

# FLOOD INSURANCE STUDY

## FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 1 OF 1



## HALL COUNTY, GEORGIA AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
BRASELTON, TOWN OF	130343
BUFORD, CITY OF	130323
CLERMONT, TOWN OF	130332
FLOWERY BRANCH, CITY OF	130333
GAINESVILLE, CITY OF	130263
GILLSVILLE, CITY OF	130561
HALL COUNTY, UNINCORPORATED AREAS	130466
LULA, CITY OF	130562
OAKWOOD, CITY OF	130334
REST HAVEN, CITY OF	130327

**PRELIMINARY**

**4/28/2016**



# FEMA

**REVISED:**

FLOOD INSURANCE STUDY NUMBER  
**13139CV000B**

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Flood Profiles	<u>Panel</u>
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Balus Creek Tributary No. 1	04 P
Caney Fork Creek	05-08 P
Chattahoochee River	09-12 P
Deaton Creek	13-14 P
Duncan Creek	15-16 P
East Fork Little River	17-24 P
Flat Creek	25-29 P
Flat Creek Tributary No. 1	30 P
Flat Creek Tributary No. 2	31 P
Limestone Creek	32-33 P
Limestone Creek Tributary	34 P
Lollis Creek	35-36 P
Mitchell Creek	37-38 P
Mud Creek	39-40 P
Mulberry Creek Tributary	41-42 P
Mulberry River/Mulberry Creek	43-47 P
Sherwood Creek	48-50 P
Suwanee Creek	51 P
Suwanee Creek Tributary No. 4	52 P
Upper Mitchell Creek	53 P
Wahoo Creek	54-56 P
Wahoo Creek Tributary	57 P
Walnut Creek	58-61 P
West Fork Little River	62-65 P

### **Published Separately**

Flood Insurance Rate Map (FIRM)

# FLOOD INSURANCE STUDY REPORT HALL COUNTY, GEORGIA AND INCORPORATED AREAS

## SECTION 1.0 – INTRODUCTION

### 1.1 The National Flood Insurance Program

The National Flood Insurance Program (NFIP) is a voluntary Federal program that enables property owners in participating communities to purchase insurance protection against losses from flooding. This insurance is designed to provide an insurance alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents caused by floods.

For decades, the national response to flood disasters was generally limited to constructing flood-control works such as dams, levees, sea-walls, and the like, and providing disaster relief to flood victims. This approach did not reduce losses nor did it discourage unwise development. In some instances, it may have actually encouraged additional development. To compound the problem, the public generally could not buy flood coverage from insurance companies, and building techniques to reduce flood damage were often overlooked.

In the face of mounting flood losses and escalating costs of disaster relief to the general taxpayers, the U.S. Congress created the NFIP. The intent was to reduce future flood damage through community floodplain management ordinances, and provide protection for property owners against potential losses through an insurance mechanism that requires a premium to be paid for the protection.

The U.S. Congress established the NFIP on August 1, 1968, with the passage of the National Flood Insurance Act of 1968. The NFIP was broadened and modified with the passage of the Flood Disaster Protection Act of 1973 and other legislative measures. It was further modified by the National Flood Insurance Reform Act of 1994 and the Flood Insurance Reform Act of 2004. The NFIP is administered by the Federal Emergency Management Agency (FEMA), which is a component of the Department of Homeland Security (DHS).

Participation in the NFIP is based on an agreement between local communities and the Federal Government. If a community adopts and enforces floodplain management regulations to reduce future flood risks to new construction and substantially improved structures in Special Flood Hazard Areas (SFHAs), the Federal Government will make flood insurance available within the community as a financial protection against flood losses. The community's floodplain management regulations must meet or exceed criteria established in accordance with Title 44 Code of Federal Regulations (CFR) Part 60.3, *Criteria for Land Management and Use*.

SFHAs are delineated on the community's Flood Insurance Rate Maps (FIRMs). Under the NFIP, buildings that were built before the flood hazard was identified on the community's FIRMs are generally referred to as "Pre-FIRM" buildings. When the NFIP was created, the U.S. Congress recognized that insurance for Pre-FIRM buildings would be prohibitively expensive if the premiums were not subsidized by the Federal Government. Congress also recognized that most of these floodprone buildings were built by individuals who did not have sufficient knowledge of the flood hazard to make informed decisions. The NFIP requires that full actuarial rates reflecting the complete flood risk be charged on all buildings constructed or substantially improved on or after

the effective date of the initial FIRM for the community or after December 31, 1974, whichever is later. These buildings are generally referred to as “Post-FIRM” buildings.

## **1.2 Purpose of this Flood Insurance Study Report**

This Flood Insurance Study (FIS) report revises and updates information on the existence and severity of flood hazards for the study area. The studies described in this report developed flood hazard data that will be used to establish actuarial flood insurance rates and to assist communities in efforts to implement sound floodplain management.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive than the minimum Federal requirements. Contact your State NFIP Coordinator to ensure that any higher State standards are included in the community’s regulations.

## **1.3 Jurisdictions Included in the Flood Insurance Study Project**

This FIS Report covers the entire geographic area of Hall County, Georgia and Incorporated Areas.

The jurisdictions that are included in this project area, along with the Community Identification Number (CID) for each community and the 8-digit Hydrologic Unit Codes (HUC-8) sub-basins affecting each, are shown in Table 1. The Flood Insurance Rate Map (FIRM) panel numbers that affect each community are listed. If the flood hazard data for the community is not included in this FIS Report, the location of that data is identified.

The location of flood hazard data for participating communities in multiple jurisdictions is also indicated in the table.

**Table 1: Listing of NFIP Jurisdictions**

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Braselton, Town of	130343	03070101	13139C0314F, 13139C0357F 13139C0376F, 13139C0377F	
Buford, City of	130323	03130001	13139C0288G, 13139C0289G 13139C0290G	
Clermont, Town of	130332	03130001	13139C0081G, 13139C0083G 13139C0085G, 13139C0105G	
Flowery Branch, City of	130333	03130001 03070101	13139C0280G, 13139C0283G 13139C0284G, 13139C0290G 13139C0291G, 13139C0292F 13139C0293G, 13139C0294F	
Gainesville, City of	130263	03130001 03070101	13139C0169G, 13139C0170G 13139C0175G, 13139C0179G 13139C0180G, 13139C0183G 13139C0185G, 13139C0186G 13139C0187G, 13139C0188G 13139C0189G, 13139C0195G 13139C0282G, 13139C0301G 13139C0302F, 13139C0310F	
Gillsville, City of	130561	03070101	13139C0225F, 13139C0250F <sup>1</sup>	

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Hall County, Unincorporated Areas	130466	03130001 03070101	13139C0025G, 13139C0040G 13139C0045G, 13139C0059G 13139C0060G, 13139C0067G 13139C0070G, 13139C0075G 13139C0076G, 13139C0077G 13139C0078G, 13139C0079G 13139C0081G, 13139C0083G 13139C0085G, 13139C0086G 13139C0087G, 13139C0088G 13139C0089G, 13139C0091G 13139C0093G, 13139C0095G 13139C0105G, 13139C0110G 13139C0125G, 13139C0150F <sup>1</sup> 13139C0169G, 13139C0170G 13139C0175G, 13139C0179G 13139C0180G, 13139C0183G 13139C0185G, 13139C0186G 13139C0187G, 13139C0188G 13139C0189G, 13139C0195G 13139C0225F, 13139C0250F <sup>1</sup> 13139C0275G, 13139C0280G 13139C0281G, 13139C0282G 13139C0283G, 13139C0284G 13139C0288G, 13139C0289G 13139C0290G, 13139C0291G 13139C0292F, 13139C0293G 13139C0294F, 13139C0301G 13139C0302F, 13139C0303F 13139C0304F, 13139C0308F 13139C0310F, 13139C0311F 13139C0312F, 13139C0313F 13139C0314F, 13139C0316F 13139C0317F, 13139C0318F 13139C0350F, 13139C0352F 13139C0356G, 13139C0357F 13139C0376F, 13139C0377F	
Lula, City of	130562	03130001	13139C0125G, 13139C0225F	

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Oakwood, City of	130334	03130001	13139C0169G, 13139C0188G 13139C0281G, 13139C0282G 13139C0283G, 13139C0284G 13139C0301G, 13139C0303F	
Rest Haven, City of	130327	03130001	13139C0288G, 13139C0289G	

<sup>1</sup>Panel Not Printed

#### 1.4 Considerations for using this Flood Insurance Study Report

The NFIP encourages State and local governments to implement sound floodplain management programs. To assist in this endeavor, 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% annual chance flood elevation is also referred to as the Base Flood Elevation (BFE)); delineations of the 1% annual chance and 0.2% annual chance floodplains; and 1% annual chance floodway. This information is presented on the FIRM and/or in many components of the FIS Report, including Flood Profiles, Floodway Data tables, Summary of Non-Coastal Stillwater Elevations tables, and Coastal Transect Parameters tables (not all components may be provided for a specific FIS).

This section presents important considerations for using the information contained in this FIS Report and the FIRM, including changes in format and content. Figures 1, 2, and 3 present information that applies to using the FIRM with the FIS Report.

- Part or all of this FIS Report may be revised and republished at any time. In addition, part of this FIS Report may be revised by a Letter of Map Revision (LOMR), which does not involve republication or redistribution of the FIS Report. Refer to Section 6.5 of this FIS Report for information about the process to revise the FIS Report and/or FIRM.

It is, therefore, the responsibility of the user to consult with community officials by contacting the community repository to obtain the most current FIS Report components. Communities participating in the NFIP have established repositories of flood hazard data for floodplain management and flood insurance purposes. Community map repository addresses are provided in Table 31, “Map Repositories,” within this FIS Report.

- New FIS Reports are frequently developed for multiple communities, such as entire counties. A countywide FIS Report incorporates previous FIS Reports for individual communities and the unincorporated area of the county (if not jurisdictional) into a single document and supersedes those documents for the purposes of the NFIP.

The initial Countywide FIS Report for Hall County became effective on September 29, 2006. Refer to Table 28 for information about subsequent revisions to the FIRMs.

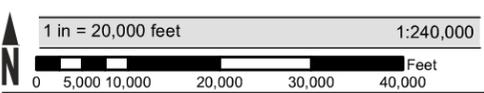
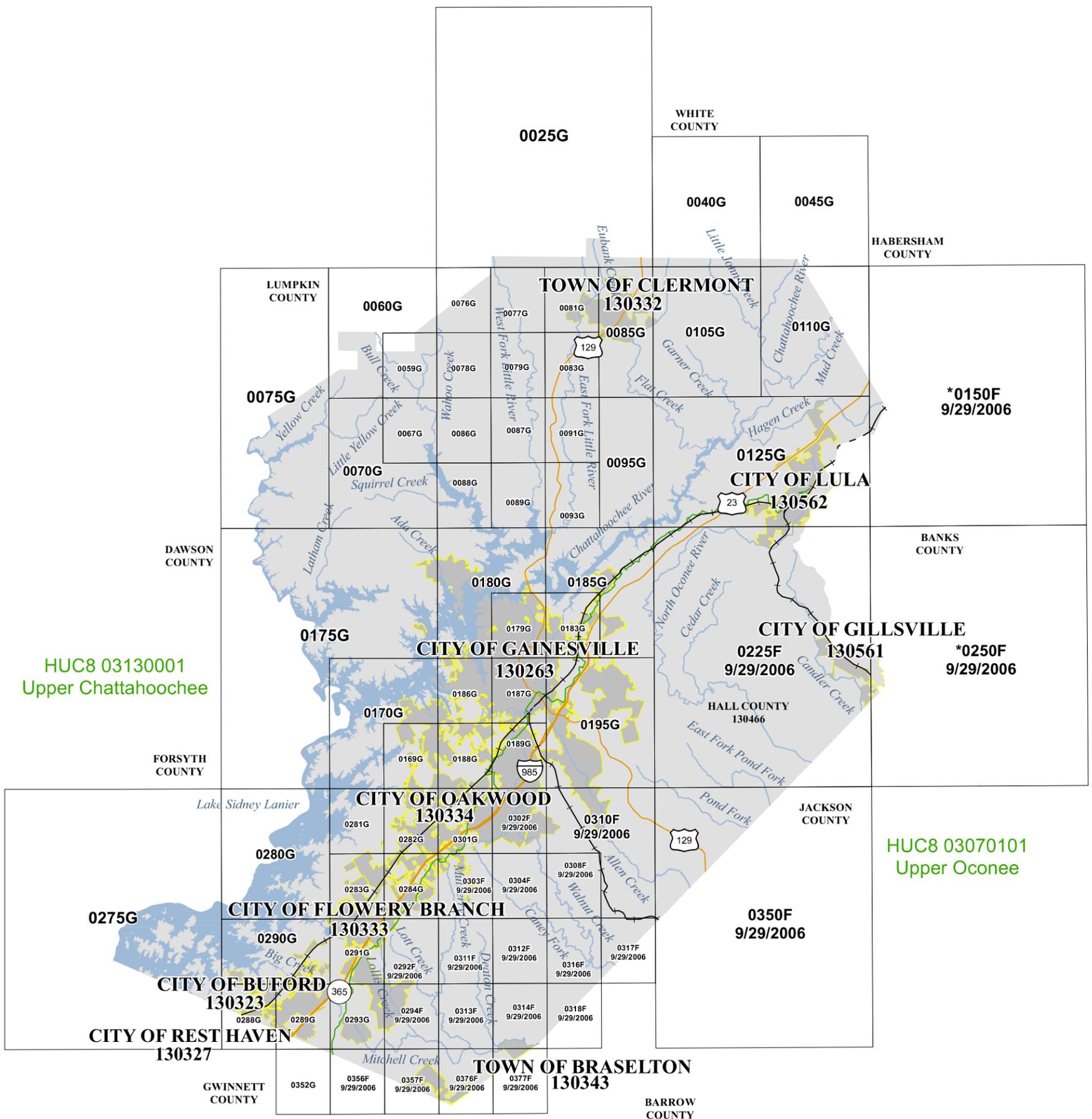
The CRS is a voluntary incentive program that recognizes and encourages community

floodplain management activities that exceed the minimum NFIP requirements. Visit the FEMA Web site at <http://www.fema.gov> or contact your appropriate FEMA Regional Office for more information about this program.

- FEMA has developed a *Guide to Flood Maps* (FEMA 258) and online tutorials to assist users in accessing the information contained on the FIRM. These include how to read panels and step-by-step instructions to obtain specific information. To obtain this guide and other assistance in using the FIRM, visit the FEMA Web site at [www.fema.gov/online-tutorials](http://www.fema.gov/online-tutorials).

The FIRM Index in Figure 1 shows the overall FIRM panel layout within Flood County, and also displays the panel number and effective date for each FIRM panel in the county. Other information shown on the FIRM Index includes community boundaries, flooding sources, watershed boundaries, and United States Geological Survey (USGS) Hydrologic Unit Code – 8 (HUC-8) codes.

Figure 1: FIRM Panel Index



Map Projection:  
Georgia State Plane West Zone (FIPS Zone 1002);  
North American Datum 1983

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

[HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)

SEE FLOOD INSURANCE STUDY FOR ADDITIONAL INFORMATION



**NATIONAL FLOOD INSURANCE PROGRAM**  
FLOOD INSURANCE RATE MAP INDEX

HALL COUNTY, GEORGIA and Incorporated Areas

PANELS PRINTED:  
0025, 0040, 0045, 0059, 0060, 0067, 0070, 0075, 0076, 0077, 0078, 0079, 0081, 0083, 0085, 0086, 0087, 0088, 0089, 0091, 0093, 0095, 0105, 0110, 0125, 0169, 0170, 0175, 0179, 0180, 0183, 0185, 0186, 0187, 0188, 0189, 0195, 0225, 0275, 0280, 0281, 0282, 0283, 0284, 0288, 0289, 0290, 0291, 0292, 0293, 0294, 0301, 0302, 0303, 0304, 0308, 0310, 0311, 0312, 0313, 0314, 0316, 0317, 0318, 0350, 0352, 0356, 0357, 0376, 0377

**PRELIMINARY**  
**4/28/2016**



MAP NUMBER  
13139CINDOB  
MAP REVISED

\*PANEL NOT PRINTED - NO SPECIAL FLOOD HAZARD AREAS

Each FIRM panel may contain specific notes to the user that provide additional information regarding the flood hazard data shown on that map. However, the FIRM panel does not contain enough space to show all the notes that may be relevant in helping to better understand the information on the panel. Figure 2 contains the full list of these notes.

**Figure 2: 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 and countywide map dates, refer to Table 28 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.

## Figure 2. FIRM Notes to Users

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 Non-Coastal 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.

