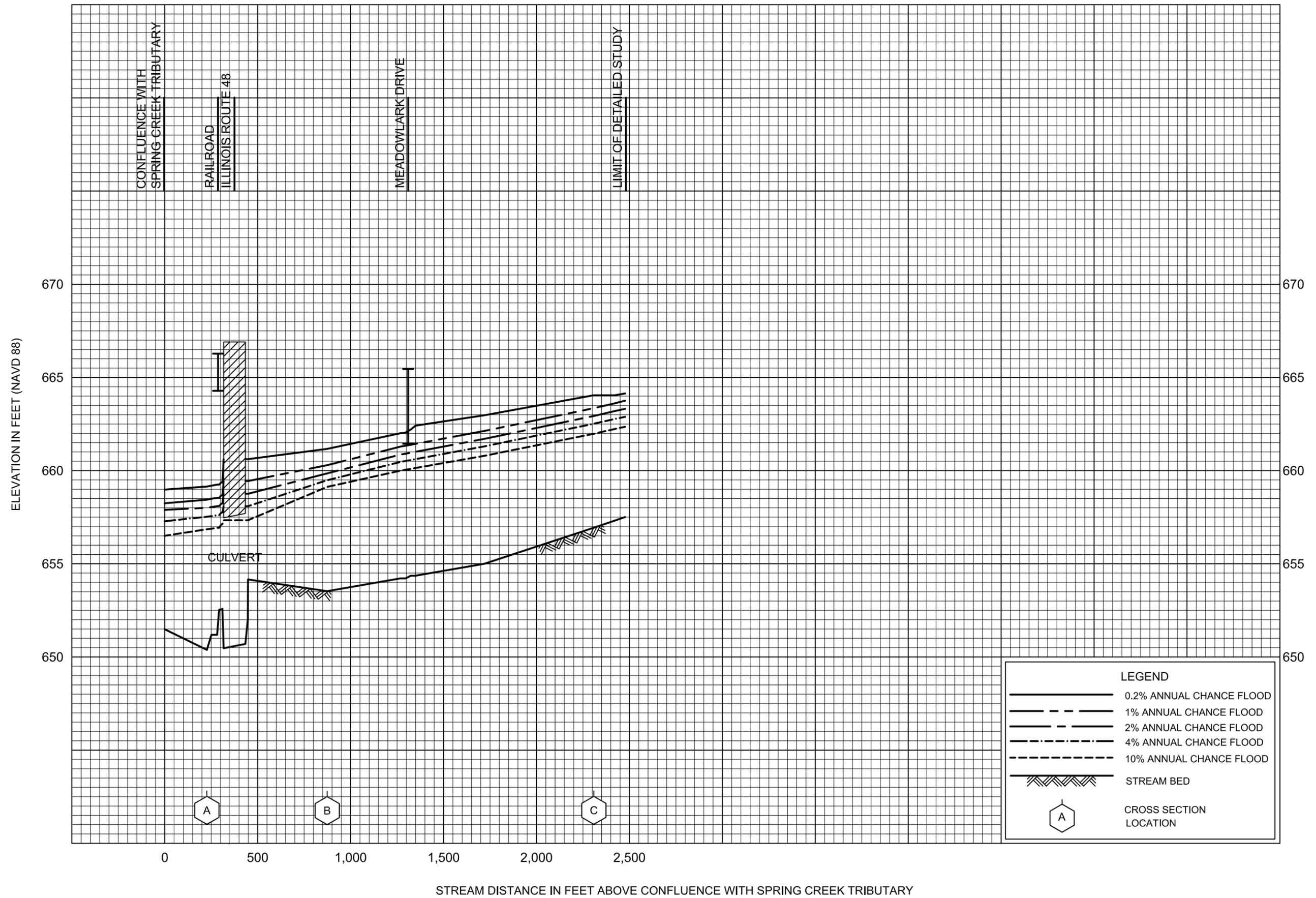
FEDERAL EMERGENCY MANAGEMENT AGENCY

**MACON COUNTY, IL**  
AND INCORPORATED AREAS



FLOOD PROFILES  
 SPRING CREEK TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY  
 MACON COUNTY, IL  
 AND INCORPORATED AREAS