**FLOOD CONTROL STRUCTURE INFORMATION:** Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 4.3 "Non-Levee Flood Protection Measures" of this FIS Report for information on flood control structures for this jurisdiction.

**PROJECTION INFORMATION:** The projection used in the preparation of the map was Georgia State Plane West Zone FIPS Zone 1002. The horizontal datum was NAD83 GRS 1980 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 (NAVD88). 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 (NAVD88), visit the National Geodetic Survey website at [www.ngs.noaa.gov/](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 listed in Table 31 of this FIS Report.

**BASE MAP INFORMATION:** Base map information shown on the FIRM was provided by 2013 digital orthoimagery produced by the National Agriculture Imagery Program (NAIP), at a 1-meter resolution. For information about base maps, refer to Section 6.2 "Base Map" in this FIS Report.

The map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were

## Figure 2. FIRM Notes to Users

transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables may reflect stream channel distances that differ from what is shown on the map.

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 Hall County, Georgia, corresponding revisions to the FIRM Index will be incorporated within the FIS Report to reflect the effective dates of those panels. Please refer to Table 28 of this FIS Report to determine the most recent FIRM revision date for each community. The most recent FIRM panel effective date will correspond to the most recent index date.

### **SPECIAL NOTES FOR SPECIFIC FIRM PANELS**

This Notes to Users section was created specifically for Hall County, Georgia and Incorporated Areas, effective **<date to be determined>**.

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.

Each FIRM panel contains an abbreviated legend for the features shown on the maps. However, the FIRM panel does not contain enough space to show the legend for all map features. Figure 3 shows the full legend of all map features. Note that not all of these features may appear on the FIRM panels in Hall County.

**Figure 3: Map Legend for FIRM**

<p><b>SPECIAL FLOOD HAZARD AREAS:</b> <i>The 1% annual chance flood, also known as the base flood or 100-year flood, has a 1% chance of happening or being exceeded each year. Special Flood Hazard Areas are subject to flooding by the 1% annual chance flood. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights. See note for specific types. If the floodway is too narrow to be shown, a note is shown.</i></p>	
	Special Flood Hazard Areas subject to inundation by the 1% annual chance flood (Zones A, AE, AH, AO, AR, A99, V and VE)
Zone A	The flood insurance rate zone that corresponds to the 1% annual chance floodplains. No base (1% annual chance) flood elevations (BFEs) or depths are shown within this zone.
Zone AE	The flood insurance rate zone that corresponds to the 1% annual chance floodplains. Base flood elevations derived from the hydraulic analyses are shown within this zone.
Zone AH	The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot BFEs derived from the hydraulic analyses are shown at selected intervals within this zone.
Zone AO	The flood insurance rate zone that corresponds to the areas of 1% 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 hydraulic analyses are shown within this zone.
Zone AR	The flood insurance rate zone that corresponds to areas that were formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
Zone A99	The flood insurance rate zone that corresponds to areas of the 1% annual chance floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or flood depths are shown within this zone.
Zone V	The flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations are not shown within this zone.
Zone VE	Zone VE is the flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations derived from the coastal analyses are shown within this zone as static whole-foot elevations that apply throughout the zone.

**Figure 3: Map Legend for FIRM**

	Regulatory Floodway determined in Zone AE.
<b>OTHER AREAS OF FLOOD HAZARD</b>	
	Shaded Zone X: Areas of 0.2% annual chance flood hazards and areas of 1% annual chance flood hazards with average depths of less than 1 foot or with drainage areas less than 1 square mile.
	Future Conditions 1% Annual Chance Flood Hazard – Zone X: The flood insurance rate zone that corresponds to the 1% annual chance floodplains that are determined based on future-conditions hydrology. No base flood elevations or flood depths are shown within this zone.
	Area with Reduced Flood Risk due to Levee: Areas where an accredited levee, dike, or other flood control structure has reduced the flood risk from the 1% annual chance flood. See Notes to Users for important information.
<b>OTHER AREAS</b>	
	Zone D (Areas of Undetermined Flood Hazard): The flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.
	Unshaded Zone X: Areas of minimal flood hazard.
<b>FLOOD HAZARD AND OTHER BOUNDARY LINES</b>	
	Flood Zone Boundary (white line on ortho-photography-based mapping; gray line on vector-based mapping)
	Limit of Study
	Jurisdiction Boundary
	Limit of Moderate Wave Action (LiMWA): Indicates the inland limit of the area affected by waves greater than 1.5 feet
<b>GENERAL STRUCTURES</b>	
<p><i>Aqueduct</i> <i>Channel</i> <i>Culvert</i> <i>Storm Sewer</i></p>	Channel, Culvert, Aqueduct, or Storm Sewer
<p><i>Dam</i> <i>Jetty</i> <i>Weir</i></p>	Dam, Jetty, Weir

**Figure 3: Map Legend for FIRM**

	Levee, Dike, or Floodwall
<p style="text-align: center;">Bridge</p>	Bridge
<p><b>COASTAL BARRIER RESOURCES SYSTEM (CBRS) AND OTHERWISE PROTECTED AREAS (OPA):</b> <i>CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas. See Notes to Users for important information.</i></p>	
	Coastal Barrier Resources System Area: Labels are shown to clarify where this area shares a boundary with an incorporated area or overlaps with the floodway.
<p style="text-align: center;"><b>CBRS AREA</b> 09/30/2009</p>	
	Otherwise Protected Area
<p style="text-align: center;"><b>OTHERWISE PROTECTED AREA</b> 09/30/2009</p>	
<p><b>REFERENCE MARKERS</b></p>	
<p style="text-align: center;">22.0</p>	River mile Markers
<p><b>CROSS SECTION &amp; TRANSECT INFORMATION</b></p>	
	Lettered Cross Section with Regulatory Water Surface Elevation (BFE)
	Numbered Cross Section with Regulatory Water Surface Elevation (BFE)
	Unlettered Cross Section with Regulatory Water Surface Elevation (BFE)
	Coastal Transect
	Profile Baseline: Indicates the modeled flow path of a stream and is shown on FIRM panels for all valid studies with profiles or otherwise established base flood elevation.
	Coastal Transect Baseline: Used in the coastal flood hazard model to represent the 0.0-foot elevation contour and the starting point for the transect and the measuring point for the coastal mapping.
	Base Flood Elevation Line
<p style="text-align: center;"><b>ZONE AE</b> (EL 16)</p>	Static Base Flood Elevation value (shown under zone label)
<p style="text-align: center;"><b>ZONE AO</b> (DEPTH 2)</p>	Zone designation with Depth

**Figure 3: Map Legend for FIRM**

<b>ZONE AO (DEPTH 2) (VEL 15 FPS)</b>	Zone designation with Depth and Velocity
<b>BASE MAP FEATURES</b>	
<i>Missouri Creek</i> 	River, Stream or Other Hydrographic Feature
	Interstate Highway
	U.S. Highway
	State Highway
	County Highway
<b>MAPLE LANE</b> 	Street, Road, Avenue Name, or Private Drive if shown on Flood Profile
 <i>RAILROAD</i>	Railroad
	Horizontal Reference Grid Line
	Horizontal Reference Grid Ticks
	Secondary Grid Crosshairs
<b>Land Grant</b>	Name of Land Grant
<b>7</b>	Section Number
<b>R. 43 W. T. 22 N.</b>	Range, Township Number
<b><sup>42</sup>76<sup>000m</sup>E</b>	Horizontal Reference Grid Coordinates (UTM)
<b>365000 FT</b>	Horizontal Reference Grid Coordinates (State Plane)
<b>80° 16' 52.5"</b>	Corner Coordinates (Latitude, Longitude)

## **SECTION 2.0 – FLOODPLAIN MANAGEMENT APPLICATIONS**

### **2.1 Floodplain Boundaries**

To provide a national standard without regional discrimination, the 1% annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2% annual chance (500-year) flood is employed to indicate additional areas of flood hazard in the community.

Each flooding source included in the project scope has been studied and mapped using professional engineering and mapping methodologies that were agreed upon by FEMA and Hall County as appropriate to the risk level. Flood risk is evaluated based on factors such as known flood hazards and projected impact on the built environment. Engineering analyses were performed for each studied flooding source to calculate its 1% annual chance flood elevations; elevations corresponding to other floods (e.g. 10-, 4-, 2-, 0.2-percent annual chance, etc.) may have also been computed for certain flooding sources. Engineering models and methods are described in detail in Section 5.0 of this FIS Report. The modeled elevations at cross sections were used to delineate the floodplain boundaries on the FIRM; between cross sections, the boundaries were interpolated using elevation data from various sources. More information on specific mapping methods is provided in Section 6.0 of this FIS Report.

Depending on the accuracy of available topographic data (Table 23), study methodologies employed (Section 5.0), and flood risk, certain flooding sources may be mapped to show both the 1% and 0.2% annual chance floodplain boundaries, regulatory water surface elevations (BFEs), and/or a regulatory floodway. Similarly, other flooding sources may be mapped to show only the 1% annual chance floodplain boundary on the FIRM, without published water surface elevations. In cases where the 1% and 0.2% annual chance floodplain boundaries are close together, only the 1% annual chance floodplain boundary is shown on the FIRM. Figure 3, “Map Legend for FIRM”, describes the flood zones that are used on the FIRMs to account for the varying levels of flood risk that exist along flooding sources within the project area. Table 2 and Table 3 indicate the flood zone designations for each flooding source and each community within Hall County, Georgia, respectively.

Table 2, “Flooding Sources Included in this FIS Report,” lists each flooding source, including its study limits, affected communities, mapped zone on the FIRM, and the completion date of its engineering analysis from which the flood elevations on the FIRM and in the FIS Report were derived. Descriptions and dates for the latest hydrologic and hydraulic analyses of the flooding sources are shown in Table 13. Floodplain boundaries for these flooding sources are shown on the FIRM (published separately) using the symbology described in Figure 3. On the map, the 1% annual chance floodplain corresponds to the SFHAs. The 0.2% annual chance floodplain shows areas that, although out of the regulatory floodplain, are still subject to flood hazards.

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. The procedures to remove these areas from the SFHA are described in Section 6.5 of this FIS Report.

### **2.2 Floodways**

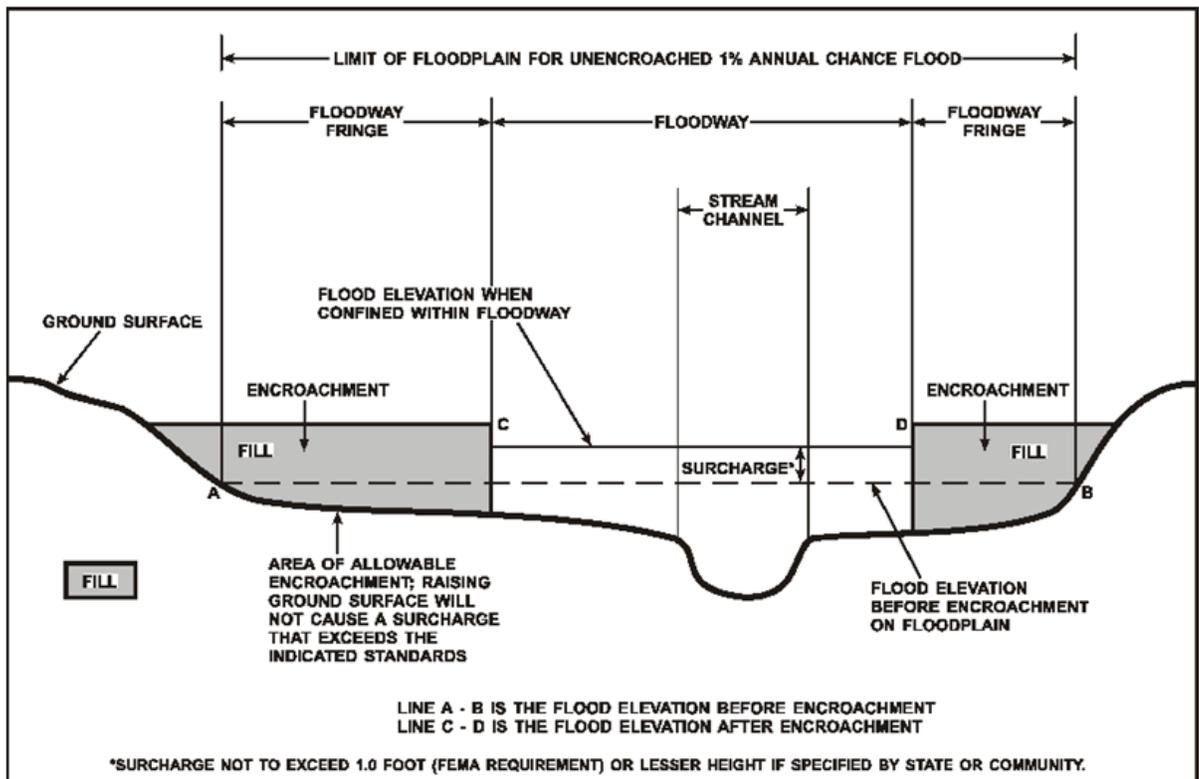
Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the

encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard.

For purposes of the NFIP, a floodway is used as a tool to assist local communities in balancing floodplain development against increasing flood hazard. With this approach, the area of the 1% annual chance floodplain on a river is divided into a floodway and a floodway fringe based on hydraulic modeling. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment in order to carry the 1% annual chance flood. The floodway fringe is the area between the floodway and the 1% annual chance floodplain boundaries where encroachment is permitted. The floodway must be wide enough so that the floodway fringe could be completely obstructed without increasing the water surface elevation of the 1% annual chance flood more than 1 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 4.

To participate in the NFIP, Federal regulations require communities to limit increases caused by encroachment to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this project are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway projects.

**Figure 4: Floodway Schematic**



Floodway widths presented in this FIS Report and on the FIRM were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. For certain stream segments, floodways were adjusted so that the amount of floodwaters conveyed on each side of the

floodplain would be reduced equally. The results of the floodway computations have been tabulated for selected cross sections and are shown in Table 24, "Floodway Data."

**Table 2: Flooding Sources Included in this FIS Report**

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi <sup>2</sup> ) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Balus Creek	Hall County Unincorporated Areas, City of Gainesville, City of Oakwood	Approximately 2,000 feet downstream of McEver Road	Approximately 1,410 feet upstream of Landrum Education Drive	03130001	3.5	N/A	Y	AE	08/01/1997
Balus Creek Tributary No. 1	City of Gainesville, City of Oakwood	Confluence with Balus Creek	Approximately 580 feet upstream Old Oakwood Road	03130001	1.1	N/A	Y	AE	08/01/1997
Caney Fork Creek	Hall County Unincorporated Areas	Confluence with Walnut Creek	Approximately 1,600 feet upstream of Sloan Mill Road	03070101	7.5	N/A	Y	AE	08/01/1997
Chattahoochee River	Hall County Unincorporated Areas	Approximately 0.9 miles east of the intersection of Belton Bridge Road and Persimmon Tree Rd	Hall/White County boundary	03130001	3.6	N/A	Y	AE	09/10/2015
Deaton Creek	Hall County Unincorporated Areas, Town of Braselton	Confluence with Mulberry River	Approximately 10,570 feet upstream Oliver Road	03070101	3.5	N/A	Y	AE	08/01/1997
Duncan Creek	Hall County Unincorporated Areas, Town of Braselton	Hall/Gwinnett County Boundary	Hall/Gwinnett County Boundary	03070101	1.4	N/A	Y	AE	08/22/2002

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi <sup>2</sup> ) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
East Fork Little River	Hall County Unincorporated Areas, Town Of Clermont	Approximately 5,000 feet downstream of Honeysuckle Road	Approximately 100 feet upstream of Clermont Highway/State Highway 283	03130001	9.3	N/A	Y	AE	04/01/1982
Flat Creek	Hall County Unincorporated Areas, City of Gainesville	At confluence with Lake Sidney Lanier	Just downstream of Queen City Parkway	03130001	6.8	N/A	Y	AE	09/10/2015
Flat Creek Tributary 1	Hall County Unincorporated Areas, City of Gainesville	At confluence with Flat Creek	W. Carter Street	03130001	0.3	N/A	Y	AE	09/10/2015
Flat Creek Tributary 2	City of Gainesville	At confluence with Flat Creek	Approximately 560 feet upstream of Pine Street	03130001	0.8	N/A	Y	AE	09/10/2015
Limestone Creek	Hall County Unincorporated Areas, City of Gainesville	Confluence with Lake Sidney Lanier	US Highway 129B/Jesse Jewell Parkway	03130001	1.6	N/A	Y	AE	04/01/1982
Limestone Creek Tributary	City of Gainesville	Confluence with Limestone Creek	Brenau Lake Dam	03130001	0.6	N/A	Y	AE	04/01/1982
Lollis Creek	Hall County Unincorporated Areas	Confluence with Sherwood Creek	Upper Looper Lake Dam	03070101	2.2	N/A	Y	AE	08/01/1997
Mitchell Creek	Hall County Unincorporated Areas	Confluence with Lollis Creek	Approximately 3,940 feet upstream of Blackjack Road	03070101	2.2	N/A	Y	AE	08/01/1997