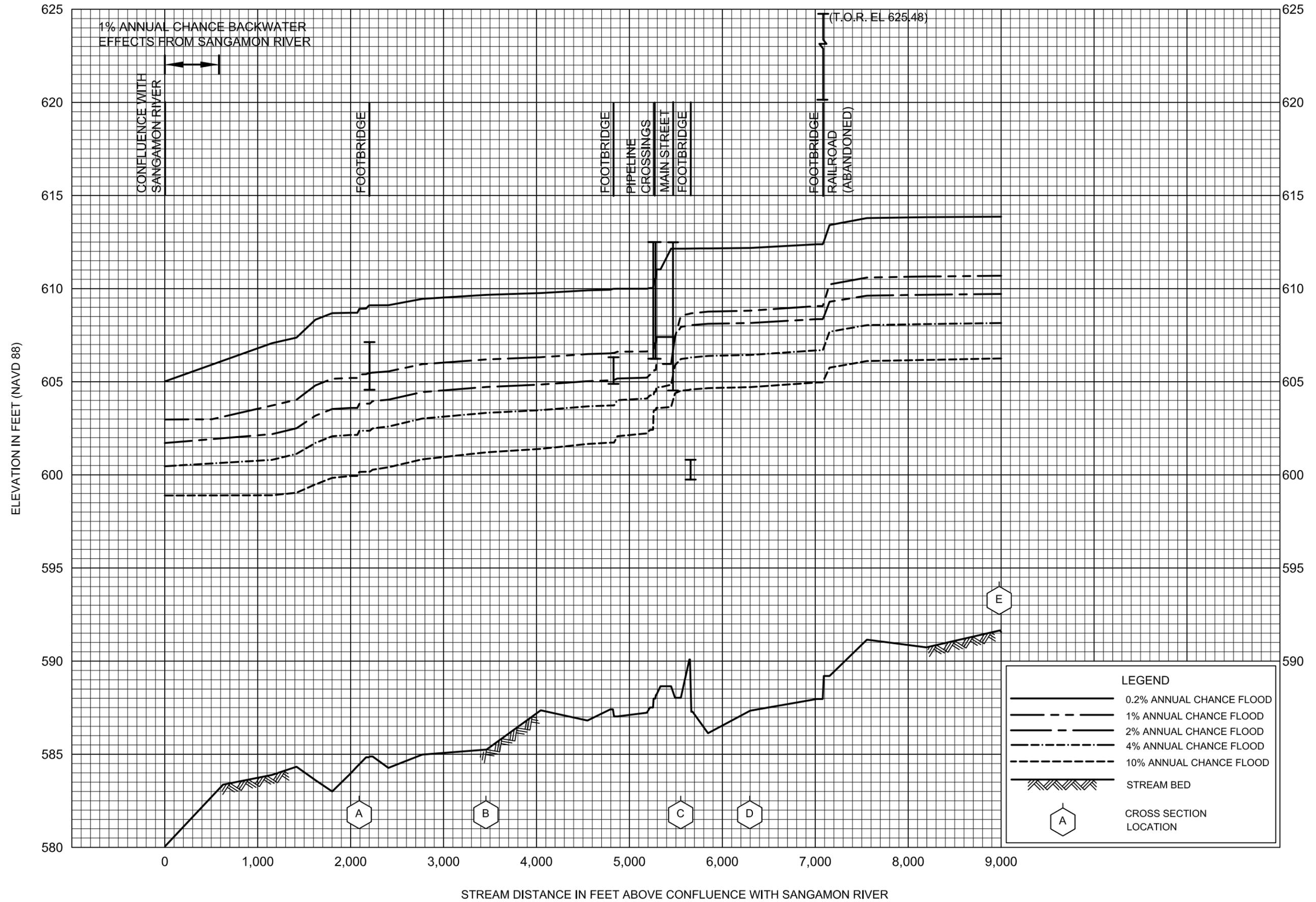


FLOOD PROFILES

SPRING CREEK TRIBUTARY EAST

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

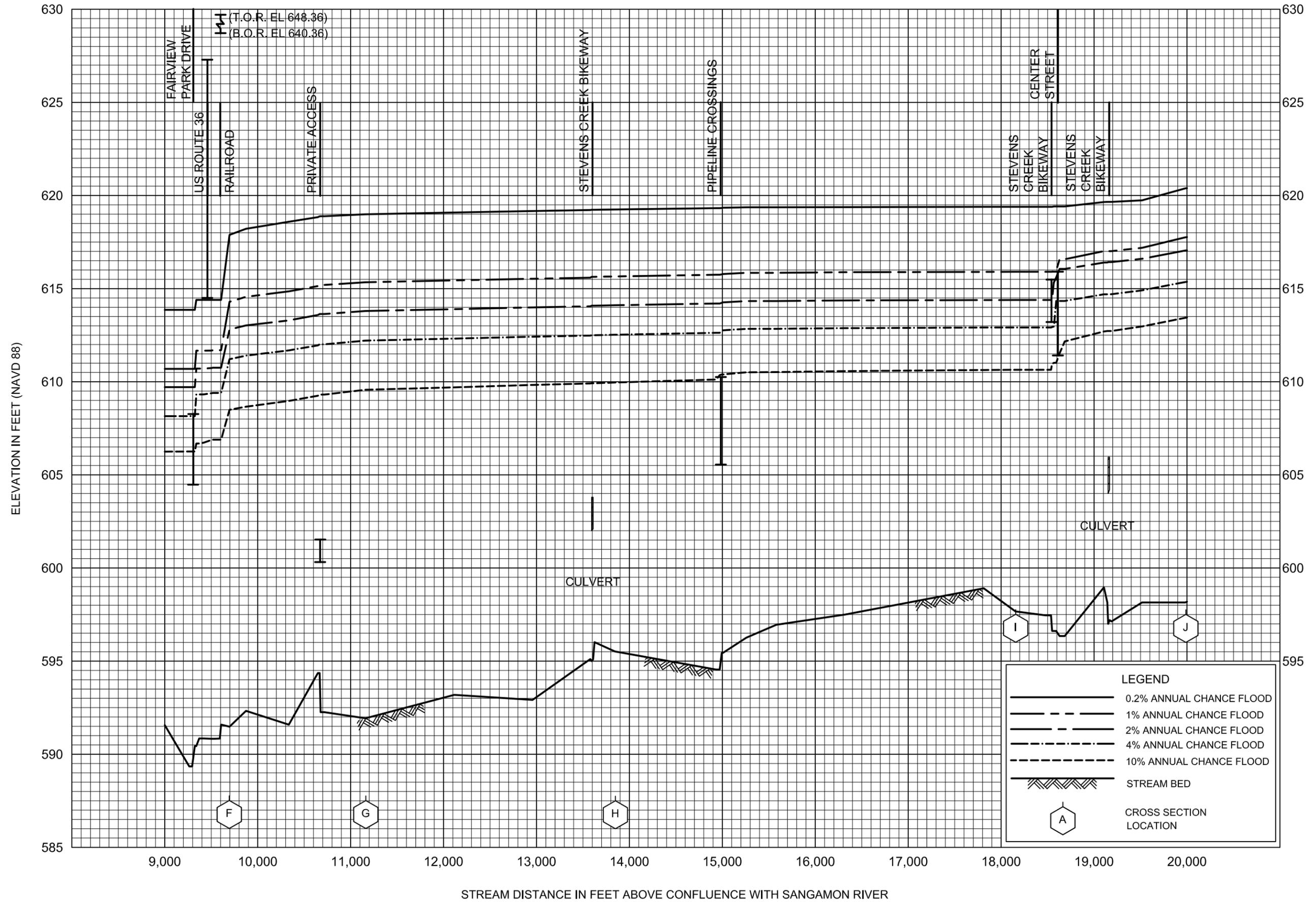


FLOOD PROFILES

STEVENS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

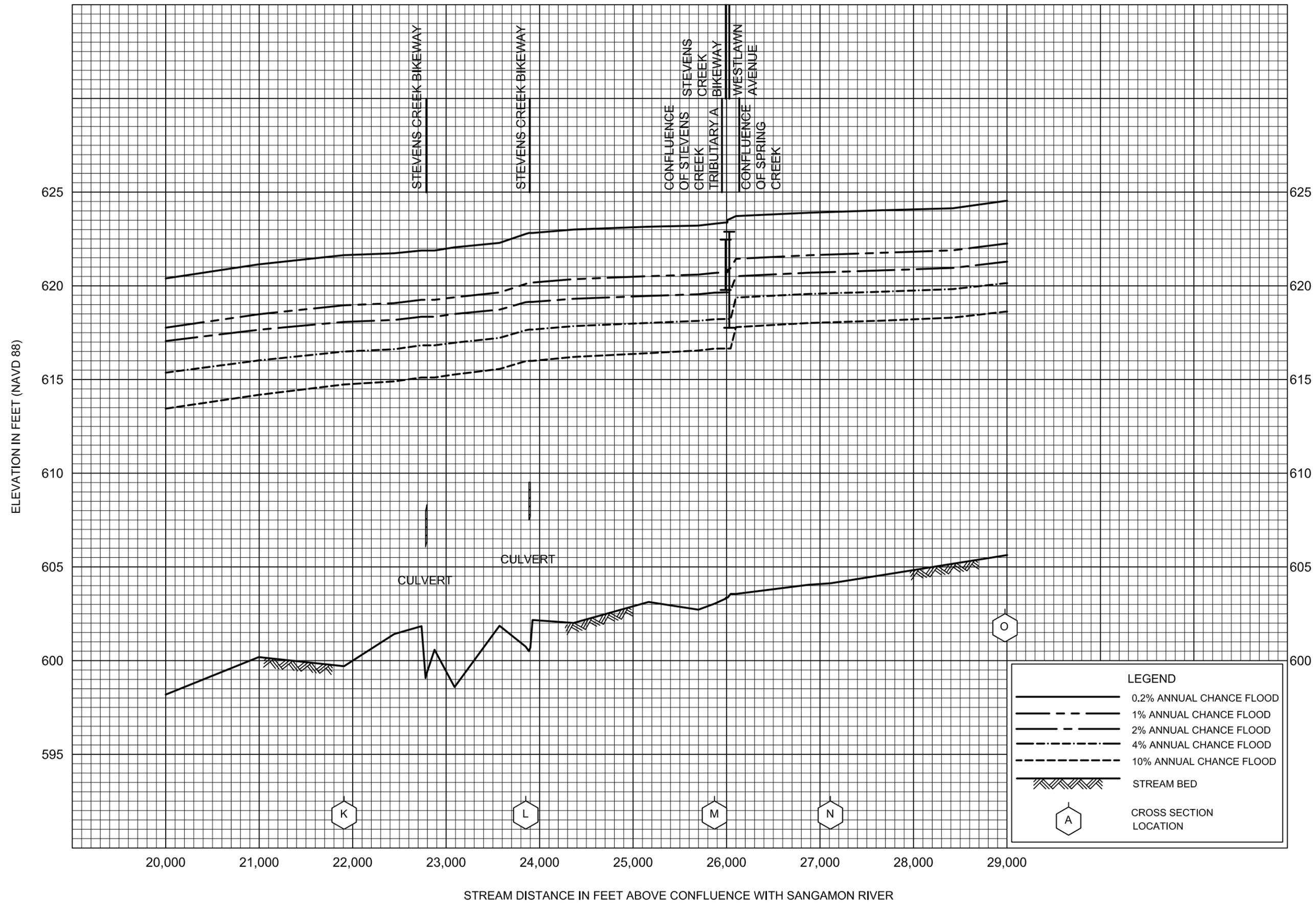


FLOOD PROFILES

STEVENS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

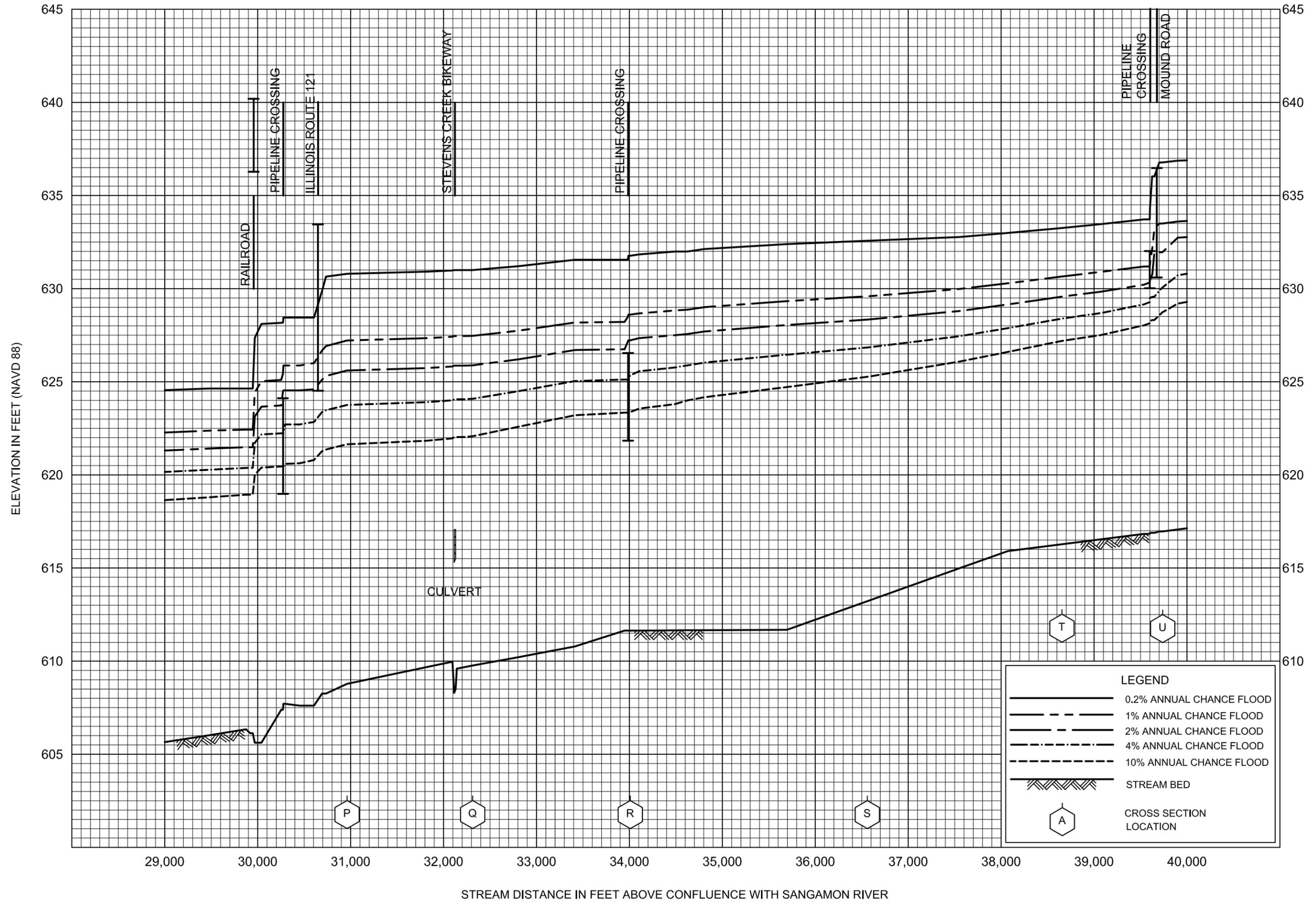


FLOOD PROFILES

STEVENS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

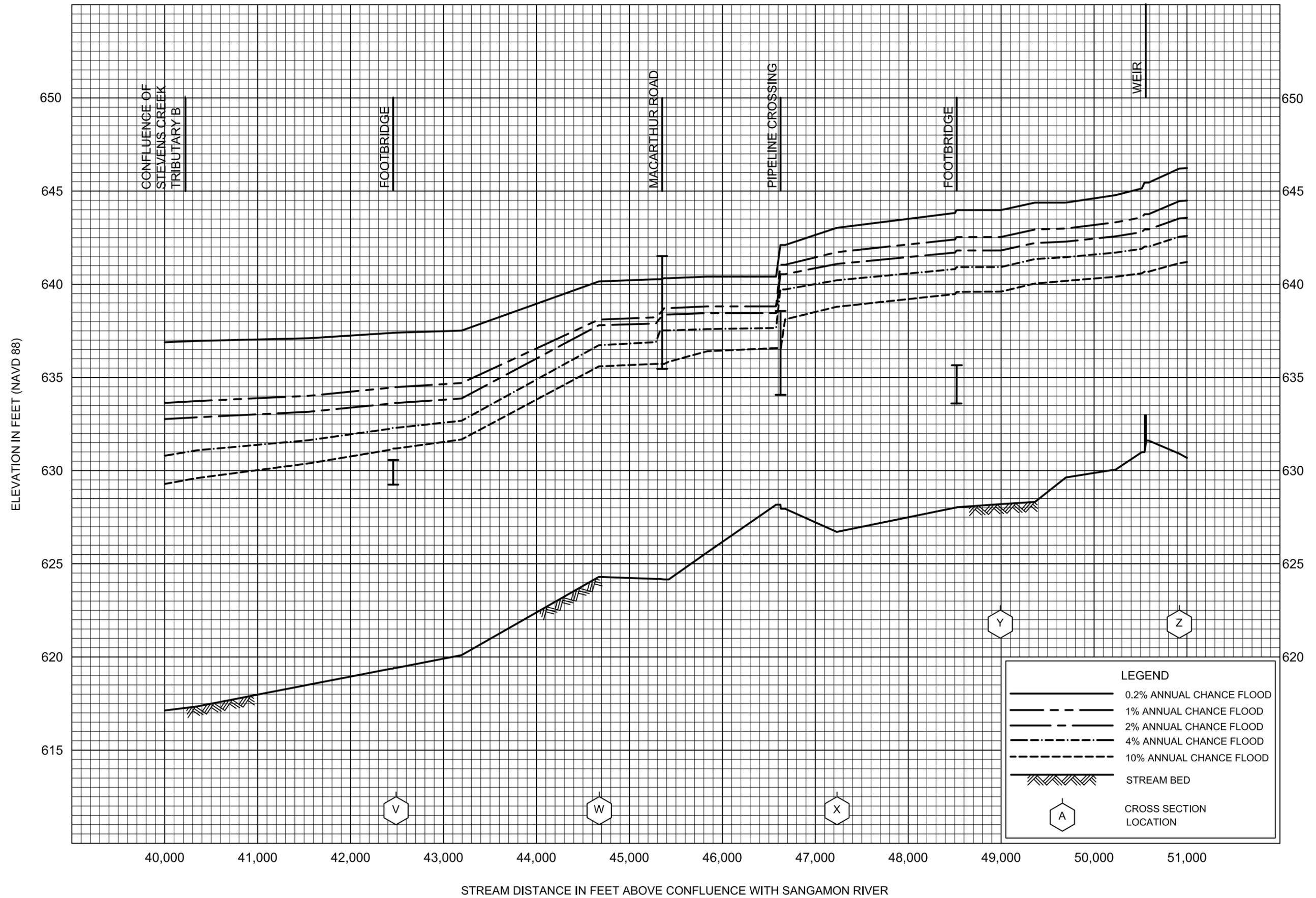


FLOOD PROFILES

STEVENS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

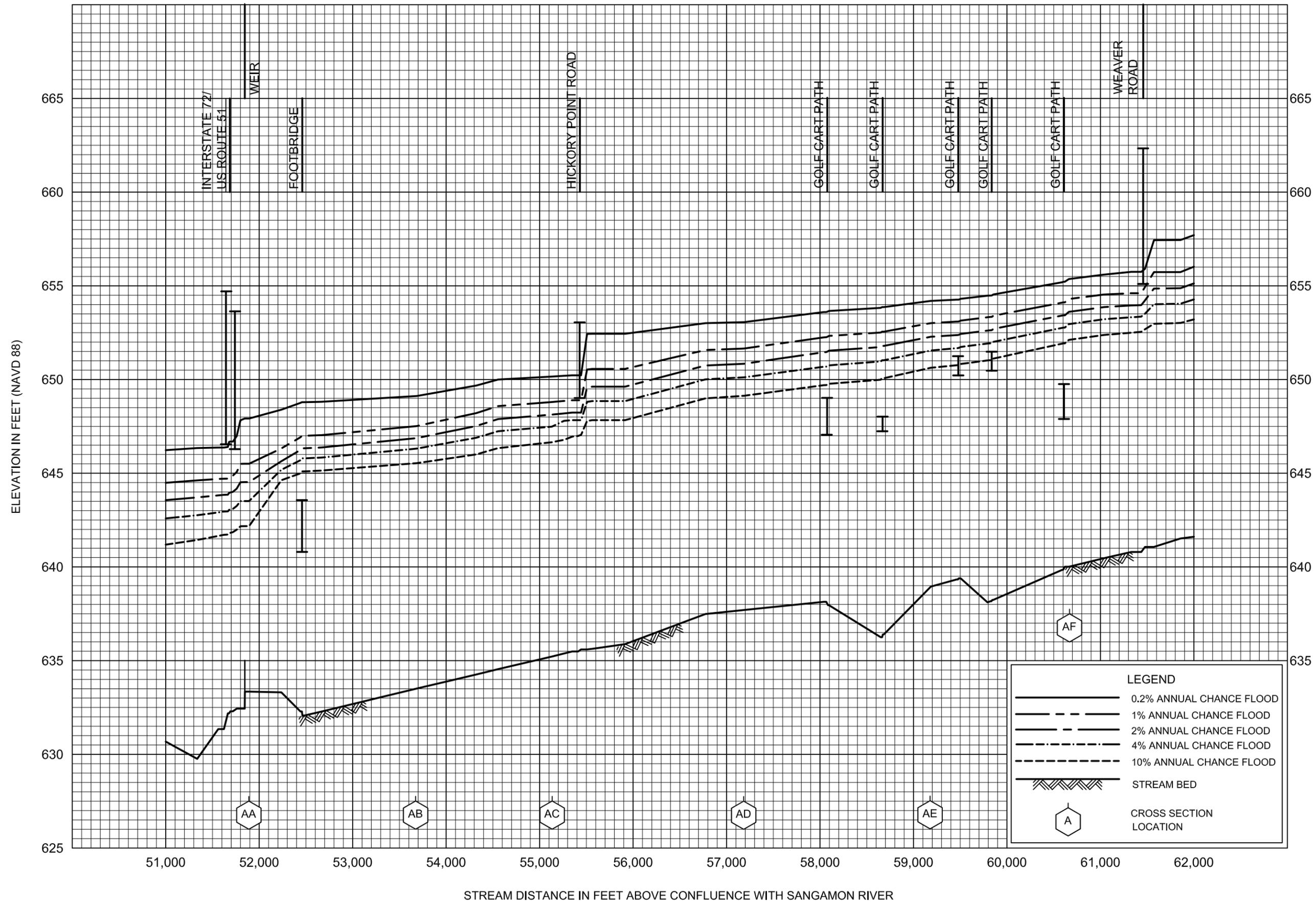


FLOOD PROFILES

STEVENS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

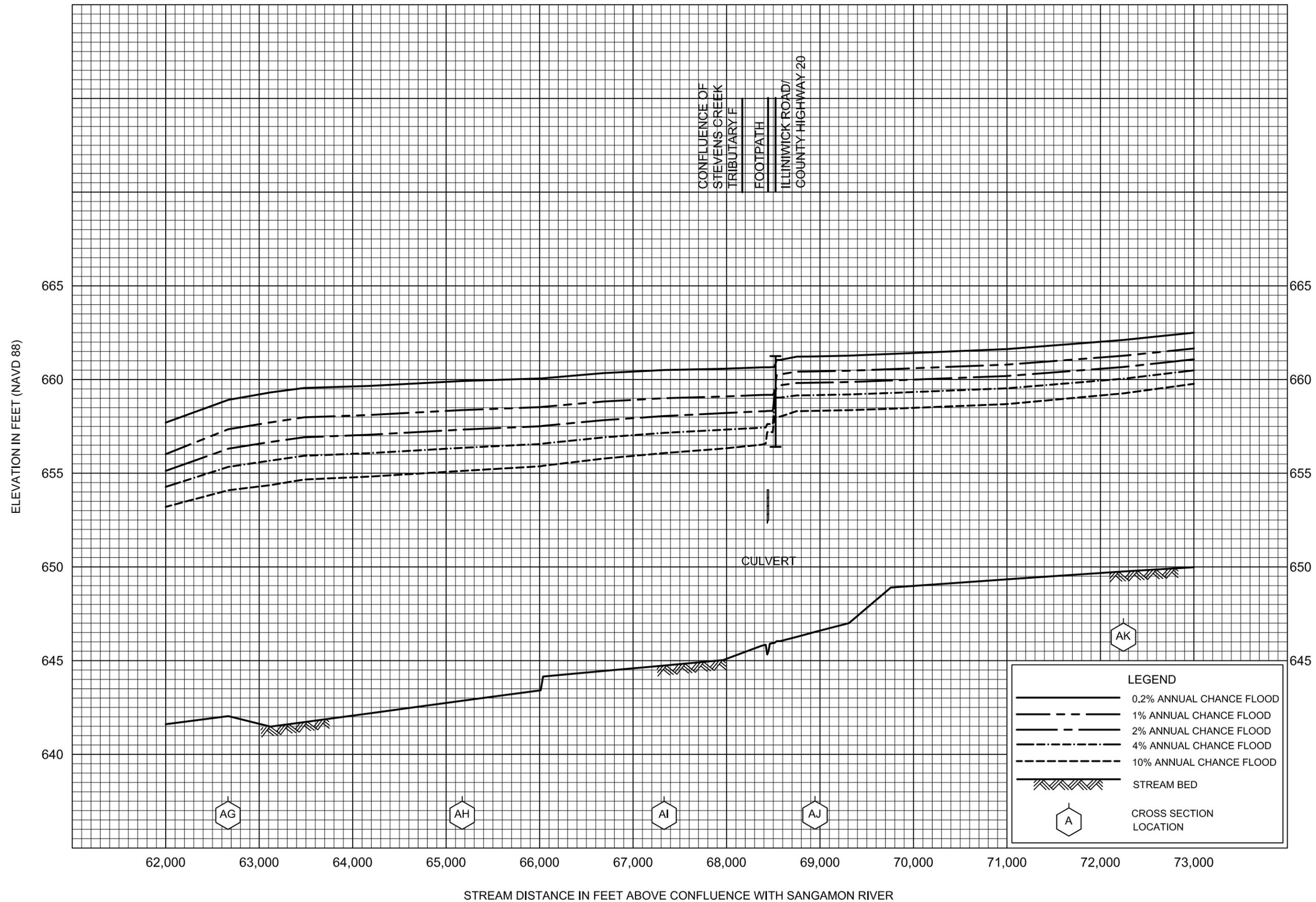


**FLOOD PROFILES**

STEVENS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