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi <sup>2</sup> ) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Mud Creek	Hall County Unincorporated Areas, City of Oakwood	Stephens Road	Approximately 700 feet upstream of Norfolk Southern Railroad	03130001	2.0	N/A	Y	AE	04/01/1982
Mulberry Creek Tributary	Hall County Unincorporated Areas, City of Flowery Branch	Confluence with Mulberry Creek	Approximately 3,620 feet upstream of Elizabeth Lane	03070101	1.7	N/A	Y	AE	08/01/1997
Mulberry River/Mulberry Creek	Hall County Unincorporated Areas, Town of Braselton	Approximately 5,700 feet downstream of State Highway 211/Old Winder Highway	Martin Road	03070101	10.1	N/A	Y	AE	08/01/1997
Sherwood Creek	Hall County Unincorporated Areas, Town of Braselton	Confluence with Mulberry Creek	Approximately 1,950 feet upstream of Friendship Road/State Highway 347	03070101	3.6	N/A	Y	AE	08/01/1997
Suwanee Creek	Hall County Unincorporated Areas	Hall/Gwinnett County Boundary	Approximately 140 feet upstream of Hall/Gwinnett County Boundary	03130001	0.1	N/A	Y	AE	03/01/2005
Suwanee Creek Tributary No. 4	Hall County Unincorporated Areas, City of Rest Haven	Hall/Gwinnett County Boundary	Approximately 140 feet upstream of Hall/Gwinnett County Boundary	03130001	0.1	N/A	Y	AE	03/01/2005

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi <sup>2</sup> ) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Upper Mitchell Creek	Hall County Unincorporated Areas	Approximately 1,704 downstream of Hall/Gwinnett County Boundary	Hall/Gwinnett County Boundary	03070101	0.3	N/A	Y	AE	08/22/2002
Wahoo Creek	Hall County Unincorporated Areas	Confluence with Lake Sidney Lanier	Approximately 1,200 feet downstream of Gilstrap Mill Road	03130001	5.5	N/A	Y	AE	04/01/1982
Wahoo Creek Tributary	Hall County Unincorporated Areas	Confluence with Wahoo Creek	Just upstream of Gilstrap Mill Road	03130001	0.3	N/A	Y	AE	04/01/1982
Walnut Creek	Hall County Unincorporated Areas, City of Gainesville	Approximately 7,500 feet downstream of Tanners Mill Road/State Highway 211	Approximately 6,200 feet upstream of Lee Land Road	03070101	8.9	N/A	Y	AE	08/01/1997
West Fork Little River	Hall County Unincorporated Areas	Approximately 6,300 feet downstream of Jim Hood Road	Just upstream of Dahlonega Highway	03130001	8.6	N/A	Y	AE	09/10/2015

All floodways that were developed for this FIS project are shown on the FIRM using the symbology described in Figure 3. In cases where the floodway and 1% annual chance floodplain boundaries are either close together or collinear, only the floodway boundary has been shown on the FIRM. For information about the delineation of floodways on the FIRM, refer to Section 6.3.

### **2.3 Base Flood Elevations**

The hydraulic characteristics of flooding sources were analyzed to provide estimates of the elevations of floods of the selected recurrence intervals. The Base Flood Elevation (BFE) is the elevation of the 1% annual chance flood. These BFEs are most commonly rounded to the whole foot, as shown on the FIRM, but in certain circumstances or locations they may be rounded to 0.1 foot. Cross section lines shown on the FIRM may also be labeled with the BFE rounded to 0.1 foot. Whole-foot BFEs derived from engineering analyses that apply to coastal areas, areas of ponding, or other static areas with little elevation change may also be shown at selected intervals on the FIRM.

Cross sections with BFEs shown on the FIRM correspond to the cross sections shown in the Floodway Data table and Flood Profiles in this FIS Report. BFEs 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.

### **2.4 Non-Encroachment Zones**

This section is not applicable to this Flood Risk Project.

### **2.5 Coastal Flood Hazard Areas**

This section is not applicable to this Flood Risk Project.

#### **2.5.1 Water Elevations and the Effects of Waves**

This section is not applicable to this Flood Risk Project.

#### **Figure 5: Wave Runup Transect Schematic**

**[Not Applicable to this Flood Risk Project]**

#### **2.5.2 Floodplain Boundaries and BFEs for Coastal Areas**

This section is not applicable to this Flood Risk Project.

#### **2.5.3 Coastal High Hazard Areas**

This section is not applicable to this Flood Risk Project.

## Figure 6: Coastal Transect Schematic

[Not Applicable to this Flood Risk Project]

### 2.5.4 Limit of Moderate Wave Action

This section is not applicable to this Flood Risk Project.

## SECTION 3.0 – INSURANCE APPLICATIONS

### 3.1 National Flood Insurance Program Insurance Zones

For flood insurance applications, the FIRM designates flood insurance rate zones as described in Each FIRM panel contains an abbreviated legend for the features shown on the maps. However, the FIRM panel does not contain enough space to show the legend for all map features. Figure 3 shows the full legend of all map features. Note that not all of these features may appear on the FIRM panels in Hall County.

Figure 3, “Map Legend for FIRM.” Flood insurance zone designations are assigned to flooding sources based on the results of the hydraulic or coastal analyses. Insurance agents use the zones shown on the FIRM and depths and base flood elevations in this FIS Report in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

The 1% annual chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (e.g. Zones A, AE, V, VE, etc.), and the 0.2% annual chance floodplain boundary corresponds to the boundary of areas of additional flood hazards.

Table 3 lists the flood insurance zones in Hall County.

**Table 3: Flood Zone Designations by Community**

Community	Flood Zone(s)
Braselton, Town of	A, AE, X
Buford, City of	A, X
Clermont, Town of	A, AE, X
Flowery Branch, City of	A, AE, X
Gainesville, City of	A, AE, X
Gillsville, City of	A
Hall County Unincorporated Areas	A, AE, X
Lula, City of	A, X
Oakwood, City of	A, AE, X
Rest Haven, City of	AE, X

### 3.2 Coastal Barrier Resources System

This section is not applicable to the Flood Risk Project.

**Table 4: Coastal Barrier Resources System Information**

**[Not Applicable to this Flood Risk Project]**

## SECTION 4.0 – AREA STUDIED

### 4.1 Basin Description

Table 5 contains a description of the characteristics of the HUC-8 sub-basins within which each community falls. The table includes the main flooding sources within each basin, a brief description of the basin, and its drainage area.

**Table 5: Basin Characteristics**

HUC-8 Sub-Basin Name	HUC-8 Sub-Basin Number	Primary Flooding Source	Description of Affected Area	Drainage Area (sq. miles)
Upper Chattahoochee River Basin	03130001	Chattahoochee River	The headwaters of the Upper Chattahoochee Basin extends from northeastern side of White and Habersham Counties to Fulton County. It is about 1,585 square miles drainage areas and flows southwesterly and 17 percent of drainage area comes from Hall County.	1,585
Upper Chattahoochee River Sub-basin	03130001	Chattahoochee River	The affected area in this watershed extends from about 4,000 feet upstream of Belton Bridge Road on Hall County to White and Habersham Counties.	375
Flat Creek Sub-basin	03130001	Flat Creek	The affected area in this watershed extends from Lake Sidney Lanier to Queen City Parkway within the City of Gainesville, City of Oakwood and Hall County Unincorporated Areas.	8
West Fork Little River Sub-basin	03130001	West Fork Little River	The affected area in this watershed extends from West Fork Little River at Lake Sidney Lanier near Trotter Road to White County.	22

HUC-8 Sub-Basin Name	HUC-8 Sub-Basin Number	Primary Flooding Source	Description of Affected Area	Drainage Area (sq. miles)
Upper Oconee River Basin	03070101	Upper Oconee River	The headwater of the Upper Oconee Basin extends from Hall County to Baldwin County. It is about 2,915 square miles drainage areas and flows southeasterly to Lower Oconee Basin. About 9 percent of the Upper Oconee drainage area comes from Hall County.	2,915

#### 4.2 Principal Flood Problems

Table 6 contains a description of the principal flood problems that have been noted for Hall County by flooding source.

**Table 6: Principal Flood Problems**

Flooding Source	Description of Flood Problems
Chattahoochee River and Various Streams in Hall County	The historical documentation of flooding in Hall County is very limited. The U.S. Geological Survey (USGS) stream gage located on the Chattahoochee River near Gainesville recorded highwater events in August 1940, January 1946, June 1949, and March 1952. Among these, the January 1946 flood was the most severe having an approximate return interval of greater than the 1-percent-annual-chance flood with a peak discharge of 45,800 cfs. The gaging station near Gainesville was abandoned with the completion of Lake Sidney Lanier. In addition, flooding has occurred in March 1963, August 1967, May 1973, and May 1976 as recorded at the USGS gaging station located on the Chattahoochee River six miles northwest of Cornelia in White County.

Table 7 contains information about historic flood elevations in the communities within Hall County.

**Table 7: Historic Flooding Elevations**

**[Not Applicable to this Flood Risk Project]**

#### 4.3 Non-Levee Flood Protection Measures

Table 8 contains information about non-levee flood protection measures within Hall County such as dams, jetties, and or dikes. Levees are addressed in Section 4.4 of this FIS Report.

**Table 8: Non-Levee Flood Protection Measures**

**[Not Applicable to this Flood Risk Project]**

#### **4.4 Levees**

This section is not applicable to this Flood Risk Project.

**Table 9: Levees**

**[Not Applicable to this Flood Risk Project]**

### **SECTION 5.0 – ENGINEERING METHODS**

For the flooding sources in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude that are expected to be equaled or exceeded at least 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% annual chance, respectively, of being equaled or exceeded during any year.

Although the recurrence interval represents the long-term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood that equals or exceeds the 100-year flood (1-percent chance of annual exceedance) during the term of a 30-year mortgage is approximately 26 percent (about 3 in 10); for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

#### **5.1 Hydrologic Analyses**

Hydrologic analyses were carried out to establish the peak elevation-frequency relationships for floods of the selected recurrence intervals for each flooding source studied. Hydrologic analyses are typically performed at the watershed level. Depending on factors such as watershed size and shape, land use and urbanization, and natural or man-made storage, various models or methodologies may be applied. A summary of the hydrologic methods applied to develop the discharges used in the hydraulic analyses for each stream is provided in Table 13. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

A summary of the discharges is provided in Table 10. Frequency Discharge-Drainage Area Curves used to develop the hydrologic models may also be shown in Figure 7 for selected flooding sources. A summary of stillwater elevations developed for non-coastal flooding sources is provided in Table 11. (Coastal stillwater elevations are discussed in Section 5.3 and shown in Table 17.) Stream gage information is provided in Table 12.

**Table 10: Summary of Discharges**

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Balus Creek	Approximately 1,995 feet downstream of McEver Road	6.8	1,582	*	2,593	3,100	*	4,511
Balus Creek	Just downstream of confluence of Balus Creek Tributary No. 1	6.2	1,484	*	2,438	2,919	*	4,256
Balus Creek	Just upstream of the confluence of Balus Creek Tributary No. 1	3.3	1,003	*	1,672	2,016	*	2,979
Balus Creek	At Old Oakwood Road	2.0	730	*	1,232	1,494	*	2,231
Balus Creek	Approximately 1,695 feet upstream of Old Oakwood Road	0.7	387	*	669	821	*	1,255
Balus Creek	At Landrum Education Drive	0.6	336	*	585	719	*	1,103
Balus Creek Tributary No. 1	At confluence with Balus Creek	2.9	929	*	1,554	1,876	*	2,780
Balus Creek Tributary No. 1	Approximately 1,000 feet downstream of Old Oakwood Road	1.2	534	*	912	1,112	*	1,679
Caney Fork Creek	At confluence with Walnut Creek	8.9	1,565	*	2,515	2,971	*	4,192
Caney Fork Creek	Just downstream of the confluence of Chestnut Mountain Tributary	8.0	1,472	*	2,366	2,796	*	3,947

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Caney Fork Creek	Just upstream of the confluence of Chestnut Mountain Tributary	6.7	1,314	*	2,114	2,499	*	3,530
Caney Fork Creek	Just downstream of the confluence of Platt Park Tributary	6.2	1,259	*	2,027	2,398	*	3,387
Caney Fork Creek	Just upstream of the confluence of Platt Park Tributary	4.4	1,019	*	1,644	1,946	*	2,753
Caney Fork Creek	Approximately 3,350 feet upstream of Pine Vale Road	2.7	761	*	1,230	1,457	*	2,066
Caney Fork Creek	Approximately 3,450 feet upstream of Pine Vale Road	1.6	544	*	884	1,048	*	1,489
Caney Fork Creek	At Sloan Mill Road	1.1	433	*	704	836	*	1,189
Chattahoochee River	Approximately 4,000 feet upstream of Belton Bridge Road	374.6	20,254	24,769	28,219	31,411	*	38,728
Chattahoochee River	Upstream of confluence with Pitts Creek	366.7	20,286	24,754	28,132	31,265	*	38,412
Chattahoochee River	Upstream of confluence with Mossy Creek	333.8	20,325	24,597	27,676	30,571	*	37,027
Deaton Creek	At confluence with Mulberry River	4.8	1,080	*	1,741	2,060	*	2,913
Deaton Creek	At Oliver Road	2.7	753	*	1,219	1,444	*	2,047
Deaton Creek	Just upstream of the confluence of Union Church Tributary	1.7	566	*	919	1,089	*	1,547

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Deaton Creek	Approximately 7,965 feet upstream of the confluence of Union Church Tributary	1.0	412	*	671	796	*	1,133
Duncan Creek	Approximately 2,095 feet downstream of the upstream county boundary	4.2	915	*	1,387	1,526	*	2,062
East Fork Little River	Approximately 5,060 feet downstream of Honeysuckle Road	18.2	2,550	*	3,880	4,390	*	5,410
East Fork Little River	Approximately 750 feet upstream of Honeysuckle Road	14.3	2,150	*	3,280	3,720	*	4,620
East Fork Little River	Approximately 400 feet upstream of Claude Peck Road	11.3	1,830	*	2,790	3,170	*	3,970
East Fork Little River	Just upstream of State Highway 52/Brookton-Lula Road	9.2	1,590	*	2,430	2,760	*	3,480
East Fork Little River	Approximately 1,000 feet upstream of Green Circle	7.9	1,430	*	2,180	2,490	*	3,140
East Fork Little River	Just upstream of State Highway 283	6.1	1,200	*	1,830	2,100	*	2,670
Flat Creek	At Lake Sidney Lanier	7.94	2,974	3,874	4,581	5,360	*	7,412
Flat Creek	Approximately 4,650 feet downstream of McEver Road	7.47	2,892	3,747	4,422	5,162	*	7,152
Flat Creek	At McEver Road	7.21	2,865	3,685	4,335	5,047	*	6,978

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Flat Creek	Approximately 2,200 feet downstream of Old Flowery Branch Road	6.10	2,472	3,158	3,700	4,297	*	5,925
Flat Creek	At Old Flowery Branch Road	5.45	2,226	2,807	3,272	3,784	*	5,295
Flat Creek	At Centennial Drive	5.19	2,145	2,690	3,131	3,638	*	5,127
Flat Creek	At Memorial Park Drive	4.58	1,960	2,411	2,787	3,246	*	4,534
Flat Creek	At Dixie Drive	3.98	1,730	2,187	2,540	2,925	*	3,977
Flat Creek	At Hilton Drive	3.24	1,558	1,944	2,243	2,554	*	3,306
Flat Creek	Just upstream of confluence with Flat Creek Tributary No. 1	2.77	1,477	1,843	2,120	2,408	*	3,096
Flat Creek	At Highland Terrace	2.75	1,477	1,842	2,120	2,407	*	3,093
Flat Creek	At Atlanta Highway	2.64	1,504	1,870	2,145	2,422	*	3,093
Flat Creek	At Dorsey Street	2.37	1,425	1,766	2,014	2,272	*	2,884
Flat Creek	Approximately 1,350 feet downstream of Queen City Parkway	1.43	902	1,108	1,265	1,425	*	1,089
Flat Creek	At Queen City Parkway	1.23	833	1,016	1,158	1,304	*	1,652
Flat Creek	At SW Pine Street	0.52	459	555	629	705	*	887
Flat Creek Tributary No. 1	Just upstream of confluence with Flat Creek	0.27	351	429	489	550	*	697
Flat Creek Tributary No. 1	Approximately 210 feet downstream of W Carter Street	0.01	19	24	28	33	*	43

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Flat Creek Tributary No. 2	Just upstream of confluence with Flat Creek	0.87	628	782	902	1,025	*	1,323
Flat Creek Tributary No. 2	At Pearl Nix Parkway	0.71	518	627	712	799	*	1,006
Flat Creek Tributary No. 2	At Queen City Parkway	0.61	487	588	667	748	*	941
Limestone Creek	At confluence with Lake Sidney Lanier	4.0	1,680	*	2,510	2,900	*	3,720
Limestone Creek	Just downstream of confluence of Limestone Creek Tributary	3.4	1,500	*	2,250	2,600	*	3,360
Limestone Creek	Just upstream of confluence of Limestone Creek Tributary	1.7	920	*	1,380	1,590	*	2,080
Limestone Creek	At Beverly Road	1.7	870	*	1,330	1,510	*	1,960
Limestone Creek	Approximately 2,530 feet upstream of Beverly Road	1.3	790	*	1,180	1,370	*	1,770
Limestone Creek	At State Highway 13/11/Jesse Jewell Parkway/U.S. Highway 129	1.0	660	*	980	1,140	*	1,490
Limestone Creek Tributary	At confluence with Limestone Creek	1.7	1,020	*	1,510	1,750	*	2,310
Limestone Creek Tributary	Just downstream of Brenau Lake Dam	1.3	850	*	1,260	1,470	*	1,920

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Lollis Creek	At confluence with Sherwood Creek	10.0	1,690	*	2,713	3,205	*	4,519
Lollis Creek	Just downstream of confluence of Mitchell Creek	9.2	1,603	*	2,575	3,043	*	4,292
Lollis Creek	Just upstream of confluence of Mitchell Creek	4.6	1,043	*	1,683	1,991	*	2,817
Lollis Creek	At Lower Looper Lake Dam	3.8	935	*	1,510	1,787	*	2,530
Lollis Creek	At Upper Looper Lake Dam	2.4	694	*	1,124	1,332	*	1,889
Mitchell Creek	At confluence with Lollis Creek	4.6	1,053	*	1,698	2,010	*	2,843
Mitchell Creek	At Blackjack Road	3.9	947	*	1,528	1,809	*	2,560
Mitchell Creek	Approximately 13,340 feet upstream of Blackjack Road	1.0	398	*	648	769	*	1,889
Mud Creek	At confluence with Lake Sidney Lanier	3.8	980	*	1,570	1,840	*	2,540
Mud Creek	Approximately 800 feet downstream of McEver Road	2.9	830	*	1,340	1,570	*	2,180
Mud Creek	Approximately 600 feet upstream of Norfolk Southern Railway	2.1	700	*	1,130	1,330	*	1,850
Mulberry Creek Tributary	At confluence with Mulberry Creek	2.1	654	*	1,059	1,255	*	1,781
Mulberry Creek Tributary	At Elizabeth Lane	1.7	566	*	919	1,089	*	1,547

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Mulberry River/ Mulberry Creek	At Hall County boundary	40.2	3,958	*	6,301	7,423	*	10,409
Mulberry River/ Mulberry Creek	Just downstream of confluence of Deaton Creek	34.8	3,619	*	5,767	6,796	*	9,535
Mulberry River/ Mulberry Creek	Just upstream of confluence of Deaton Creek	29.9	3,302	*	5,266	6,208	*	8,715
Mulberry River/ Mulberry Creek	Just downstream of confluence of Sherwood Creek	28.7	3,216	*	5,131	6,049	*	8,494
Mulberry River/ Mulberry Creek	Just upstream of confluence of Sherwood Creek	11.5	1,840	*	2,951	3,486	*	4,913
Mulberry River/ Mulberry Creek	Just downstream of confluence of Mulberry Creek Tributary	9.2	1,603	*	2,575	3,043	*	4,293
Mulberry River/ Mulberry Creek	Just upstream of confluence of Mulberry Creek Tributary	7.1	1,365	*	2,195	2,595	*	3,665
Mulberry River/ Mulberry Creek	Approximately 6,400 feet upstream of the confluence of Mulberry Creek Tributary	4.3	1,003	*	1,618	1,914	*	2,709

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Mulberry River/ Mulberry Creek	Approximately 4,570 feet downstream of Martin Road	3.0	806	*	1,303	1,543	*	2,186
Sherwood Creek	Approximately 3,450 feet downstream of Spout Springs Road	16.6	4,903	*	7,666	8,755	*	12,196
Sherwood Creek	Approximately 1,800 feet downstream of Spout Springs Road	15.8	4,804	*	7,512	8,575	*	11,947
Sherwood Creek	At Spout Springs Road	6.6	3,410	*	5,306	5,981	*	8,294
Sherwood Creek	At the county boundary	4.4	2,840	*	4,306	4,736	*	6,397
Suwanee Creek	At the county boundary	0.1	199	*	327	365	*	499
Suwanee Creek Tributary No. 4	At the county boundary	0.87	785	*	1,325	1,489	*	2,062
Upper Mitchell Creek	Approximately 380 feet downstream of the county boundary	1.4	1,286	*	1,919	2,103	*	2,808
Wahoo Creek	At confluence with Lake Sidney Lanier	24.7	3,140	*	4,790	5,400	*	6,590
Wahoo Creek	Just upstream of Ben Parks Road	22.2	2,920	*	4,450	5,030	*	6,160

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Wahoo Creek	Just upstream of confluence of Bull Creek	11.2	1,830	*	2,780	3,160	*	3,950
Wahoo Creek	Just upstream of George Barnes Road	10.4	1,730	*	2,630	2,990	*	3,750
Wahoo Creek	Just downstream of confluence of Wahoo Creek Tributary	9.2	1,590	*	2,430	2,770	*	3,480
Wahoo Creek	Just upstream of confluence of Wahoo Creek Tributary	7.5	1,365	*	2,085	2,375	*	3,005
Wahoo Creek Tributary	At confluence with Wahoo Creek	1.7	500	*	760	880	*	1,170
Walnut Creek	At Hall County boundary	26.2	3,044	*	4,859	5,729	*	8,048
Walnut Creek	Just downstream of confluence of Caney Fork Creek	25.1	2,962	*	4,730	5,577	*	7,836
Walnut Creek	Just upstream of confluence of Caney Fork Creek	16.2	2,268	*	3,631	4,285	*	6,031
Walnut Creek	At Poplar Springs Road/State Highway 332	13.1	1,985	*	3,182	3,757	*	5,292
Walnut Creek	Just upstream of confluence of Candler Branch	10.4	1,730	*	2,777	3,280	*	4,625
Walnut Creek	At Webb Girth Road	9.2	1,602	*	2,573	3,040	*	4,288
Walnut Creek	Approximately 4,000 feet upstream of Lee Land Road	6.5	1,293	*	2,081	2,460	*	3,475

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
West Fork Little River	At Lake Sidney Lanier near Darryl Lane	22.1	2,690	3,510	4,230	4,880	*	6,510
West Fork Little River	At Lake Sidney Lanier near Trotter Road	21.9	2,670	3,490	4,210	4,860	*	6,480
West Fork Little River	At downstream side of Jim Hood Road	20.9	2,600	3,390	4,090	4,720	*	6,300
West Fork Little River	At upstream side of Jim Hood Road	20.8	2,590	3,380	4,080	4,710	*	6,290
West Fork Little River	Near Jim Hood Road	20.2	2,540	3,320	4,010	4,630	*	6,180
West Fork Little River	About 1,000 feet downstream of Jess Helton Road	18.6	2,420	3,160	3,820	4,410	*	5,890
West Fork Little River	At downstream side of Jess Helton Road	18.4	2,400	3,140	3,790	4,380	*	5,850
West Fork Little River	At upstream side of Jess Helton Road	18.2	2,380	3,120	3,770	4,350	*	5,820
West Fork Little River	About 3,500 feet upstream of Jess Helton Road	17.8	2,350	3,070	3,720	4,290	*	5,740
West Fork Little River	Near Circle of Light Drive	17.6	2,340	3,050	3,690	4,260	*	5,700
West Fork Little River	About 1,500 feet upstream of Circle of Light Drive	13.3	1,970	2,580	3,120	3,610	*	4,840
West Fork Little River	About 2,500 feet upstream of Circle of Light Drive	13.2	1,960	2,560	3,110	3,590	*	4,820

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
West Fork Little River	At Walden Pond Road near the pond	12.9	1,930	2,530	3,060	3,550	*	4,760
West Fork Little River	At Walden Pond Road	12.8	1,920	2,520	3,050	3,530	*	4,740
West Fork Little River	About 2,500 feet downstream of Wild Smith Road	12.6	1,900	2,490	3,020	3,500	*	4,690
West Fork Little River	About 1,500 feet downstream of Wild Smith Road	12.5	1,890	2,480	3,010	3,480	*	4,670
West Fork Little River	About 1,500 feet upstream of Wild Smith Road	12.1	1,850	2,430	2,950	3,410	*	4,580
West Fork Little River	About 3,000 feet upstream of Wild Smith Road	11.7	1,820	2,380	2,890	3,350	*	4,500
West Fork Little River	About 3,000 feet downstream of Bethel Road near a pond	11.5	1,800	2,360	2,860	3,310	*	4,450
West Fork Little River	At downstream side of Bethel Road	11.0	1,750	2,300	2,790	3,230	*	4,340
West Fork Little River	At upstream side of Bethel Road	10.9	1,740	2,280	2,770	3,210	*	4,310
West Fork Little River	About 4,500 feet upstream side of Bethel Road	8.8	1,520	2,010	2,440	2,830	*	3,810
West Fork Little River	About 3,500 feet downstream of Dahlonga Highway	8.7	1,510	1,990	2,410	2,800	*	3,770
West Fork Little River	About 2,000 feet downstream of Dahlonga Highway	8.4	1,480	1,940	2,360	2,740	*	3,700

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
West Fork Little River	About 1,500 feet downstream of Dahlonega Highway	8.2	1,460	1,930	2,340	2,710	*	3,660
West Fork Little River	About 500 feet downstream of Dahlonega Highway	7.5	1,380	1,820	2,210	2,560	*	3,460
West Fork Little River	At downstream side of Dahlonega Highway	7.4	1,370	1,800	2,190	2,540	*	3,440
West Fork Little River	At upstream side of Dahlonega Highway	6.8	1,300	1,720	2,090	2,430	*	3,280

\* Not calculated for this Flood Risk Project

**Figure 7: Frequency Discharge-Drainage Area Curves**

**[Not Applicable to this Flood Risk Project]**

**Table 11: Summary of Non-Coastal Stillwater Elevations**

**[Not Applicable to this Flood Risk Project]**

**Table 12: Stream Gage Information used to Determine Discharges**

Flooding Source	Gage Identifier	Agency that Maintains Gage	Site Name	Drainage Area (Square Miles)	Period of Record	
					From	To
Chattahoochee River	02331600	U.S. Geological Survey	USGS 02331600 Chattahoochee River Near Cornelia, GA	315	08/13/1940	10/02/2012

**5.2 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. Base flood elevations 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 base flood elevations. 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.

For streams for which hydraulic analyses were based on cross sections, locations of selected cross sections are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 6.3), selected cross sections are also listed on Table 24, "Floodway Data."

A summary of the methods used in hydraulic analyses performed for this project is provided in Table 13. Roughness coefficients are provided in Table 14. Roughness coefficients are values representing the frictional resistance water experiences when passing overland or through a channel. They are used in the calculations to determine water surface elevations. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

**Table 13: Summary of Hydrologic and Hydraulic Analyses**

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Balus Creek	Approximately 2,000 feet downstream of McEver Road	Approximately 1,410 feet upstream of Landrum Education Drive	Regression Equations (1995)	HEC-2	08/01/1997	AE w/Floodway	
Balus Creek Tributary No. 1	Confluence with Balus Creek	Approximately 580 feet upstream Old Oakwood Road	Regression Equations (1995)	HEC-2	08/01/1997	AE w/Floodway	
Caney Fork Creek	Confluence with Walnut Creek	Approximately 1,720 feet upstream of Sloan Mill Road	Regression Equations (1995)	HEC-2	08/01/1997	AE w/Floodway	
Chattahoochee River	Approximately 12,000 feet upstream from Belton Bridge Road	At Hall County/ White County boundary	PeakFQ 7.1	HEC-RAS 4.1.0	09/10/2015	AE w/Floodway	
Deaton Creek	Confluence with Mulberry River	Approximately 10,570 feet upstream Oliver Road	Regression Equations (1995)	HEC-2	08/01/1997	AE w/Floodway	
Duncan Creek	Hall/Gwinnett County Boundary	Hall/Gwinnett County Boundary	HEC-HMS 2.1.2	HEC-RAS 3.1.2	08/22/2002	AE w/Floodway	

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
East Fork Little River	Approximately 5,000 feet downstream of Honeysuckle Road	Approximately 100 feet upstream of Clermont Highway/State Highway 283	Regression Equations (1979)	HEC-2	04/01/1982	AE w/Floodway	
Flat Creek	Confluence with Lake Sidney Lanier	Just downstream of Queen City Parkway	HEC-HMS 3.5	HEC-RAS 4.1.0	09/10/2015	AE w/Floodway	
Flat Creek Tributary No. 1	Confluence with Flat Creek	Just downstream of W. Carter Street	HEC-HMS 3.5	HEC-RAS 4.1.0	09/10/2015	AE w/Floodway	
Flat Creek Tributary No. 2	Confluence with Flat Creek	Approximately 550 feet upstream of SW Pine Street	HEC-HMS 3.5	HEC-RAS 4.1.0	09/10/2015	AE w/Floodway	
Limestone Creek	Confluence with Lake Sidney Lanier	US Highway 129B/Jesse Jewell Parkway	Regression Equations (1979)	HEC-2	04/01/1982	AE w/Floodway	
Limestone Creek Tributary	Confluence with Limestone Creek	Brenau Lake Dam	Regression Equations (1979)	HEC-2	04/01/1982	AE w/Floodway	
Lollis Creek	Confluence with Sherwood Creek	Just upstream face of Lake Sterling Boulevard	Regression Equations (1995)	HEC-2	08/01/1997	AE w/Floodway	
Mitchell Creek	Confluence with Lollis Creek	Approximately 3,940 feet upstream of Blackjack Road	Regression Equations (1995)	HEC-2	08/01/1997	AE w/Floodway	

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Mud Creek	Stephens Road	Approximately 700 feet upstream of Norfolk Southern Railroad	Regression Equations (1979)	HEC-2	04/01/1982	AE w/Floodway	
Mulberry Creek Tributary	Confluence with Mulberry Creek	Approximately 3,620 feet upstream of Elizabeth Lane	Regression Equations (1995)	HEC-2	08/01/1997	AE w/Floodway	
Mulberry River/ Mulberry Creek	Approximately 5,700 feet downstream of State Highway 211/Old Winder Highway	Martin Road	Regression Equations (1995)	HEC-2	08/01/1997	AE w/Floodway	
Multiple Streams in Hall County (All in HUC-8 basin 03130001)	Varies	Varies	HEC-HMS 3.1 and Regression Equations	HEC-RAS 3.1.3 and Up	09/10/2015 07/01/2012 12/16/2008	A	
Sherwood Creek	Confluence with Mulberry Creek	Approximately 1,950 feet upstream of Friendship Road/State Highway 347	Regression Equations (1995)	HEC-RAS 3.1.2	08/01/1997	AE w/Floodway	
Suwanee Creek	Hall/Gwinnett County Boundary	Approximately 140 feet upstream of Hall/Gwinnett County Boundary	HEC-HMS 2.1.2	HEC-RAS 3.1.1	03/01/2005	AE w/Floodway	

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Suwanee Creek Tributary No. 4	Hall/Gwinnett County Boundary	Approximately 140 feet upstream of Hall/Gwinnett County Boundary	HEC-HMS 2.1.2	HEC-RAS 3.1.1	03/01/2005	AE w/Floodway	
Upper Mitchell Creek	Approximately 1,704 downstream of Hall/Gwinnett County Boundary	Hall/Gwinnett County Boundary	HEC-HMS 2.1.2	HEC-RAS 3.1.2	08/22/2002	AE w/Floodway	
Wahoo Creek	Confluence with Lake Sidney Lanier	Approximately 1,200 feet downstream of Gilstrap Mill Road	Regression Equations (1979)	HEC-2	04/01/1982	AE w/Floodway	
Wahoo Creek Tributary	Confluence with Wahoo Creek	Just upstream of Gilstrap Mill Road	Regression Equations (1979)	HEC-2	04/01/1982	AE w/Floodway	
Walnut Creek	Approximately 7,500 feet downstream of Tanners Mill Road/State Highway 211	Approximately 6,200 feet upstream of Lee Land Road	Regression Equations (1995)	HEC-2	08/01/1997	AE w/Floodway	
West Fork Little River	Approximately 6,300 feet downstream of Jim Hood Road	Just upstream of Dahlonega Highway	USGS StreamStats	HEC-RAS 4.1.0	09/10/2015	AE w/Floodway	

**Table 14: Roughness Coefficients**

Flooding Source	Channel “n”	Overbank “n”
Bales Creek	0.050 to 0.070	0.100 to 0.120
Bales Creek Tributary No. 1	0.070	0.100 to 0.120
Caney Fork Creek	0.040 to 0.075	0.040 to 0.120
Chattahoochee River	0.035	0.011
Deaton Creek	0.050	0.100 to 0.120
Duncan Creek	0.025 to 0.060	0.040 to 0.100
East Fork Little River	0.040 to 0.055	0.040 to 0.110
Flat Creek	0.040 to 0.050	0.045 to 0.100
Flat Creek Tributary No. 1	0.040 to 0.050	0.050 to 0.065
Flat Creek Tributary No. 2	0.04	0.050 to 0.065
Limestone Creek	0.045 to 0.060	0.060 to 0.150
Limestone Creek Tributary	0.050 to 0.060	0.100 to 0.150
Lollis Creek	0.050 to 0.070	0.060 to 0.120
Mitchell Creek	0.050 to 0.070	0.100
Mud Creek	0.040 to 0.055	0.040 to 0.110
Mulberry Creek Tributary	0.050 to 0.070	0.080 to 0.120
Mulberry River/Mulberry Creek	0.050 to 0.070	0.060 to 0.100
Sherwood Creek	0.040 to 0.045	0.035 to 0.100
Suwanee Creek	0.040 to 0.60	0.070 to 0.150
Suwanee Creek Tributary No. 4	0.055	0.070 to 0.150
Upper Mitchell Creek	0.030 to 0.045	0.040 to 0.075
Wahoo Creek	0.040 to 0.055	0.040 to 0.110
Wahoo Creek Tributary	0.040 to 0.055	0.040 to 0.110
Walnut Creek	0.050 to 0.070	0.050 to 0.120
West Fork Little River	0.035	0.033 to 0.100

### 5.3 Coastal Analyses

This section is not applicable to this Flood Risk Project.