**MACON COUNTY, IL**  
AND INCORPORATED AREAS

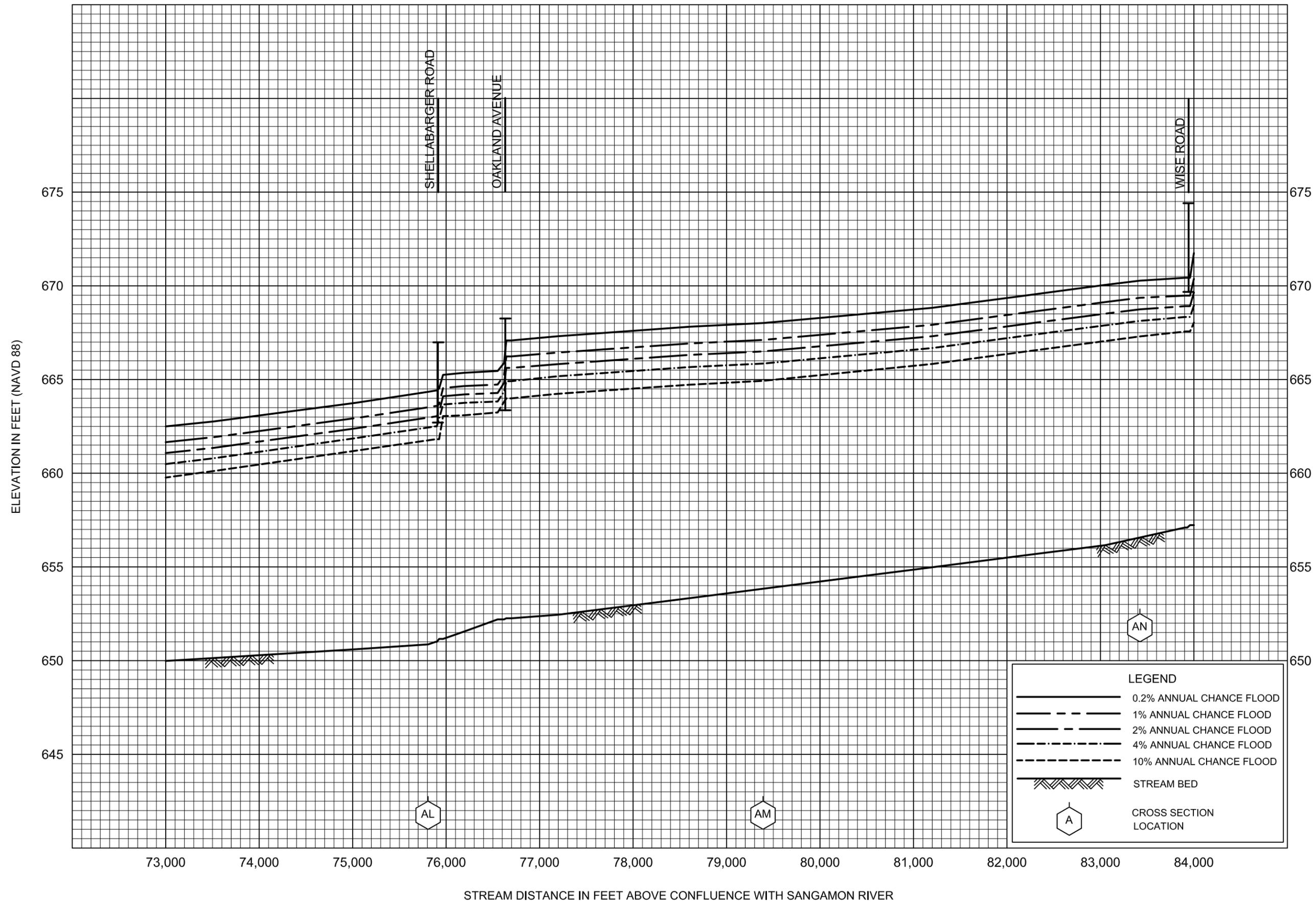


FLOOD PROFILES

STEVEN'S CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

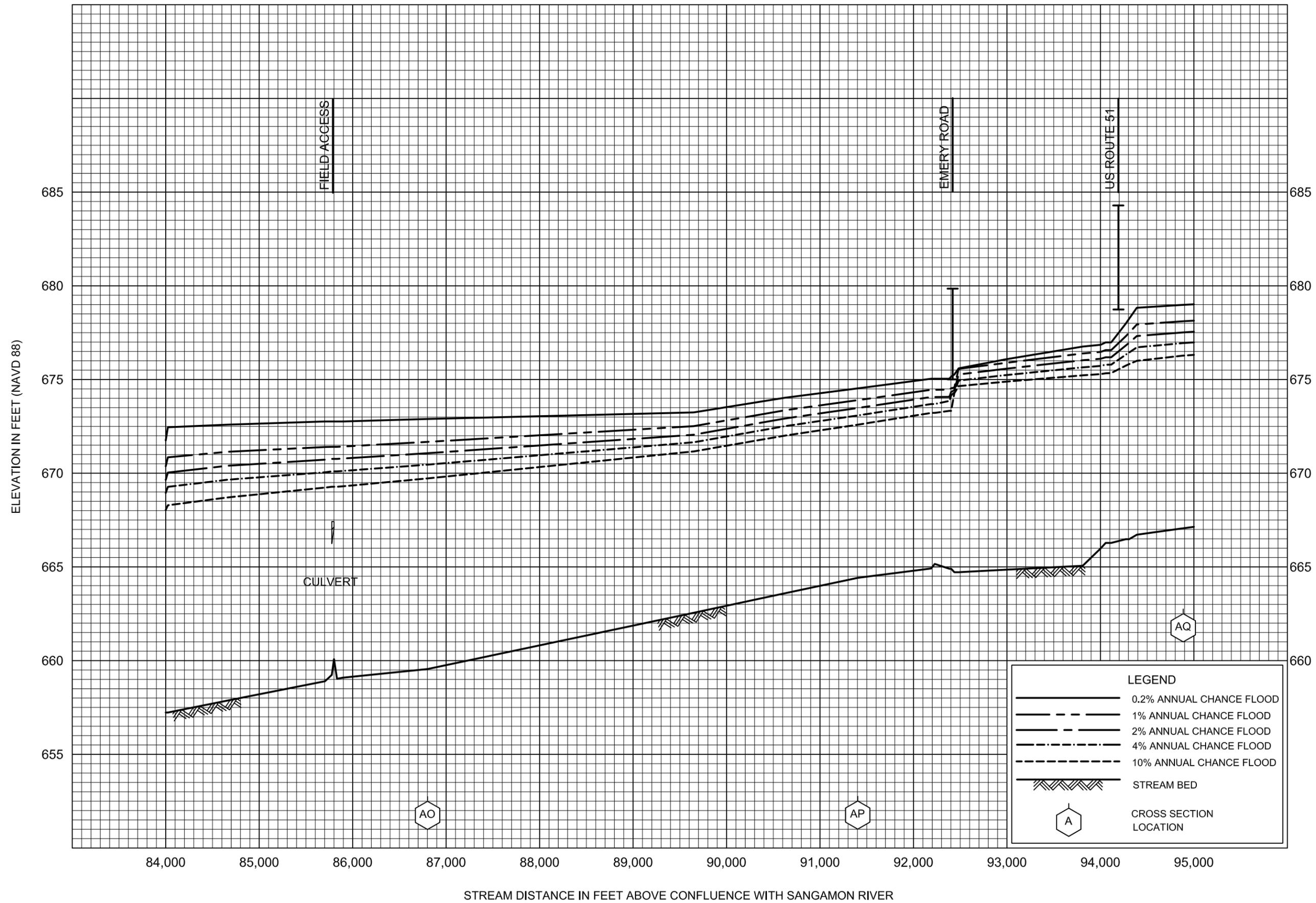


FLOOD PROFILES

STEVENS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

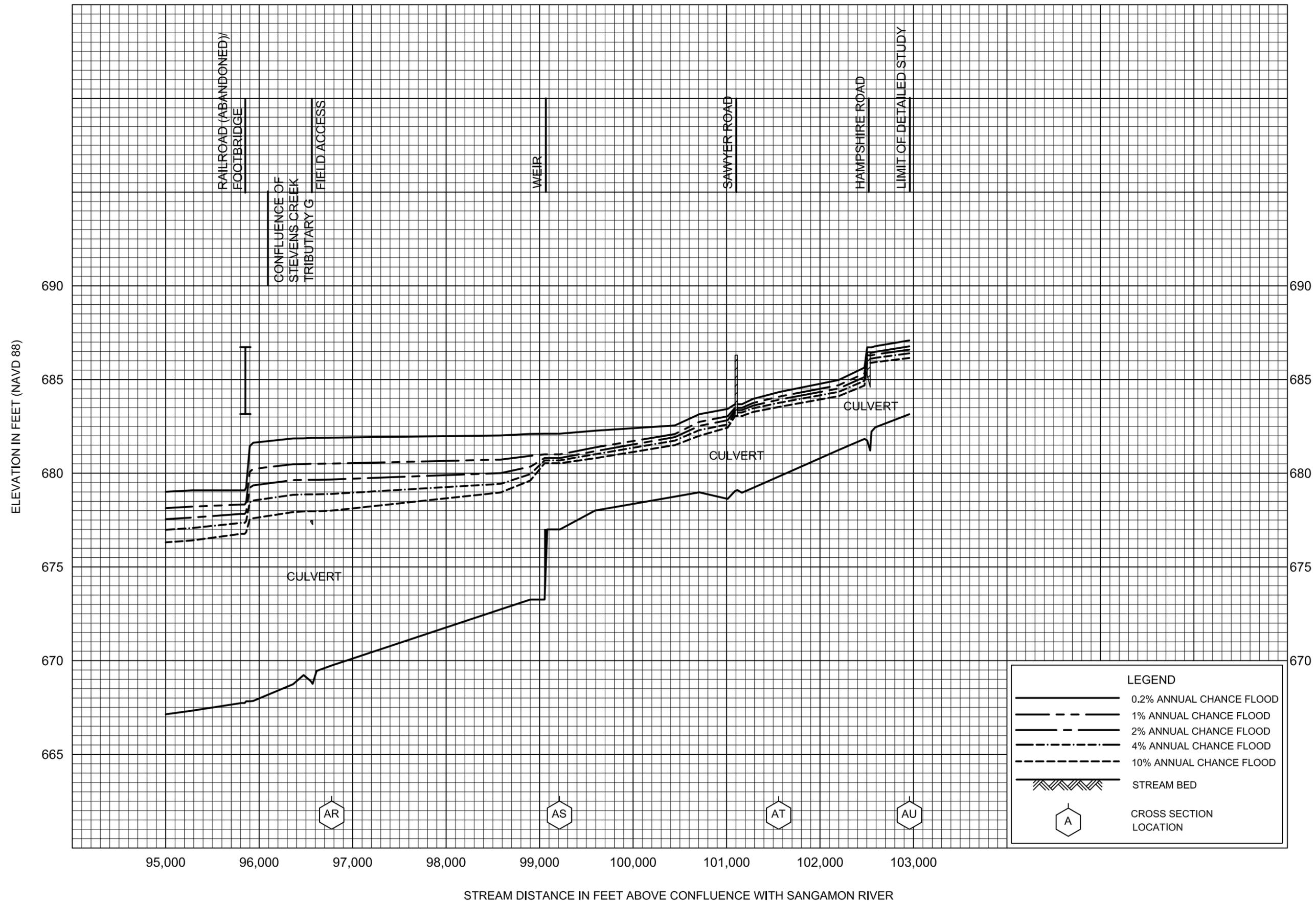


FLOOD PROFILES

STEVENS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