**Table 15: Summary of Coastal Analyses**

**[Not Applicable to this Flood Risk Project]**

### **5.3.1 Total Stillwater Elevations**

This section is not applicable to this Flood Risk Project.

#### **Figure 8: 1% Annual Chance Total Stillwater Elevations for Coastal Areas**

**[Not Applicable to this Flood Risk Project]**

#### **Table 16: Tide Gage Analysis Specifics**

**[Not Applicable to this Flood Risk Project]**

### **5.3.2 Waves**

This section is not applicable to this Flood Risk Project.

### **5.3.3 Coastal Erosion**

This section is not applicable to this Flood Risk Project.

### **5.3.4 Wave Hazard Analyses**

This section is not applicable to this Flood Risk Project.

#### **Table 17: Coastal Transect Parameters**

**[Not Applicable to this Flood Risk Project]**

#### **Figure 9: Transect Location Map**

**[Not Applicable to this Flood Risk Project]**

## **5.4 Alluvial Fan Analyses**

This section is not applicable to this Flood Risk Project.

#### **Table 18: Summary of Alluvial Fan Analyses**

**[Not Applicable to this Flood Risk Project]**

#### **Table 19: Results of Alluvial Fan Analyses**

**[Not Applicable to this Flood Risk Project]**

## SECTION 6.0 – MAPPING METHODS

### 6.1 Vertical and Horizontal Control

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 North American Vertical Datum of 1988 (NAVD 88). 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), 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

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 the 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 Hall County are provided in Table 20.

**Table 20: Countywide Vertical Datum Conversion**

Quadrangle Name	Quadrangle Corner	Conversion from NGVD29 to NAVD88 (feet)
Murrayville	NE	0.056
Clermont	NE	0.112
Lula	NE	0.062
Chestatee	NW	0.039
Chestatee	NE	0.066
Gainesville	NE	0.089
Gillsville	NE	0.026

Quadrangle Name	Quadrangle Corner	Conversion from NGVD29 to NAVD88 (feet)
Flowery Branch	NW	0.082
Flowery Branch	NE	0.089
Chestnut Mountain	NE	0.043
Pendergrass	NE	-0.016
Chestnut Mountain	SE	-0.010
Flowery Branch	SE	0.046
Flowery Branch	SW	0.128
Average Conversion from NGVD29 to NAVD88 = 0.058 feet		

**Table 21: Stream-by-Stream Vertical Datum Conversion**  
**[Not Applicable to this Flood Risk Project]**

**6.2 Base Map**

The FIRMs and FIS Report for this project have been produced in a digital format. The flood hazard information was converted to a Geographic Information System (GIS) format that meets FEMA’s FIRM database specifications and geographic information standards. This information is provided in a digital format so that it can be incorporated into a local GIS and be accessed more easily by the community. The FIRM Database includes most of the tabular information contained in the FIS Report in such a way that the data can be associated with pertinent spatial features. For example, the information contained in the Floodway Data table and Flood Profiles can be linked to the cross sections that are shown on the FIRMs. Additional information about the FIRM Database and its contents can be found in FEMA’s *Guidelines and Standards for Flood Risk Analysis and Mapping*, [www.fema.gov/guidelines-and-standards-flood-risk-analysis-and-mapping](http://www.fema.gov/guidelines-and-standards-flood-risk-analysis-and-mapping).

Base map information shown on the FIRM was derived from the sources described in Table 22.

**Table 22: Base Map Sources**

Data Type	Data Provider	Data Date	Data Scale	Data Description
Hall County Roads	Hall County, Georgia GIS	08/03/2015	1:24,000	Road Centerline Data
TIGER/Line Shapefiles	U.S. Census Bureau	08/01/2014	1:12,000	Railroads and Airports
NAIP Aerial Base Map 2013	USDA - FSA Aerial Photography Field Office	11/27/2013	1:12,000	Aerial Imagery

Data Type	Data Provider	Data Date	Data Scale	Data Description
National Hydrography Dataset (NHD)	USDA/NRCS - National Geospatial Center of Excellence	11/04/2014	1:100,000	Hydrologic Features
Flood Insurance Study Hall County, Georgia and Incorporated Areas	Federal Emergency Management Agency	09/29/2006	1:12,000	FIRM Panels, Political Boundaries, and General Structures

### 6.3 Floodplain and Floodway Delineation

The FIRM shows tints, screens, and symbols to indicate floodplains and floodways as well as the locations of selected cross sections used in the hydraulic analyses and floodway computations.

For riverine flooding sources, the mapped floodplain boundaries shown on the FIRM have been delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were interpolated using the topographic elevation data described in Table 23.

In cases where the 1% and 0.2% annual chance floodplain boundaries are close together, only the 1% 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.

The floodway widths presented in this FIS Report and on the FIRM were computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. Table 2 indicates the flooding sources for which floodways have been determined. The results of the floodway computations for those flooding sources have been tabulated for selected cross sections and are shown in Table 24, “Floodway Data.”

**Table 23: Summary of Topographic Elevation Data used in Mapping**

Community	Flooding Source	Source for Topographic Elevation Data			
		Description	Scale	Contour Interval	Citation
Hall County and Incorporated Areas	All within HUC 03130001	Georgia Mountains Regional Commission	1:12,000	2 ft	GAMRC2010

Community	Flooding Source	Source for Topographic Elevation Data			
		Description	Scale	Contour Interval	Citation
Hall County and Incorporated Areas	All within HUC 03070101	Hall County Digital Topography February 1999 & February 2001	Unknown	2 ft 4 ft	FEMA2006b

BFEs shown at cross sections on the FIRM represent the 1% annual chance water surface 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 base flood elevations.

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0	76	714	4.3	1,085.0 <sup>3</sup>	1,082.4	1,082.7	0.3
B	2,174	87 <sup>2</sup>	992	3.1	1,090.6	1,090.6	1,090.6	0.0
C	3,476	188	1,254	2.3	1,095.8	1,095.8	1,095.9	0.1
D	4,890	51	431	4.7	1,102.7	1,102.7	1,103.5	0.8
E	6,127	110 <sup>2</sup>	716	2.8	1,114.3	1,114.3	1,114.7	0.4
F	8,130	54	410	4.9	1,120.6	1,120.6	1,120.8	0.2
G	9,790	113	463	4.4	1,129.2	1,129.2	1,129.6	0.4
H	10,692	217	849	1.8	1,131.9	1,131.9	1,132.3	0.4
I	11,966	157 <sup>2</sup>	723	2.1	1,141.2	1,141.2	1,141.5	0.3
J	12,125	130 <sup>2</sup>	999	1.5	1,141.5	1,141.5	1,141.8	0.3
K	13,540	207	1,261	1.2	1,150.4	1,150.4	1,150.6	0.2
L	16,125	62	525	1.4	1,171.7	1,171.7	1,171.7	0.0
M	17,392	20	68	10.5	1,176.0	1,176.0	1,176.0	0.0

<sup>1</sup>Feet above limit of detailed study (Limit of detailed study is located approximately 2,000 feet downstream of McEver Road)

<sup>2</sup>Mapped floodway width differs from modeled floodway width due to redelineation

<sup>3</sup>Elevation computed without consideration of backwater effects from Lake Sidney Lanier

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GEORGIA

AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: BALUS CREEK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	180	51	355	5.3	1,101.2 <sup>2</sup>	1,100.4	1,100.5	0.1
B	2,860	47	363	5.2	1,113.5	1,113.5	1,114.2	0.7
C	4,810	40 <sup>3</sup>	303	6.2	1,124.9	1,124.9	1,125.9	1.0
D	5,900	51	383	4.9	1,131.8	1,131.8	1,132.5	0.7

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

<sup>2</sup>Elevation computed without consideration of backwater effects from Balus Creek

<sup>3</sup>Mapped floodway width differs from modeled floodway width due to redelineation

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GEORGIA

AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: BALUS CREEK TRIBUTARY NO. 1

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	750	45	457	6.5	846.7	841.7 <sup>2</sup>	842.7	1.0
B	3,800	48	219	6.2	850.9	850.9	851.6	0.7
C	4,320	113	110	4.1	853.0	853.0	853.5	0.5
D	5,420	45	89	6.9	856.6	856.6	857.3	0.7
E	6,570	85	85	4.5	859.3	859.3	860.2	0.9
F	9,950	200 <sup>3</sup>	321	7.8	876.3	876.3	877.1	0.8
G	12,800	39	362	6.9	887.3	887.3	888.1	0.8
H	14,580	99	638	3.8	894.4	894.4	895.0	0.6
I	15,700	140 <sup>3</sup>	999	2.4	896.3	896.3	896.6	0.3
J	17,900	40 <sup>3</sup>	812	2.4	899.4	899.4	899.5	0.1
K	18,558	122	634	3.1	908.5	908.5	909.2	0.7
L	21,200	108	495	3.9	919.9	919.9	920.6	0.7
M	23,150	40	295	6.6	928.9	928.9	929.8	0.9
N	24,528	62	455	4.3	943.2	943.2	943.2	0.0
O	24,800	38	382	5.1	943.5	943.5	943.5	0.0
P	26,604	231	1,220	1.6	951.0	951.0	951.2	0.2
Q	27,800	130	735	2.6	955.8	955.8	956.3	0.5
R	29,900	71	271	5.4	961.9	961.9	962.5	0.6
S	32,400	29	119	8.8	999.1	999.1	999.1	0.0
T	33,934	72	402	2.1	1,018.1	1,018.1	1,018.1	0.0
U	35,500	135	147	5.7	1,062.2	1,062.2	1,062.2	0.0

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

<sup>2</sup>Elevation computed without consideration of backwater effects from Walnut Creek

<sup>3</sup>Mapped floodway width differs from modeled floodway width due to redelineation

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GEORGIA

AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: CANEY FORK CREEK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	13,273	168	3,037	10.3	1,090.0	1,090.0	1,090.9	0.9
B	15,465	174	3,368	9.3	1,093.6	1,093.6	1,094.3	0.7
C	17,252	158	3,165	9.9	1,095.3	1,095.3	1,096.2	0.9
D	20,483	217	4,423	7.1	1,099.1	1,099.1	1,099.9	0.8
E	24,270	165	3,107	10.1	1,101.7	1,101.7	1,102.4	0.8
F	26,874	166	3,068	10.0	1,105.4	1,105.4	1,106.1	0.7
G	29,929	187	3,270	9.3	1,109.8	1,109.8	1,110.6	0.8

<sup>1</sup>Distances are measured in feet above approximately 240 feet downstream of Belton Bridge Road

TABLE 24	<b>FEDERAL EMERGENCY MANAGEMENT AGENCY</b> <b>HALL COUNTY, GEORGIA</b> <b>AND INCORPORATED AREAS</b>	<b>FLOODWAY DATA</b>
		<b>FLOODING SOURCE: CHATTAHOOCHEE RIVER</b>

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
DEATON CREEK								
A	930 <sup>1</sup>	59	449	4.6	825.9	825.9	826.0	0.1
B	2,250 <sup>1</sup>	42	302	6.8	829.5	829.5	829.6	0.1
C	4,180 <sup>1</sup>	46	369	5.6	836.7	836.7	836.9	0.2
D	5,350 <sup>1</sup>	45	300	6.9	841.0	841.0	841.1	0.1
E	6,122 <sup>1</sup>	74	1,070	1.9	857.7	857.7	857.7	0.0
F	7,952 <sup>1</sup>	41	412	3.5	863.6	863.6	864.4	0.8
G	12,000 <sup>1</sup>	160	323	3.4	880.9	880.9	880.9	0.0
H	14,650 <sup>1</sup>	40	123	8.9	893.2	893.2	893.2	0.0
I	16,550 <sup>1</sup>	37	106	7.5	906.1	906.1	906.1	0.0
J	18,300 <sup>1</sup>	29	151	5.3	920.8	920.8	920.8	0.0
DUNCAN CREEK								
A	375 <sup>2</sup>	34	134	11.4	883.4	883.4	883.4	0.0
B	3,341 <sup>2</sup>	34	135	11.3	933.7	933.7	933.7	0.0
C	4,367 <sup>2</sup>	37	189	8.1	950.3	950.3	950.6	0.3
D	5,435 <sup>2</sup>	44	201	0.7	954.6	954.6	955.5	0.9
E	6,206 <sup>2</sup>	32	26	5.2	957.0	957.0	957.0	0.0

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

<sup>2</sup>Feet above county boundary

**TABLE 24**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**HALL COUNTY, GA  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**DEATON CREEK – DUNCAN CREEK**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC )	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	10,058	92	727	6.0	1,089.8	1,089.8	1,090.3	0.5
B	11,575	264	1,463	3.0	1,094.2	1,094.2	1,094.9	0.7
C	12,274	113	706	5.3	1,095.8	1,095.8	1,096.4	0.6
D	13,886	50 <sup>2</sup>	546	6.8	1,100.6	1,100.6	1,101.4	0.8
E	14,425	254	1,613	2.3	1,102.0	1,102.0	1,102.9	0.9
F	15,129	156 <sup>2</sup>	1,537	2.4	1,106.2	1,106.2	1,107.1	0.9
G	16,764	340	1,997	1.9	1,107.5	1,107.5	1,108.3	0.8
H	17,873	47	395	9.4	1,108.9	1,108.9	1,109.6	0.7
I	19,014	65	687	5.4	1,115.2	1,115.2	1,116.2	1.0
J	19,116	279	2,389	1.6	1,115.9	1,115.9	1,116.9	1.0
K	20,633	206	2,074	1.8	1,122.1	1,122.1	1,122.4	0.3
L	22,315	805	5,006	0.6	1,122.4	1,122.4	1,122.8	0.4
M	23,448	364	1,762	1.8	1,122.5	1,122.5	1,122.9	0.4
N	24,230	94 <sup>2</sup>	605	5.2	1,123.1	1,123.1	1,123.7	0.6
O	24,944	254	1,362	2.3	1,125.7	1,125.7	1,126.6	0.9
P	26,504	52 <sup>2</sup>	482	6.6	1,128.3	1,128.3	1,129.2	0.9
Q	28,193	49	341	9.3	1,138.8	1,138.8	1,139.6	0.8
R	29,055	62	301	10.5	1,167.4	1,167.4	1,167.4	0.0
S	30,790	48	546	5.8	1,178.7	1,178.7	1,179.7	1.0
T	31,960	165	1,209	2.6	1,180.9	1,180.9	1,181.9	1.0
U	34,275	47	453	7.0	1,185.3	1,185.3	1,186.1	0.8