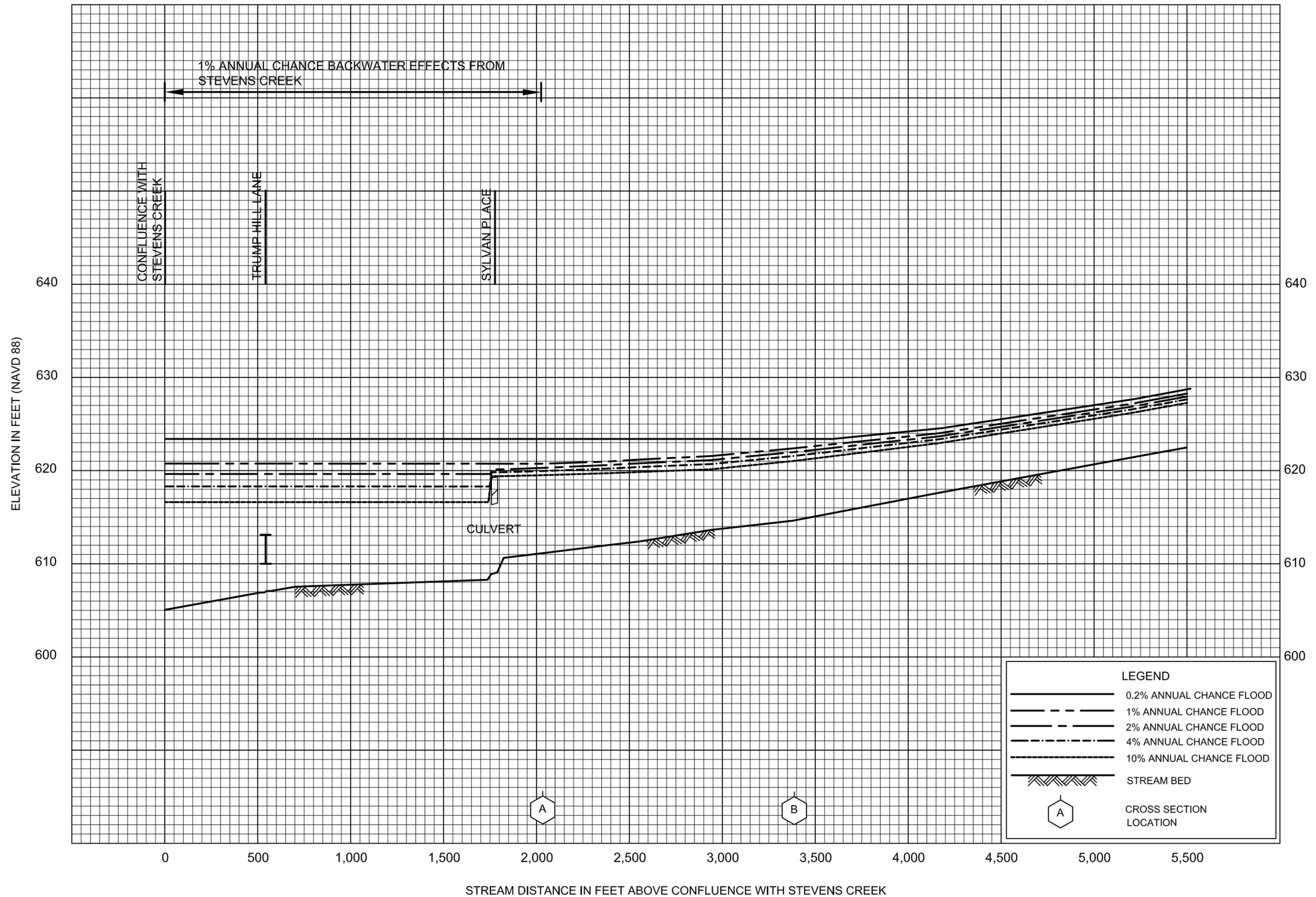
MACON COUNTY, IL  
AND INCORPORATED AREAS



FLOOD PROFILES

STEVENS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**MACON COUNTY, IL**  
 AND INCORPORATED AREAS



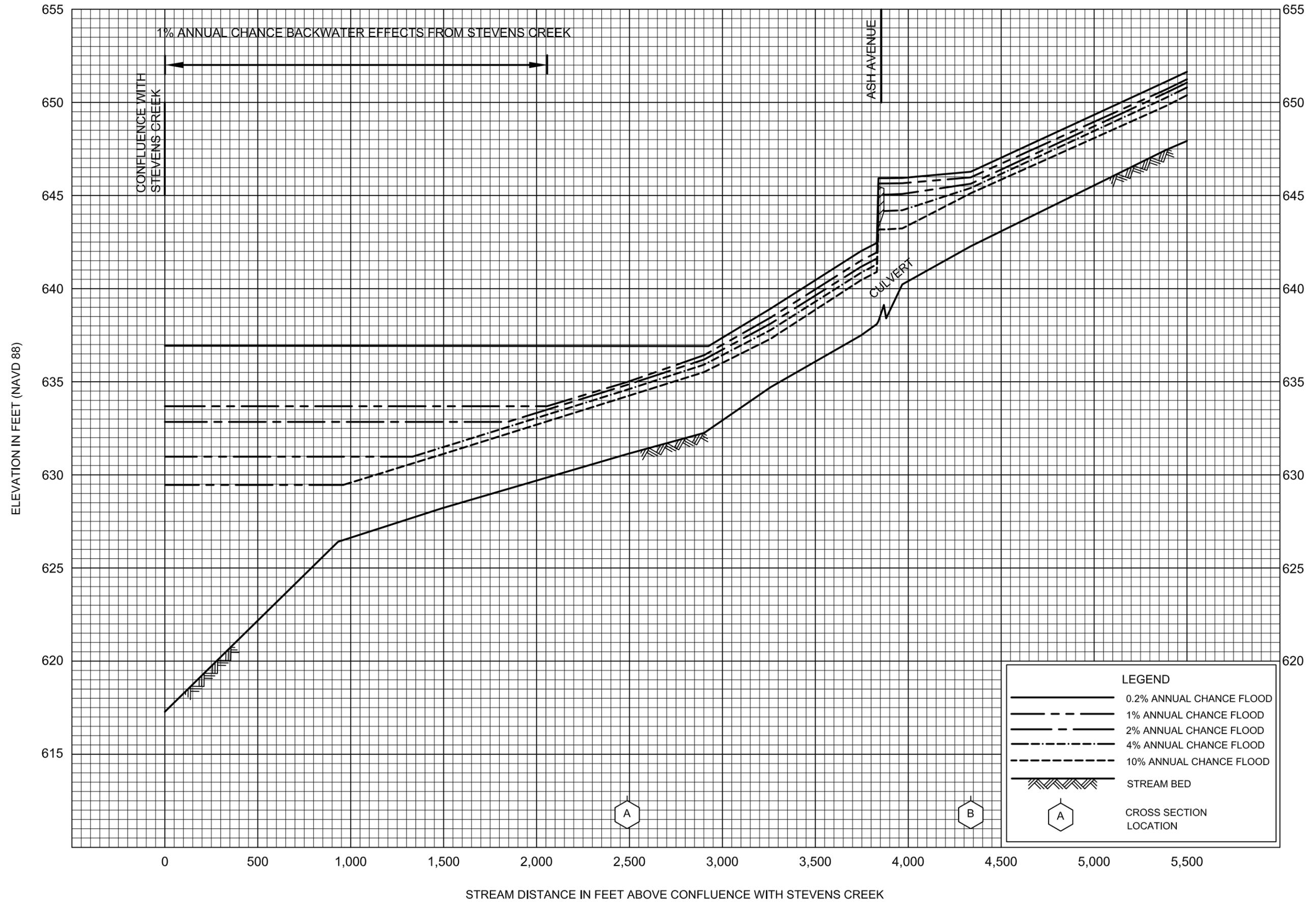
FLOOD PROFILES

STEVENS CREEK TRIBUTARY A

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS



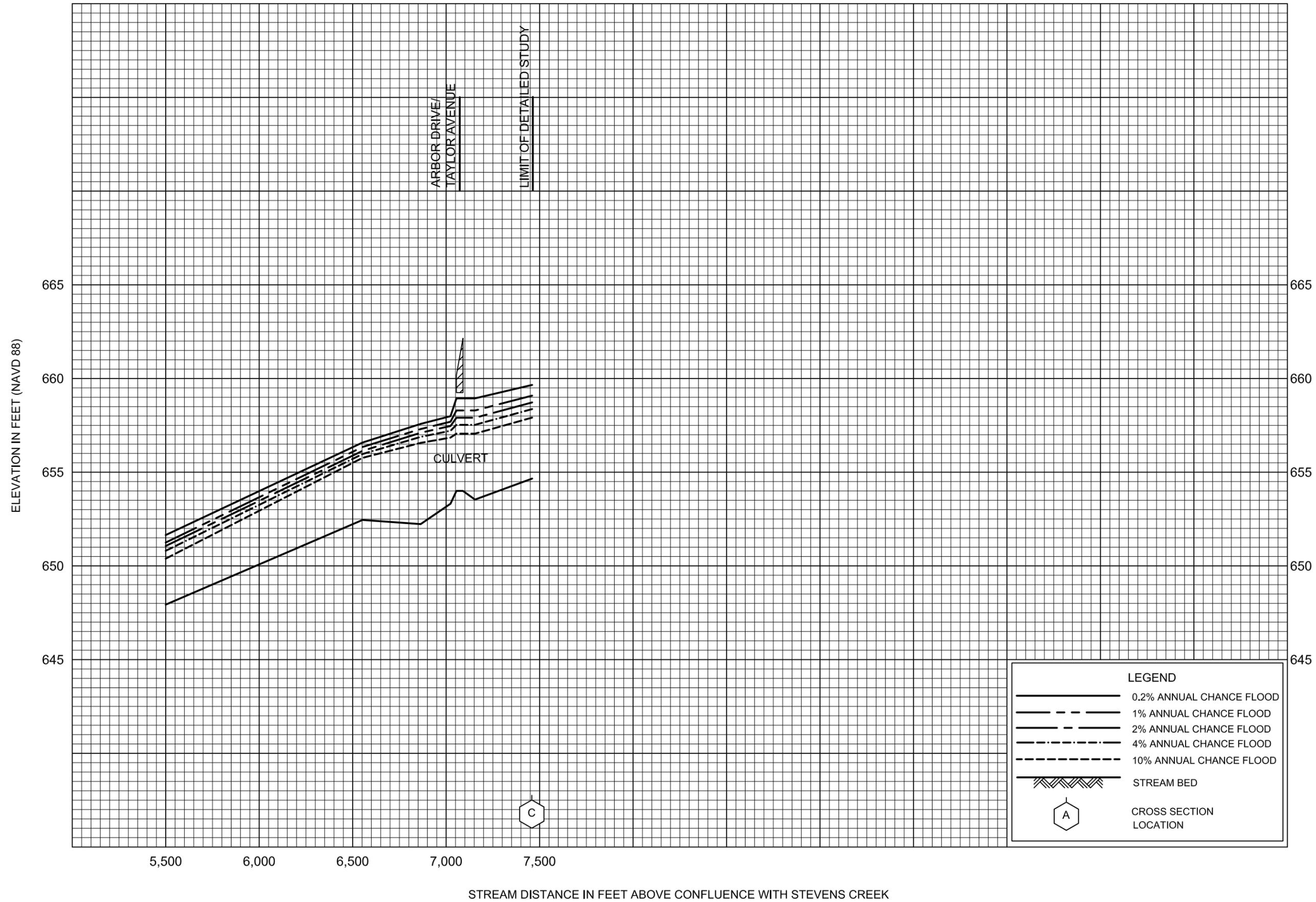


FLOOD PROFILES

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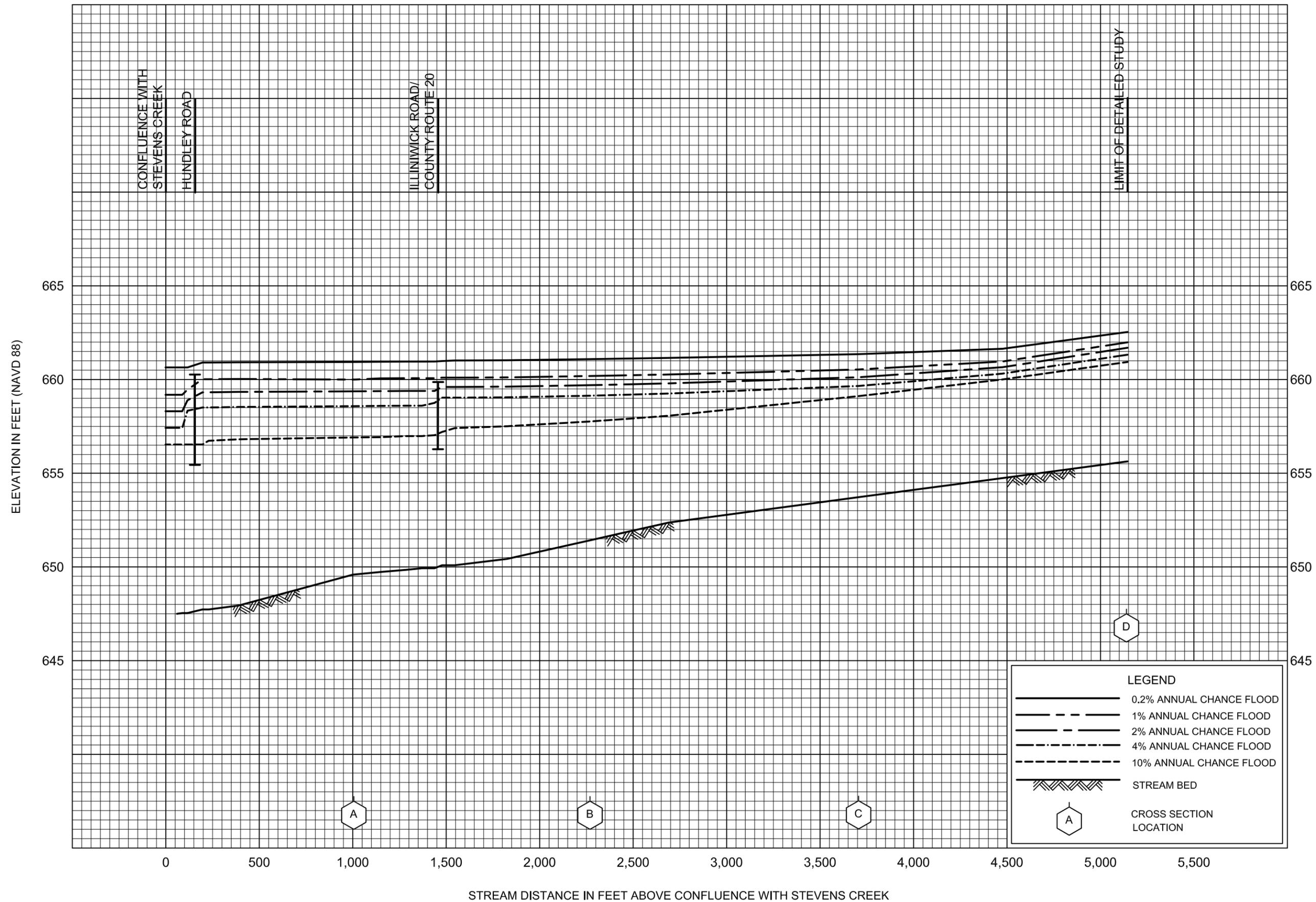


FLOOD PROFILES

STEVENS CREEK TRIBUTARY B

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MACON COUNTY, IL  
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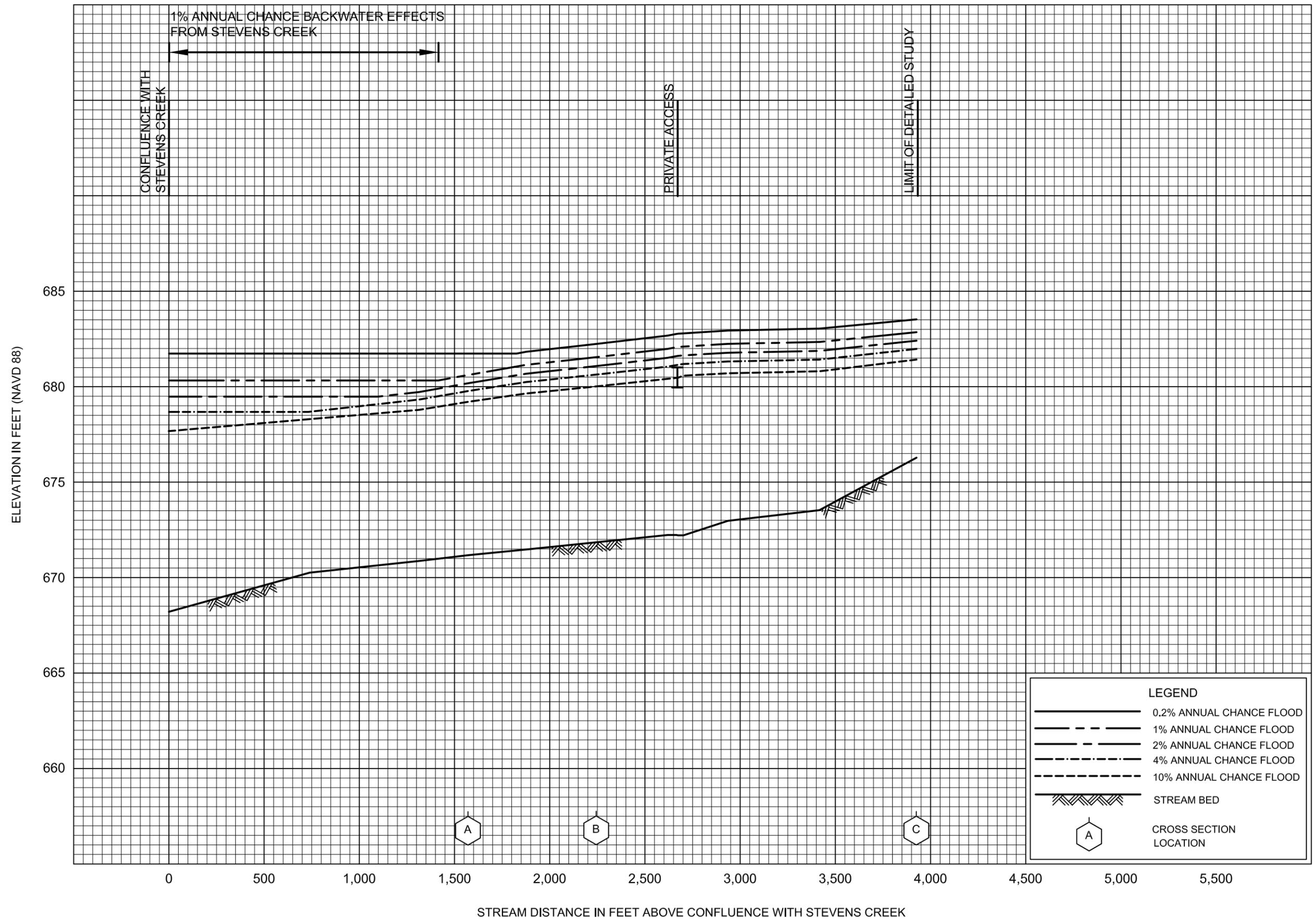


**FLOOD PROFILES**

**STEVENS CREEK TRIBUTARY F**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**MACON COUNTY, IL**  
UNINCORPORATED AREAS