<sup>1</sup>Feet above Lake Sidney Lanier

<sup>2</sup>Mapped floodway width differs from modeled floodway width due to redelineation

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**HALL COUNTY, GEORGIA**  
AND INCORPORATED AREAS

**FLOODWAY DATA**

**FLOODING SOURCE: EAST FORK LITTLE RIVER**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
V	35,865	48	536	5.9	1,191.0	1,191.0	1,191.8	0.8
W	36,093	82	756	4.2	1,192.0	1,192.0	1,192.9	0.9
X	36,276	82 <sup>2</sup>	328	9.7	1,229.5	1,229.5	1,229.6	0.1
Y	37,151	56	507	5.4	1,237.0	1,237.0	1,237.4	0.4
Z	39,133	65	498	5.5	1,243.3	1,243.3	1,244.1	0.8
AA	41,921	120	914	3.0	1,256.5	1,256.5	1,257.0	0.5
AB	43,493	130	635	4.3	1,259.2	1,259.2	1,260.2	1.0
AC	44,197	49	452	6.1	1,261.8	1,261.8	1,262.6	0.8
AD	46,459	358	1,503	1.8	1,266.8	1,266.8	1,267.3	0.5
AE	48,253	365	1,343	1.9	1,272.2	1,272.2	1,272.7	0.5
AF	48,935	41	350	7.1	1,273.3	1,273.3	1,274.1	0.8
AG	50,924	137	851	2.9	1,278.0	1,278.0	1,279.0	1.0
AH	52,406	59	401	6.2	1,283.0	1,283.0	1,283.3	0.3
AI	54,640	84	584	4.3	1,289.2	1,289.2	1,290.2	1.0
AJ	56,414	70	507	4.1	1,293.2	1,293.2	1,294.1	0.9
AK	57,973	41	319	6.6	1,298.0	1,298.0	1,298.5	0.5
AL	59,386	55	384	5.5	1,303.2	1,303.2	1,303.5	0.3

<sup>1</sup>Feet above Lake Sidney Lanier

<sup>2</sup>Mapped floodway width differs from modeled floodway width due to redelineation

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**HALL COUNTY, GEORGIA**  
 AND INCORPORATED AREAS

**FLOODWAY DATA**

**FLOODING SOURCE: EAST FORK LITTLE RIVER**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	9,002	89	641	8.1	1,085.0	1,083.2 <sup>2</sup>	1,084.2	1.0
B	10,200	52	363	14.2	1,091.0	1,091.0	1,091.1	0.1
C	10,883	67	581	9.9	1,097.6	1,097.6	1,098.6	1.0
D	11,187	85	989	7.6	1,103.8	1,103.8	1,103.8	0.0
E	12,120	48	351	14.4	1,105.9	1,105.9	1,106.0	0.0
F	12,648	188	1,465	3.4	1,113.5	1,113.5	1,114.5	1.0
G	15,792	176	1,237	4.1	1,124.2	1,124.2	1,124.8	0.6
H	18,415	62	495	7.6	1,128.7	1,128.7	1,129.3	0.6
I	18,541	58	553	6.8	1,131.1	1,131.1	1,131.1	0.0
J	21,495	64	544	6.7	1,136.0	1,136.0	1,136.6	0.6
K	21,644	59	654	5.7	1,139.8	1,139.8	1,140.1	0.3
L	23,099	110	779	4.2	1,141.3	1,141.3	1,142.3	1.0
M	23,219	84	882	3.9	1,145.0	1,145.0	1,145.0	0.0
N	26,089	142	447	6.5	1,148.5	1,148.5	1,149.0	0.5
O	26,229	245	1,746	1.7	1,151.8	1,151.8	1,152.7	0.9
P	27,904	56	404	6.3	1,153.8	1,153.8	1,154.5	0.6
Q	28,077	75	758	3.9	1,159.7	1,159.7	1,159.7	0.0
R	30,461	46	299	8.1	1,161.5	1,161.5	1,161.7	0.2
S	30,598	47	352	6.8	1,163.7	1,163.7	1,164.4	0.7
T	31,565	37	276	8.8	1,166.2	1,166.2	1,166.7	0.5
U	31,676	49	385	6.3	1,168.5	1,168.5	1,169.0	0.5

<sup>1</sup>Distances are measured in feet above confluence with Lake Sidney Lanier

<sup>2</sup>Elevation computed without consideration of backwater effects from Lake Sidney Lanier

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**HALL COUNTY, GEORGIA**  
AND INCORPORATED AREAS

**FLOODWAY DATA**

**FLOODING SOURCE: FLAT CREEK**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
V	33,760	45	302	7.5	1,171.2	1,171.2	1,172.2	1.0
W	33,868	45	368	6.2	1,174.1	1,174.1	1,174.4	0.3
X	34,526	33	193	11.7	1,175.6	1,175.6	1,176.0	0.4
Y	34,658	94	564	4.0	1,179.6	1,179.6	1,180.4	0.8
Z	35,030	37	303	4.7	1,179.9	1,179.9	1,180.9	1.0
AA	35,158	109	1,271	1.5	1,184.1	1,184.1	1,185.0	0.9

<sup>1</sup>Distances are measured in feet above confluence with Lake Sidney Lanier

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**HALL COUNTY, GEORGIA**  
 AND INCORPORATED AREAS

**FLOODWAY DATA**

**FLOODING SOURCE: FLAT CREEK**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	694	22	69	7.9	1,163.0	1,163.0	1,163.5	0.5
B	1,258	36	61	0.5	1,167.5	1,167.5	1,168.1	0.6
C	1,544	27	105	0.3	1,177.5	1,177.5	1,178.5	1.0

<sup>1</sup>Distances are measured in feet above confluence with Flat Creek

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**HALL COUNTY, GEORGIA**  
 AND INCORPORATED AREAS

**FLOODWAY DATA**

**FLOODING SOURCE: FLAT CREEK TRIBUTARY NO. 1**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	222	56	130	7.9	1,174.8	1,174.8	1,175.2	0.4
B	321	56	261	3.9	1,176.8	1,176.8	1,177.5	0.7
C	950	30	111	9.2	1,179.6	1,179.6	1,179.7	0.1
D	1,349	23	157	5.7	1,183.0	1,183.0	1,183.0	0.0
E	1,687	23	333	3.5	1,186.8	1,186.8	1,186.8	0.0
F	2,432	53	306	2.6	1,187.3	1,187.3	1,187.4	0.1
G	2,518	53	290	2.8	1,190.6	1,190.6	1,190.6	0.0
H	2,896	39	223	3.4	1,190.9	1,190.9	1,191.0	0.1
I	3,155	38	294	2.6	1,193.8	1,193.8	1,193.8	0.0
J	3,344	27	161	4.6	1,193.8	1,193.8	1,193.8	0.0
K	3,654	31	157	4.8	1,195.0	1,195.0	1,195.1	0.1
L	3,779	52	358	2.1	1,198.8	1,198.8	1,198.8	0.1

<sup>1</sup>Distances are measured in feet above confluence with Flat Creek

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**HALL COUNTY, GEORGIA**  
 AND INCORPORATED AREAS

**FLOODWAY DATA**

**FLOODING SOURCE: FLAT CREEK TRIBUTARY NO. 2**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0	179	1,035	2.8	1,085.0	1,077.0 <sup>2</sup>	1,078.0	1.0
B	1,065	161	912	3.2	1,085.0	1,080.2 <sup>2</sup>	1,080.9	0.7
C	2,150	107	944	2.8	1,088.6	1,088.6	1,089.1	0.5
D	2,590	109	886	1.8	1,088.8	1,088.8	1,089.7	0.9
E	3,370	57	181	8.8	1,090.2	1,090.2	1,090.9	0.7
F	4,590	69	415	3.6	1,104.9	1,104.9	1,105.3	0.4
G	5,620	43	164	9.2	1,107.7	1,107.7	1,108.4	0.7
H	6,490	107	780	1.8	1,116.0	1,116.0	1,116.4	0.4
I	7,100	89	486	2.8	1,119.0	1,119.0	1,119.4	0.4

<sup>1</sup>Distances are measured in feet above confluence with Lake Sidney Lanier

<sup>2</sup>Elevation computed without consideration of backwater effects from Lake Sidney Lanier

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**HALL COUNTY, GEORGIA**  
 AND INCORPORATED AREAS

**FLOODWAY DATA**

**FLOODING SOURCE: LIMESTONE CREEK**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	230	136	815	2.1	1,089.0	1,089.0	1,089.9	0.9
B	1,040	114	598	2.9	1,091.0	1,091.0	1,092.0	1.0
C	2,230	63	753	2.3	1,111.1	1,111.1	1,111.2	0.1
D	3,310	32	129	11.4	1,115.5	1,115.5	1,115.5	0.0

<sup>1</sup>Distances are measured in feet above confluence with Limestone Creek

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**HALL COUNTY, GEORGIA**  
 AND INCORPORATED AREAS

**FLOODWAY DATA**

**FLOODING SOURCE: LIMESTONE CREEK TRIBUTARY**

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
LOLLIS CREEK								
A	400 <sup>1</sup>	99	652	4.9	852.6	846.4 <sup>2</sup>	847.2	0.8
B	2,035 <sup>1</sup>	76	559	5.7	854.3	854.3	855.0	0.7
C	3,820 <sup>1</sup>	78	904	3.5	859.3	859.3	859.8	0.5
D	5,248 <sup>1</sup>	61	419	7.6	863.4	863.4	863.5	0.1
E	7,670 <sup>1</sup>	354	1,341	2.3	874.1	874.1	874.8	0.7
F	10,600 <sup>1</sup>	140	835	2.4	880.6	880.6	881.5	0.9
MITCHELL CREEK								
A	1,405 <sup>3</sup>	53	375	5.4	879.3	879.3	879.7	0.4
B	4,100 <sup>3</sup>	41	351	5.7	894.0	894.0	894.4	0.4
C	6,142 <sup>3</sup>	71	361	5.0	906.6	906.6	907.3	0.7
D	7,706 <sup>3</sup>	39	299	6.1	913.1	913.1	914.1	1.0
E	8,257 <sup>3</sup>	60	332	5.5	917.4	917.4	918.3	0.9
F	9,220 <sup>3</sup>	54	510	3.5	920.5	920.5	921.4	0.9

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

<sup>2</sup>Elevation computed without consideration of backwater effects from Sherwood Creek

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

**TABLE 24**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**HALL COUNTY, GA  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**LOLLIS CREEK – MITCHELL CREEK**

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
MUD CREEK								
A	1,638 <sup>1</sup>	36	496	3.7	1,088.6	1,088.6	1,088.6	0.0
B	2,180 <sup>1</sup>	30	261	7.0	1,088.6	1,088.6	1,088.9	0.3
C	2,925 <sup>1</sup>	70	398	4.6	1,091.9	1,091.9	1,092.8	0.9
D	3,992 <sup>1</sup>	30	213	8.6	1,103.0	1,103.0	1,103.0	0.0
E	6,952 <sup>1</sup>	40	239	6.6	1,122.5	1,122.5	1,122.9	0.4
F	8,559 <sup>1</sup>	150	550	2.9	1,126.4	1,126.4	1,127.4	1.0
G	9,300 <sup>1</sup>	90	376	4.2	1,127.5	1,127.5	1,128.5	1.0
H	9,584 <sup>1</sup>	60	600	2.6	1,136.9	1,136.9	1,136.9	0.0
I	10,494 <sup>1</sup>	90	701	1.9	1,136.9	1,136.9	1,137.1	0.2
J	11,361 <sup>1</sup>	90	436	3.1	1,137.0	1,137.0	1,137.5	0.5
K	11,521 <sup>1</sup>	70	560	2.4	1,139.8	1,139.8	1,140.4	0.6
L	12,125 <sup>1</sup>	80	528	2.5	1,139.8	1,139.8	1,140.6	0.8

<sup>1</sup> Feet above confluence with Lake Sidney Lanier

<b>TABLE 24</b>	<b>FEDERAL EMERGENCY MANAGEMENT AGENCY</b>	<b>FLOODWAY DATA</b>
	<b>HALL COUNTY, GA AND INCORPORATED AREAS</b>	<b>MUD CREEK</b>

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
MULBERRY CREEK TRIBUTARY								
A	308 <sup>1</sup>	34	303	8.6	884.8	883.0 <sup>2</sup>	884.0	1.0
B	2,338 <sup>1</sup>	37	300	8.7	909.7	909.7	909.9	0.2
C	4,508 <sup>1</sup>	131	1,290	2.0	930.5	930.5	831.1	0.6
D	8,003 <sup>1</sup>	31	267	9.7	973.6	973.6	974.5	0.9
MULBERRY RIVER/ MULBERRY CREEK								
A	1,810 <sup>3</sup>	71	629	5.5	809.8	809.8	809.8	0.0
B	4,565 <sup>3</sup>	86	1,020	3.4	815.3	815.3	815.6	0.3
C	5,786 <sup>3</sup>	71	759	4.6	817.6	817.6	817.8	0.2
D	8,785 <sup>3</sup>	94	1,082	3.2	822.0	822.0	822.5	0.5
E	12,775 <sup>3</sup>	64	638	5.5	829.4	829.4	829.4	0.0
F	16,165 <sup>3</sup>	67	785	4.4	839.0	839.0	839.0	0.0
G	17,783 <sup>3</sup>	243	871	4.0	843.4	843.4	843.8	0.4
H	19,155 <sup>3</sup>	124	903	3.9	847.2	847.2	848.0	0.8
I	21,070 <sup>3</sup>	56	659	5.3	852.2	852.2	853.1	0.9
J	23,340 <sup>3</sup>	217	772	3.9	860.0	860.0	860.9	0.9

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

<sup>2</sup>Elevation computed without consideration of backwater effects from Mulberry Creek

**TABLE 24**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**HALL COUNTY, GA  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**MULBERRY CREEK TRIBUTARY –  
MULBERRY RIVER / MULBERRY CREEK**

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
MULBERRY RIVER/ MULBERRY CREEK (CONTINUED)								
K	26,350	191	1,277	2.4	866.0	866.0	866.9	0.9
L	27,635	59	564	5.4	868.4	868.4	869.1	0.7
M	29,490	96	601	5.1	876.4	876.4	877.4	1.0
N	30,663	74	772	3.9	882.7	882.7	883.6	0.9
O	31,700	162	1,180	2.6	884.5	884.5	885.4	0.9
P	34,000	48	458	5.7	892.7	892.7	893.4	0.7
Q	35,995	51	534	4.9	899.5	899.5	900.4	0.9
R	36,841	100	990	2.6	903.7	903.7	904.3	0.6
S	39,160	44	493	5.3	909.9	909.9	910.6	0.7
T	41,350	72	537	3.6	919.8	919.8	920.5	0.7
U	44,290	37	315	6.1	932.7	932.7	933.5	0.8
V	46,705	44	365	5.3	946.4	946.4	947.3	0.9
W	48,680	62	470	4.1	953.9	953.9	954.8	0.9
X	50,965	41	296	5.2	962.5	962.5	963.4	0.9
Y	53,300	30	217	7.1	981.0	981.0	981.8	0.8

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

**TABLE 24**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**HALL COUNTY, GA  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**MULBERRY RIVER / MULBERRY CREEK**

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
<b>SHERWOOD CREEK</b>								
A	940 <sup>1</sup>	266	2,878	5.2	843.6	843.6	844.5	0.9
B	2,915 <sup>1</sup>	162	1,553	8.0	845.2	845.2	845.9	0.7
C	4,854 <sup>1</sup>	119	1,068	10.0	849.5	849.5	850.0	0.5
D	6,517 <sup>1</sup>	72	670	13.9	852.7	852.7	852.9	0.2
E	7,938 <sup>1</sup>	381	2,417	4.7	858.3	858.3	859.0	0.7
F	8,905 <sup>1</sup>	46	422	13.7	868.3	868.3	868.9	0.6
G	9,508 <sup>1</sup>	108	809	9.5	874.4	874.4	875.0	0.6
H	10,495 <sup>1</sup>	181	1,258	7.0	896.9	896.9	897.8	0.9
I	12,044 <sup>1</sup>	225	1,678	6.0	900.8	900.8	901.5	0.7
J	13,587 <sup>1</sup>	123	724	12.1	903.6	903.6	904.0	0.4
K	14,985 <sup>1</sup>	242	1,592	7.8	910.7	910.7	911.3	0.6
L	15,815 <sup>1</sup>	168	1,082	9.0	911.7	911.7	912.2	0.5
M	16,761 <sup>1</sup>	189	1,101	9.3	915.3	915.3	915.8	0.5
N	18,688 <sup>1</sup>	254	1,616	5.5	922.5	922.5	922.8	0.3
<b>SUWANEE CREEK</b>								
A	95,128 <sup>2</sup>	12	37	9.9	1,113.0	1,113.0	1,114.0	1.0