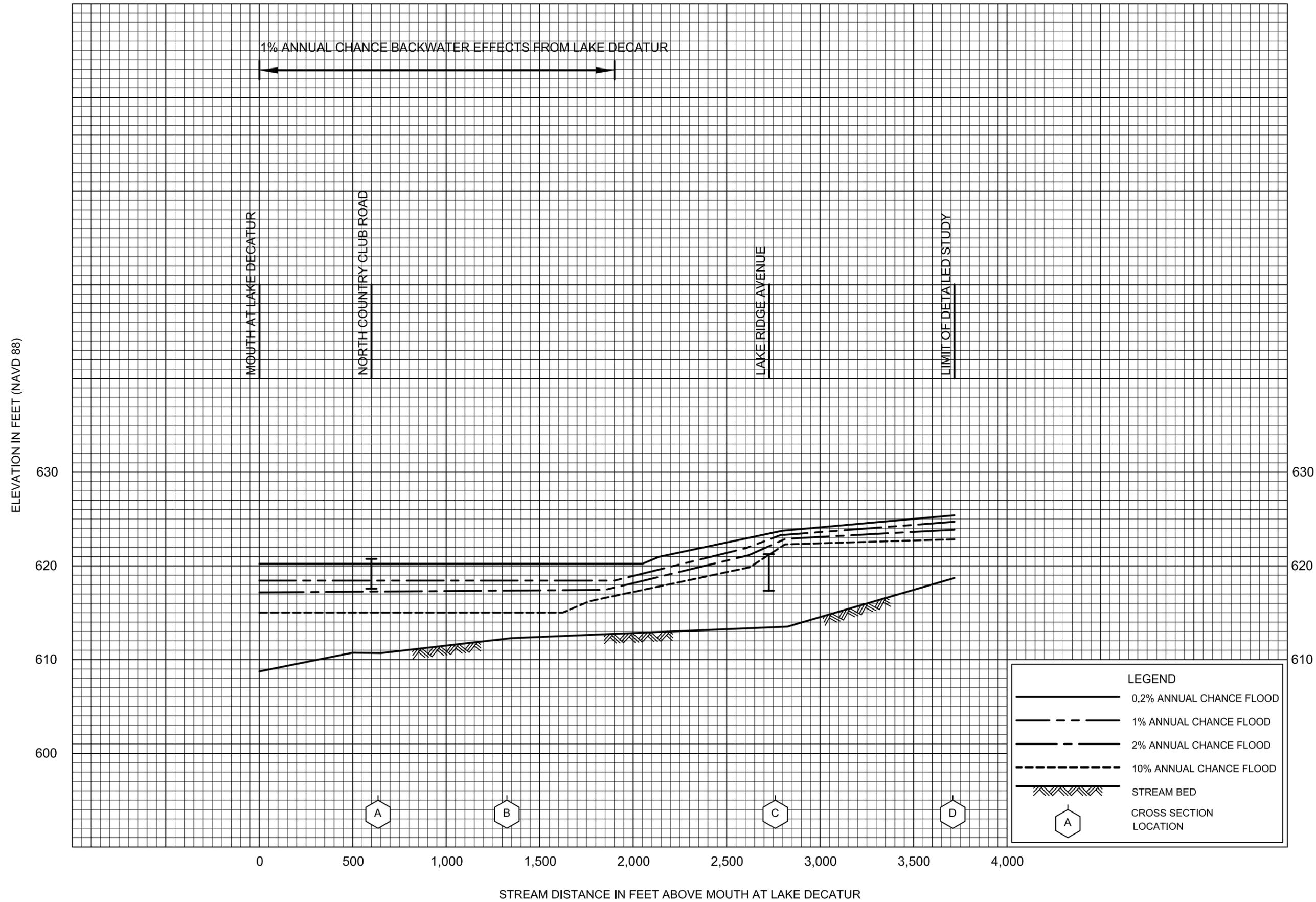


**FLOOD PROFILES**

**STEVENS CREEK TRIBUTARY G**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**MACON COUNTY, IL**  
AND INCORPORATED AREAS

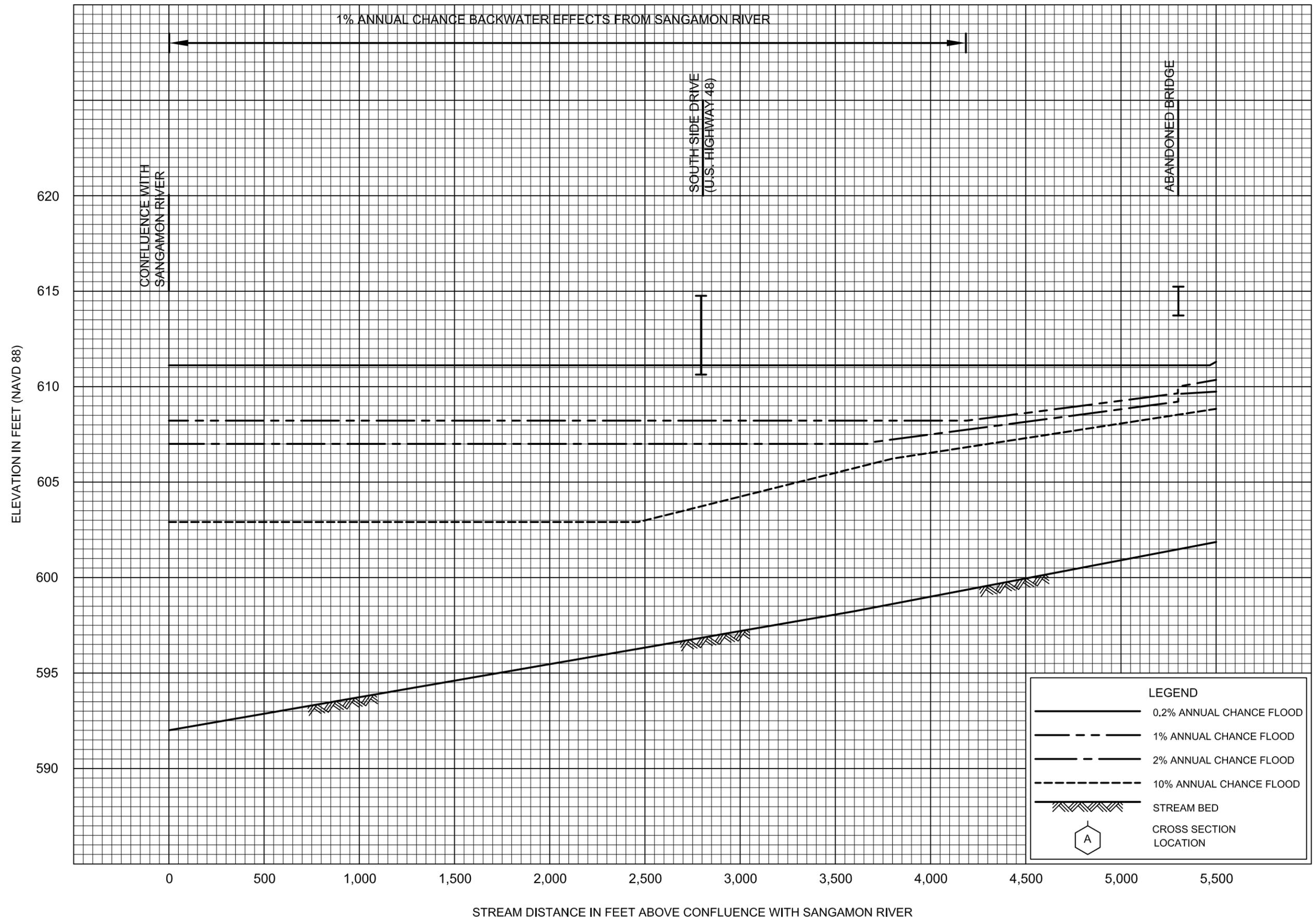


FLOOD PROFILES

TRIBUTARY 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS



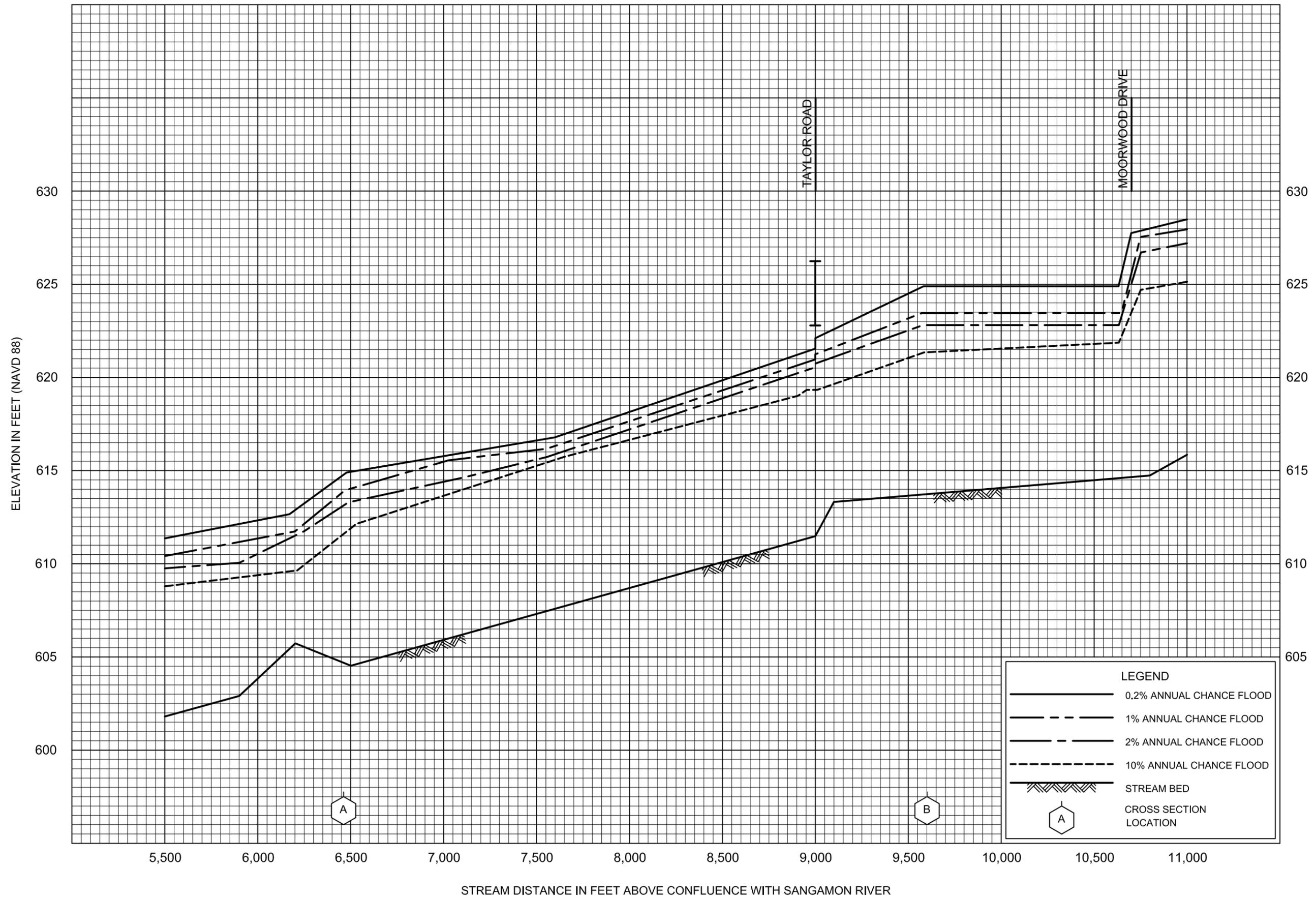
FLOOD PROFILES

WARD BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

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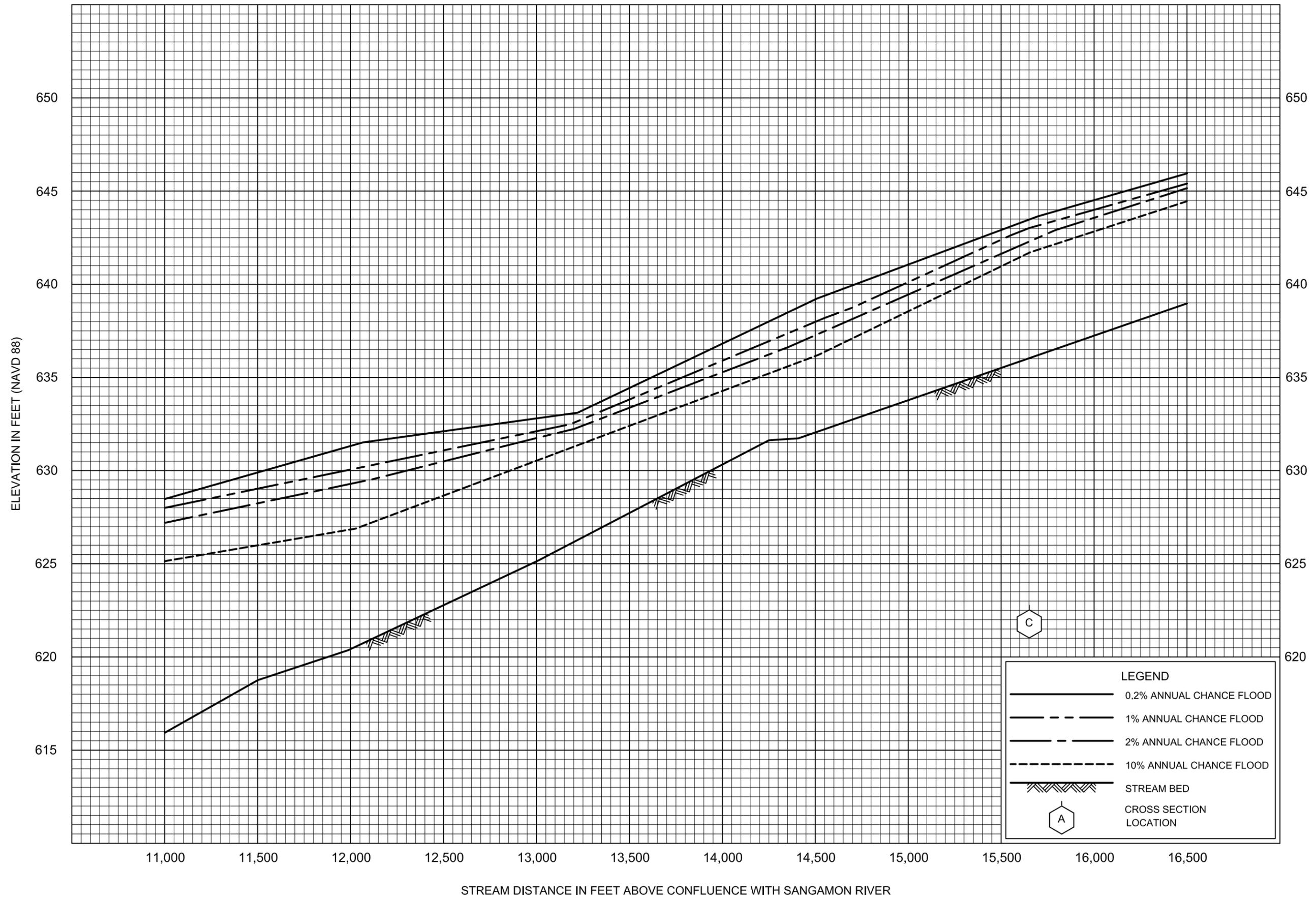


FLOOD PROFILES

WARD BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

MACON COUNTY, IL  
AND INCORPORATED AREAS

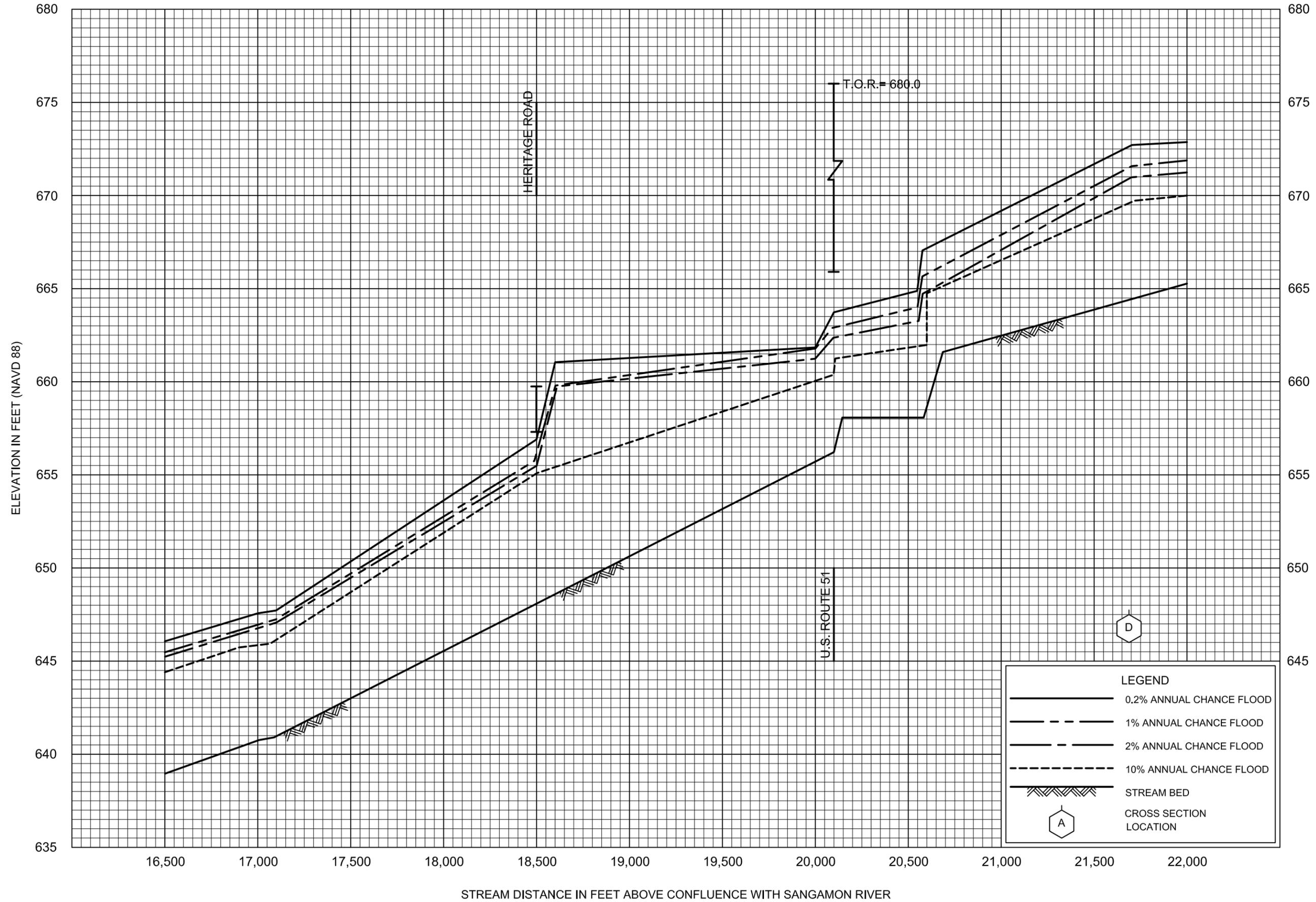


FLOOD PROFILES

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MACON COUNTY, IL  
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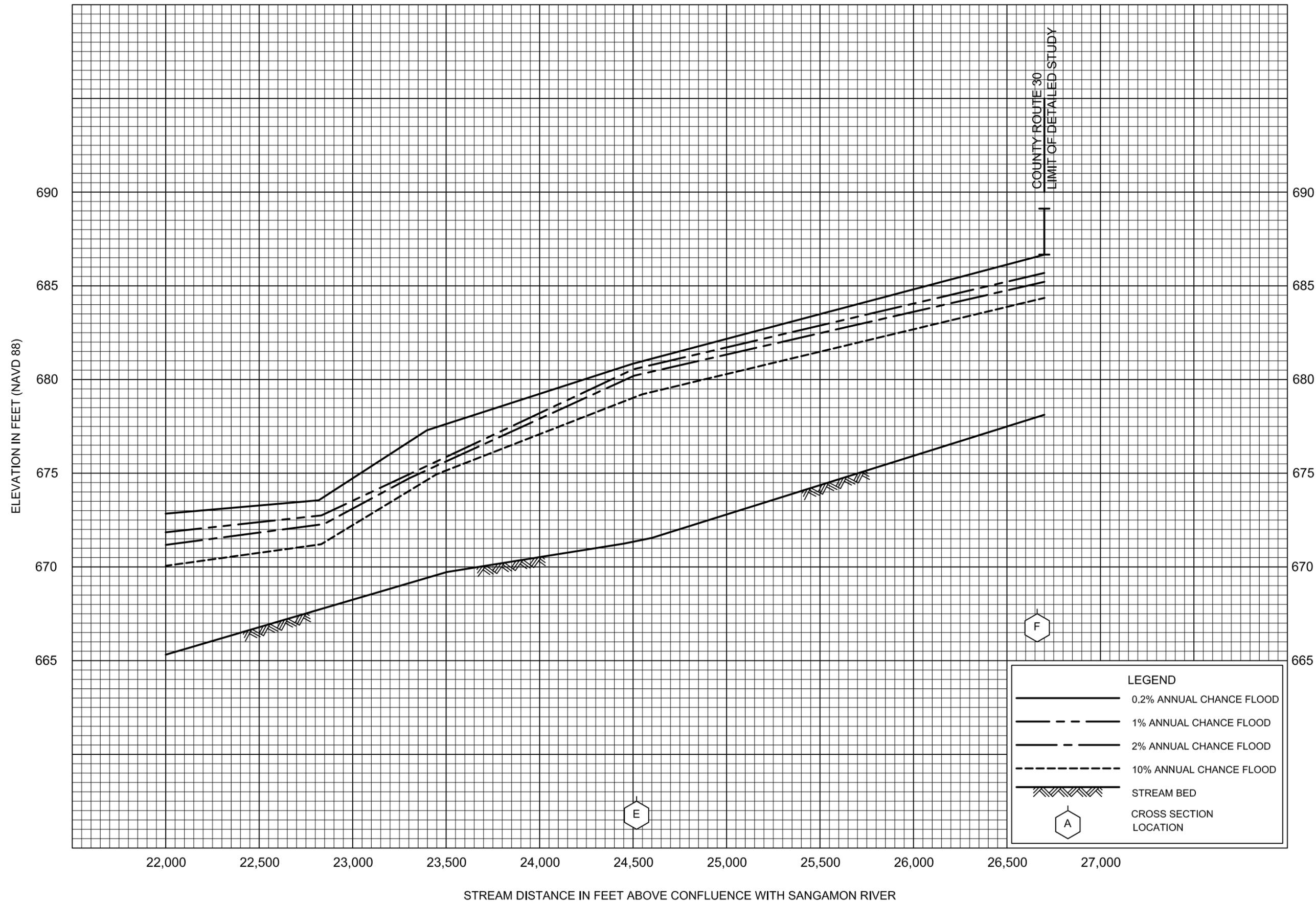


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