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

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

**TABLE 24**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**HALL COUNTY, GA  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**SHERWOOD CREEK – SUWANEE CREEK**

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
SUWANEE CREEK TRIBUTARY NO. 4 A	3,206 <sup>1</sup>	22	119	12.5	1,080.8	1,080.8	1,081.8	1.0
UPPER MITCHELL CREEK A	651 <sup>2</sup>	131	364	5.8	1,009.5	1,009.5	1,009.5	0.0

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

<sup>2</sup>Feet above Limit of Detailed Study

**TABLE 24**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**HALL COUNTY, GA  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**SUWANEE CREEK TRIBUTARY NO.4 –  
UPPER MITCHELL CREEK**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	2,386	114	1,004	5.4	1,085.0	1,081.5 <sup>2</sup>	1,082.5	1.0
B	3,000	70	396	13.6	1,091.7	1,091.7	1,091.7	0.0
C	3,727	160	1,000	5.4	1,099.6	1,099.6	1,099.6	0.0
D	4,161	100	776	7.0	1,099.8	1,099.8	1,100.0	0.2
E	5,212	102	629	8.6	1,102.9	1,102.9	1,103.5	0.6
F	7,140	250	1,145	4.7	1,110.0	1,110.0	1,110.6	0.6
G	8,497	200	885	6.1	1,112.6	1,112.6	1,113.5	0.9
H	10,777	75	648	7.8	1,121.9	1,121.9	1,121.9	0.0
I	12,715	300	2,283	2.2	1,131.8	1,131.8	1,131.8	0.0
J	14,140	300	1,718	2.9	1,132.4	1,132.4	1,132.7	0.3
K	15,972	55	577	5.5	1,135.5	1,135.5	1,135.8	0.3
L	17,450	60	432	7.3	1,137.6	1,137.6	1,138.2	0.6
M	18,300	120	760	4.2	1,139.8	1,139.8	1,140.6	0.8
N	18,935	120	725	4.4	1,140.6	1,140.6	1,141.6	1.0
O	20,380	175	632	4.7	1,144.9	1,144.9	1,145.2	0.3
P	21,616	145	741	4.0	1,150.7	1,150.7	1,150.8	0.1
Q	22,366	225	1,267	2.4	1,151.9	1,151.9	1,152.1	0.2
R	23,492	67	317	9.4	1,152.2	1,152.2	1,153.2	1.0
S	25,519	100	355	4.6	1,162.8	1,162.8	1,163.4	0.6
T	27,588	175	815	3.4	1,166.9	1,166.9	1,167.9	1.0
U	29,165	100	611	4.5	1,170.2	1,170.2	1,170.8	0.6
V	29,656	100	448	6.2	1,171.4	1,171.4	1,172.1	0.7
W	31,825	77	348	6.8	1,185.1	1,185.1	1,185.1	0.0

<sup>1</sup>Feet above confluence with Lake Sidney Lanier

<sup>2</sup>Elevation computed without consideration of backwater effects from Lake Sidney Lanier

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GEORGIA

AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: WAHOO CREEK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	429	60	118	7.4	1,170.9	1,170.1 <sup>2</sup>	1,170.1	0.0
B	1,427	60	239	3.7	1,175.7	1,175.7	1,176.6	0.9
C	1,610	40	195	4.5	1,177.2	1,177.2	1,177.6	0.4

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

<sup>2</sup>Elevation computed without consideration of backwater effects from Wahoo Creek

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**HALL COUNTY, GEORGIA**  
 AND INCORPORATED AREAS

**FLOODWAY DATA**

**FLOODING SOURCE: WAHOO CREEK TRIBUTARY**

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
WALNUT CREEK								
A	1,460	344	2,451	2.3	830.3	830.3	831.3	1.0
B	3,590	63	732	7.6	833.7	833.7	834.6	0.9
C	6,090	122	1,346	4.1	844.2	844.2	845.1	0.9
D	7,582	121	1,331	3.2	846.9	846.9	847.8	0.9
E	9,090	125	1,396	3.1	849.2	849.2	850.0	0.8
F	10,890	93	866	4.9	852.7	852.7	853.3	0.6
G	14,289	110	923	4.6	874.4	874.4	874.9	0.5
H	16,825	70	843	5.1	885.7	885.7	886.4	0.7
I	19,345	123	1,178	3.6	891.0	891.0	891.4	0.4
J	20,675	48	666	6.4	893.9	893.9	894.4	0.5
K	21,940	59	830	5.2	898.0	898.0	898.6	0.6
L	23,920	66	833	5.1	902.8	902.8	903.3	0.5
M	25,345	67	787	5.4	906.7	906.7	907.2	0.5
N	27,635	85	959	3.9	912.7	912.7	913.5	0.8
O	28,755	151	1,432	2.6	914.4	914.4	915.2	0.8
P	30,420	170	1,382	2.7	916.3	916.3	917.0	0.7
Q	32,650	182	882	4.3	920.9	920.9	921.5	0.6
R	34,640	192	1,118	2.9	926.4	926.4	926.8	0.4
S	36,265	133	813	4.0	929.6	929.6	930.1	0.5
T	37,472	136	950	3.2	935.0	935.0	935.7	0.7
U	39,595	191	2,180	1.4	936.7	936.7	937.2	0.5
V	41,276	139	1,801	1.7	943.9	943.9	944.4	0.5
W	43,352	279	1,634	1.9	945.5	945.5	945.9	0.4
X	44,870	63	578	4.3	948.1	948.1	948.5	0.4

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

**TABLE 24**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**HALL COUNTY, GA  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**WALNUT CREEK**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,424	99	584	8.3	1,085.0	1,074.6 <sup>2</sup>	1,074.7	0.1
B	6,365	250	1,778	2.6	1,085.0	1,082.8 <sup>2</sup>	1,083.5	0.7
C	9,747	258	797	5.5	1,085.0	1,084.5 <sup>2</sup>	1,085.1	0.6
D	11,102	60	492	8.8	1,087.4	1,087.4	1,088.0	0.6
E	11,205	92	796	5.7	1,091.5	1,091.5	1,091.5	0.0
F	13,372	63	493	8.7	1,093.2	1,093.2	1,093.4	0.2
G	14,832	63	481	8.9	1,104.3	1,104.3	1,104.4	0.1
H	16,571	69	324	11.1	1,112.4	1,112.4	1,112.4	0.0
I	17,000	61	480	7.5	1,118.8	1,118.8	1,119.2	0.4
J	18,693	130	595	6.0	1,121.3	1,121.3	1,122.0	0.7
K	18,759	160	1,028	3.5	1,123.5	1,123.5	1,124.2	0.7
L	20,015	37	335	10.5	1,124.3	1,124.3	1,125.3	1.0
M	22,640	163	620	5.6	1,137.0	1,137.0	1,137.2	0.2
N	24,020	41	268	13.0	1,153.0	1,153.0	1,153.4	0.4
O	24,716	61	546	6.2	1,164.7	1,164.7	1,165.1	0.4
P	25,842	44	339	10.1	1,165.9	1,165.9	1,166.8	0.9
Q	25,910	51	592	5.8	1,170.7	1,170.7	1,170.7	0.0
R	28,234	57	445	7.5	1,174.1	1,174.1	1,175.0	0.9
S	30,104	78	526	6.3	1,187.0	1,187.0	1,187.0	0.0
T	32,221	166	635	5.1	1,195.7	1,195.7	1,195.7	0.0
U	34,165	54	465	6.9	1,201.5	1,201.5	1,201.9	0.4

<sup>1</sup>Distances are measured in feet above confluence with Lake Sidney Lanier

<sup>2</sup>Elevation computed without consideration of backwater effects from Lake Sidney Lanier

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**HALL COUNTY, GEORGIA**  
AND INCORPORATED AREAS

**FLOODWAY DATA**

**FLOODING SOURCE: WEST FORK LITTLE RIVER**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
V	34,248	51	667	4.8	1,207.3	1,207.3	1,207.3	0.0
W	37,797	154	443	6.4	1,208.3	1,208.3	1,209.1	0.8
X	43,253	49	325	8.3	1,222.9	1,222.9	1,223.2	0.3
Y	45,579	48	466	5.2	1,231.8	1,231.8	1,232.5	0.7

<sup>1</sup>Distances are measured in feet above confluence with Lake Sidney Lanier

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**HALL COUNTY, GEORGIA**  
 AND INCORPORATED AREAS

**FLOODWAY DATA**

**FLOODING SOURCE: WEST FORK LITTLE RIVER**

## **Table 25: Flood Hazard and Non-Encroachment Data for Selected Streams**

**[Not Applicable to this Flood Risk Project]**

### **6.4 Coastal Flood Hazard Mapping**

This section is not applicable to this Flood Risk Project.

## **Table 26: Summary of Coastal Transect Mapping Considerations**

**[Not Applicable to this Flood Risk Project]**

### **6.5 FIRM Revisions**

This FIS Report and the FIRM are based on the most up-to-date information available to FEMA at the time of its publication; however, flood hazard conditions change over time. Communities or private parties may request flood map revisions at any time. Certain types of requests require submission of supporting data. FEMA may also initiate a revision. Revisions to FIS projects may take several forms, including Letters of Map Amendment (LOMAs), Letters of Map Revision Based on Fill (LOMR-Fs), Letters of Map Revision (LOMRs) (referred to collectively as Letters of Map Change (LOMCs)), Physical Map Revisions (PMRs), and FEMA-contracted restudies. These types of revisions are further described below. Some of these types of revisions do not result in the republishing of the FIS Report. To assure that any user is aware of all revisions, it is advisable to contact the community repository of flood-hazard data (shown in Table 31, “Map Repositories”).

#### **6.5.1 Letters of Map Amendment**

A LOMA is an official revision by letter to an effective NFIP map. A LOMA results from an administrative process that involves the review of scientific or technical data submitted by the owner or lessee of property who believes the property has incorrectly been included in a designated SFHA. A LOMA amends the currently effective FEMA map and establishes that a specific property is not located in a SFHA.

To obtain an application for a LOMA, visit [www.fema.gov/floodplain-management/letter-map-amendment-loma](http://www.fema.gov/floodplain-management/letter-map-amendment-loma) and download the form “MT-1 Application Forms and Instructions for Conditional and Final Letters of Map Amendment and Letters of Map Revision Based on Fill”. Visit the “Flood Map-Related Fees” section to determine the cost, if any, of applying for a LOMA.

FEMA offers a tutorial on how to apply for a LOMA. The LOMA Tutorial Series can be accessed at [www.fema.gov/online-tutorials](http://www.fema.gov/online-tutorials).

For more information about how to apply for a LOMA, call the FEMA Map Information eXchange; toll free, at 1-877-FEMA MAP (1-877-336-2627).

### **6.5.2 Letters of Map Revision Based on Fill**

A LOMR-F is an official revision by letter to an effective NFIP map. A LOMR-F states FEMA’s determination concerning whether a structure or parcel has been elevated on fill above the base flood elevation and is, therefore, excluded from the SFHA.

Information about obtaining an application for a LOMR-F can be obtained in the same manner as that for a LOMA, by visiting [www.fema.gov/floodplain-management/letter-map-amendment-loma](http://www.fema.gov/floodplain-management/letter-map-amendment-loma) for the “MT-1 Application Forms and Instructions for Conditional and Final Letters of Map Amendment and Letters of Map Revision Based on Fill” or by calling the FEMA Map Information eXchange, toll free, at 1-877-FEMA MAP (1-877-336-2627). Fees for applying for a LOMR-F, if any, are listed in the “Flood Map-Related Fees” section.

A tutorial for LOMR-F is available at [www.fema.gov/online-tutorials](http://www.fema.gov/online-tutorials).

### **6.5.3 Letters of Map Revision**

A LOMR is an official revision to the currently effective FEMA map. It is used to change flood zones, floodplain and floodway delineations, flood elevations and planimetric features. All requests for LOMRs should be made to FEMA through the chief executive officer of the community, since it is the community that must adopt any changes and revisions to the map. If the request for a LOMR is not submitted through the chief executive officer of the community, evidence must be submitted that the community has been notified of the request.

To obtain an application for a LOMR, visit [www.fema.gov/national-flood-insurance-program-flood-hazard-mapping/mt-2-application-forms-and-instructions](http://www.fema.gov/national-flood-insurance-program-flood-hazard-mapping/mt-2-application-forms-and-instructions) and download the form “MT-2 Application Forms and Instructions for Conditional Letters of Map Revision and Letters of Map Revision”. Visit the “Flood Map-Related Fees” section to determine the cost of applying for a LOMR. For more information about how to apply for a LOMR, call the FEMA Map Information eXchange; toll free, at 1-877-FEMA MAP (1-877-336-2627) to speak to a Map Specialist.

Previously issued mappable LOMCs (including LOMRs) that have been incorporated into the Hall County FIRM are listed in Table 27.

**Table 27: Incorporated Letters of Map Change**

**[Not Applicable to this Flood Risk Project]**

### **6.5.4 Physical Map Revisions**

A PMR is an official republication of a community’s NFIP map to effect changes to base flood elevations, floodplain boundary delineations, regulatory floodways and planimetric features. These changes typically occur as a result of structural works or improvements, annexations resulting in additional flood hazard areas or correction to base flood elevations or SFHAs.

The community’s chief executive officer must submit scientific and technical data to FEMA to support the request for a PMR. The data will be analyzed and the map will be revised if warranted. The community is provided with copies of the revised information and is afforded a review period. When the base flood elevations are changed, a 90-day appeal period is provided. A 6-month adoption period for formal approval of the revised map(s) is also provided.

For more information about the PMR process, please visit <http://www.fema.gov> and visit the “Flood Map Revision Processes” section.

### 6.5.5 Contracted Restudies

The NFIP provides for a periodic review and restudy of flood hazards within a given community. FEMA accomplishes this through a national watershed-based mapping needs assessment strategy, known as the Coordinated Needs Management Strategy (CNMS). The CNMS is used by FEMA to assign priorities and allocate funding for new flood hazard analyses used to update the FIS Report and FIRM. The goal of CNMS is to define the validity of the engineering study data within a mapped inventory. The CNMS is used to track the assessment process, document engineering gaps and their resolution, and aid in prioritization for using flood risk as a key factor for areas identified for flood map updates. Visit [www.fema.gov](http://www.fema.gov) to learn more about the CNMS or contact the FEMA Regional Office listed in Section 8 of this FIS Report.

### 6.5.6 Community Map History

The current FIRM presents flooding information for the entire geographic area of Hall County. Previously, separate FIRMs, Flood Hazard Boundary Maps (FHBM) and/or Flood Boundary and Floodway Maps (FBFM) may have been prepared for the incorporated communities and the unincorporated areas in the county that had identified SFHAs. Current and historical data relating to the maps prepared for the project area are presented in Table 28, “Community Map History.” A description of each of the column headings and the source of the date is also listed below.

- *Community Name* includes communities falling within the geographic area shown on the FIRM, including those that fall on the boundary line, nonparticipating communities, and communities with maps that have been rescinded. Communities with No Special Flood Hazards are indicated by a footnote. If all maps (FHBM, FBFM, and FIRM) were rescinded for a community, it is not listed in this table unless SFHAs have been identified in this community.
- *Initial Identification Date (First NFIP Map Published)* is the date of the first NFIP map that identified flood hazards in the community. If the FHBM has been converted to a FIRM, the initial FHBM date is shown. If the community has never been mapped, the upcoming effective date or “pending” (for Preliminary FIS Reports) is shown. If the community is listed in Table 28 but not identified on the map, the community is treated as if it were unmapped.
- *Initial FHBM Effective Date* is the effective date of the first Flood Hazard Boundary Map (FHBM). This date may be the same date as the Initial NFIP Map Date.
- *FHBM Revision Date(s)* is the date(s) that the FHBM was revised, if applicable.
- *Initial FIRM Effective Date* is the date of the first effective FIRM for the community. This is the first effective date that is shown on the FIRM panel.
- *FIRM Revision Date(s)* is the date(s) the FIRM was revised, if applicable. This is the revised date that is shown on the FIRM panel, if applicable. As countywide studies are completed or revised, each community listed should have its FIRM dates updated accordingly to reflect the date of the countywide study. Once the FIRMs exist in countywide format, as PMRs of FIRM panels within the county are completed, the FIRM

Revision Dates in the table for each community affected by the PMR are updated with the date of the PMR, even if the PMR did not revise all the panels within that community.

The initial effective date for the Hall County FIRM in countywide format was March 21, 2000.

**Table 28: Community Map History**

Community Name	Initial Identification Date (First NFIP Map Published)	Initial FHBM Effective Date	FHBM Revision Date(s)	Initial FIRM Effective Date	FIRM Revision Date(s)
Braselton, Town of <sup>1</sup>	04/18/1975	04/18/1975	N/A	09/29/2006	N/A
Buford, City of	04/04/1975	04/04/1975	N/A	06/15/1981	09/29/2006 03/21/2000
Clermont, Town of <sup>1</sup>	04/11/1975	04/11/1975	N/A	03/21/2000	09/29/2006
Flowery Branch, City of	06/03/1977	06/03/1977	N/A	04/15/1986	09/29/2006 03/21/2000
Gainesville, City of	08/22/1975	08/22/1975	03/07/1980 01/16/1976	07/05/1983	09/29/2006 03/21/2000 09/06/1995
Gillsville, City of <sup>1</sup>	03/21/2000	N/A	N/A	03/21/2000	09/29/2006
Hall County, Unincorporated Areas	06/23/1978	06/23/1978	N/A	11/02/1983	09/29/2006 03/21/2000 04/17/1995
Lula, City of <sup>1</sup>	03/21/2000	N/A	N/A	03/21/2000	09/29/2006
Oakwood, City of	04/04/1975	04/04/1975	07/21/1978	07/23/1982	09/29/2006 03/21/2000
Rest Haven, City of	02/03/1978	02/03/1978	N/A	06/01/1981	09/29/2006

<sup>1</sup> This community did not have a FIRM prior to the first countywide FIRM for Hall County

## SECTION 7.0 – CONTRACTED STUDIES AND COMMUNITY COORDINATION

### 7.1 Contracted Studies

Table 29 provides a summary of the contracted studies, by flooding source, that are included in this FIS Report.

**Table 29: Summary of Contracted Studies Included in this FIS Report**

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
New Detail Studies of Chattahoochee River, Flat Creek, Flat Creek Tributary No. 1, Flat Creek Tributary No. 2, West Fork Little River and various Zone A streams within HUC 03130001	<date effective>	Dewberry Consultants, LLC	EMA-2012-CA-5264	09/10/2015	City of Gainesville, City of Oakwood, Town of Clermont, City of Lula, City of Buford, Hall County Unincorporated Areas
Redelineation of Balus Creek, Balus Creek Tributary No. 1, East Fork Little River, Limestone Creek, Limestone Creek Tributary, Mud Creek, Wahoo Creek, and Wahoo Creek Tributary	<date effective>	Dewberry Consultants, LLC	EMA-2012-CA-5264	09/10/2015	City of Flowery Branch, City of Gainesville, City of Oakwood, Town of Clermont, Hall County Unincorporated Areas
Redelineation of Mulberry River Basin and Suwanee Creek Flood Studies	09/29/2006	PBS&J	EMA-2003-GR-5369	06/01/2005	City of Flowery Branch, Hall County Unincorporated Areas, City of Rest Haven, Town of Braselton
Mulberry River Basin Flood Studies	09/29/2006	Black & Veatch	Not Applicable (Community Funded)	8/1/2002	City of Flowery Branch, Hall County Unincorporated Areas, Town of Braselton
Suwanee Creek Flood Studies	09/29/2006	Dewberry and Davis LLC	Not Applicable (Community Funded)	3/1/2005	Hall County Unincorporated Areas, City of Rest Haven

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Balus Creek, Balus Creek Tributary No. 1, East Fork Little River, Limestone Creek, Limestone Creek Tributary, Mud Creek, Wahoo Creek, Wahoo Creek Tributary and all streams within HUC-8 basin 03070101	03/21/2000	Braswell Engineering, Inc.	EMW-95-C-4830	08/01/1997	City of Gainesville, Hall County Unincorporated Areas

## 7.2 Community Meetings

The dates of the community meetings held for this FIS project and any previous FIS projects are shown in Table 30. These meetings may have previously been referred to by a variety of names (Community Coordination Officer (CCO), Scoping, Discovery, etc.), but all meetings represent opportunities for FEMA, community officials, study contractors, and other invited guests to discuss the planning for and results of the project.

**Table 30: Community Meetings**

Community	FIS Report Dated	Date of Meeting	Meeting Type	Attended By
Gainesville, City of	01/05/1983	06/13/1979	Initial CCO	Local Community representatives, Georgia DNR, FEMA
		08/25/1982	Final CCO	Local Community representatives, Georgia DNR, FEMA
Gainesville, City of	09/06/1995	03/04/1993 <sup>1</sup>	Initial CCO	Local Community representatives, Georgia DNR, FEMA
		*	Final CCO	Local Community representatives, Georgia DNR, FEMA
Hall County (Unincorporated Areas)	05/02/1983	06/13/1979	Initial CCO	Local Community representatives, Georgia DNR, FEMA
		12/09/1982	Final CCO	Local Community representatives, Georgia DNR, FEMA
Hall County (Unincorporated Areas)	04/17/1995	03/04/1993	Initial CCO	Local Community representatives, Georgia DNR, FEMA
		10/13/1993	Final CCO	Local Community representatives, Georgia DNR, FEMA
Hall County (Unincorporated Areas)	09/29/2006	09/22/2004	Initial CCO	Local Community representatives, Georgia DNR, FEMA
		11/16/2005	Final CCO	Local Community representatives, Georgia DNR, FEMA
Hall County and Incorporated Areas	<date effective>	11/12/2013	Discovery	Hall County, Georgia DNR, FEMA, Georgia EPD, and the study Contractors
		09/03/2015	Flood Risk Review	Hall County, City of Gainesville, City of Flowery Branch, Georgia DNR, FEMA, Georgia EPD, and the study Contractors

<sup>1</sup> Community was notified by letter that revision would be conducted

\*Data not available

## SECTION 8.0 – ADDITIONAL INFORMATION

Information concerning the pertinent data used in the preparation of this FIS Report can be obtained by submitting an order with any required payment to the FEMA Engineering Library. For more information on this process, see <http://www.fema.gov>.

The additional data that was used for this project includes the FIS Report and FIRM that were previously prepared for Hall County and Incorporated Areas (FEMA 2006a and FEMA 2006b).

Table 31 is a list of the locations where FIRMs for Hall County can be viewed. Please note that the maps at these locations are for reference only and are not for distribution. Also, please note that only the maps for the community listed in the table are available at that particular repository. A user may need to visit another repository to view maps from an adjacent community.

**Table 31: Map Repositories**

Community	Address	City	State	Zip Code
Braselton, Town of	Town Hall 4982 Highway 53	Braselton	GA	30517
Buford, City of	City Hall 95 Scott Street	Buford	GA	30518
Clermont, Town of	Town Hall 122 Dean Street	Clermont	GA	30527
Flowery Branch, City of	City Hall 5517 Main Street	Flowery Branch	GA	30542
Gainesville, City of	Joint Administration Building Public Works Office 300 Green Street	Gainesville	GA	30503
Hall County, Unincorporated Areas	Hall County Engineering Division 2875 Browns Bridge Road 3rd Floor	Gainesville	GA	30504
Lula, City of	City Hall 6055 Main Street	Lula	GA	30554
Oakwood, City of	City Hall 4035 Walnut Circle	Oakwood	GA	30566
Rest Haven, City of	428 Thunder Rd	Buford	GA	30518

The National Flood Hazard Layer (NFHL) dataset is a compilation of effective FIRM databases and LOMCs. Together they create a GIS data layer for a State or Territory. The NFHL is updated as studies become effective and extracts are made available to the public monthly. NFHL data can be viewed or ordered from the website shown in Table 32.

Table 32 contains useful contact information regarding the FIS Report, the FIRM, and other relevant flood hazard and GIS data. In addition, information about the state NFIP Coordinator and GIS Coordinator is shown in this table. At the request of FEMA, each Governor has designated an agency of State or territorial government to coordinate that State's or territory's NFIP activities. These agencies often assist communities in developing and adopting necessary floodplain management measures. State GIS Coordinators are knowledgeable about the availability and location of state and local GIS data in their state.

**Table 32: Additional Information**

FEMA and the NFIP	
FEMA and FEMA Engineering Library website	<a href="http://www.fema.gov/national-flood-insurance-program-flood-hazard-mapping/engineering-library">www.fema.gov/national-flood-insurance-program-flood-hazard-mapping/engineering-library</a>
NFIP website	<a href="http://www.fema.gov/national-flood-insurance-program">www.fema.gov/national-flood-insurance-program</a>
NFHL Dataset	<a href="http://msc.fema.gov">http://msc.fema.gov</a>
FEMA Region IV	Federal Emergency Management Agency 3003 Chamblee Tucker Road Atlanta, GA 30341
Other Federal Agencies	
USGS website	<a href="http://www.usgs.gov">http://www.usgs.gov</a>
Hydraulic Engineering Center website	<a href="http://www.hec.usace.army.mil">http://www.hec.usace.army.mil</a>
State Agencies and Organizations	
State NFIP Coordinator	Tom Shillock, CFM Georgia Department of Natural Resources 2 Martin Luther King, Jr. Drive, SE Suite 1152 – East Tower Atlanta, GA 30334 404-656-4713 <a href="mailto:Tom.Shillock@dnr.state.ga.us">Tom.Shillock@dnr.state.ga.us</a>
State GIS Coordinator	Lisa Westin Senior GIS Specialist Office of Mapping and Decision Support Systems Georgia Department of Community Affairs 60 Executive Park South, NE Atlanta, GA 30329 404-679-3135 <a href="mailto:lisa.westin@dca.ga.gov">lisa.westin@dca.ga.gov</a>

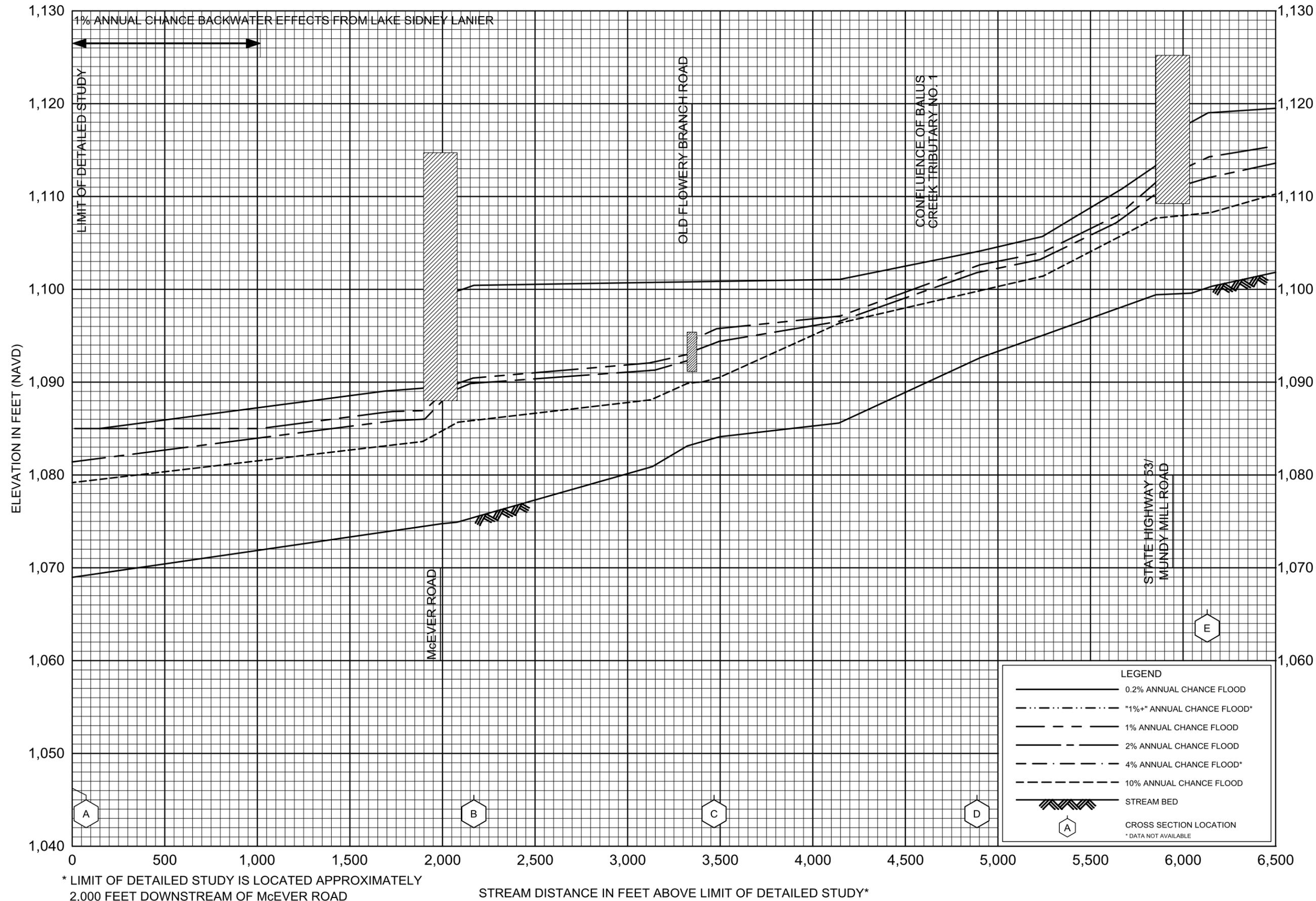
## SECTION 9.0 – BIBLIOGRAPHY AND REFERENCES

Table 33 includes sources used in the preparation of and cited in this FIS Report as well as additional studies that have been conducted in the study area.

**Table 33: Bibliography and References**

Citation in this FIS	Publisher/ Issuer	Publication Title, "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
FEMA 2006a	Federal Emergency Management Agency	<i>Hall County, Georgia and Incorporated Areas Flood Insurance Rate Map</i>	Federal Emergency Management Agency	Washington, D.C.	09/29/2006	<a href="http://msc.fema.gov">msc.fema.gov</a>
FEMA 2006b	Federal Emergency Management Agency	<i>Hall County, Georgia and Incorporated Areas Flood Insurance Study</i>	Federal Emergency Management Agency	Washington, D.C.	09/29/2006	<a href="http://msc.fema.gov">msc.fema.gov</a>
FEMA 2015a	Federal Emergency Management Agency	<i>Approximate Flood Study based on USGS Urban and Small Rural Regression Equations</i>	Federal Emergency Management Agency	Washington, D.C.	09/10/2015	<a href="https://hazards.fema.gov/fema-portal/wps/portal">https://hazards.fema.gov/fema-portal/wps/portal</a>
FEMA 2015b	Federal Emergency Management Agency	<i>Approximate Flood Study based on USGS Rural Regression Equations</i>	Federal Emergency Management Agency	Washington, D.C.	09/10/2015	<a href="https://hazards.fema.gov/fema-portal/wps/portal">https://hazards.fema.gov/fema-portal/wps/portal</a>
FEMA 2015c	Federal Emergency Management Agency	<i>Detailed Flood Study based on HEC-HMS 3.5 Modeling</i>	Federal Emergency Management Agency	Washington, D.C.	09/10/2015	<a href="https://hazards.fema.gov/fema-portal/wps/portal">https://hazards.fema.gov/fema-portal/wps/portal</a>
FEMA 2015d	Federal Emergency Management Agency	<i>Detailed Flood Study based on USGS StreamStats</i>	US Army Corps of Engineers	Davis, CA	09/10/2015	<a href="http://www.hec.usace.army.mil">www.hec.usace.army.mil</a>
FEMA 2015e	Federal Emergency Management Agency	<i>Detailed Flood Study based on Gage Analysis</i>	Federal Emergency Management Agency	Washington, D.C.	09/10/2015	<a href="https://hazards.fema.gov/fema-portal/wps/portal">https://hazards.fema.gov/fema-portal/wps/portal</a>

Citation in this FIS	Publisher/ Issuer	Publication Title, "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
HALL 2015	Hall County, Georgia GIS	<i>Hall County Roads</i>	Hall County GIS	Gainesville, GA	08/03/2015	
NHD 2014	USDA/NRCS - National Geospatial Center of Excellence	<i>National Hydrography Dataset (NHD)</i>	U.S. Geological Survey in cooperation with the U.S. Environmental Protection Agency and other State and local partners	Reston, VA	11/04/2014	nhd.usgs.gov
TIGER 2014	U.S. Census Bureau	<i>TIGER/Line shapefiles</i>	U.S. Department of Commerce, U.S. Census Bureau, Geography Division	Washington, D.C.	08/01/2014	www.census.gov/geo/maps-data/data/tiger.html
USDA 2013	USDA - FSA Aerial Photography Field Office	<i>NAIP Aerial Base Map 2013</i>	USDA - FSA Aerial Photography Field Office	Salt Lake City, UT	11/27/2013	datagateway.nrcs.usda.gov
USGS 2015	U.S. Geological Survey	<i>Base map surface water features from the USGS</i>	U.S. Geological Survey	Washington, D.C.	09/10/2015	usgs.gov



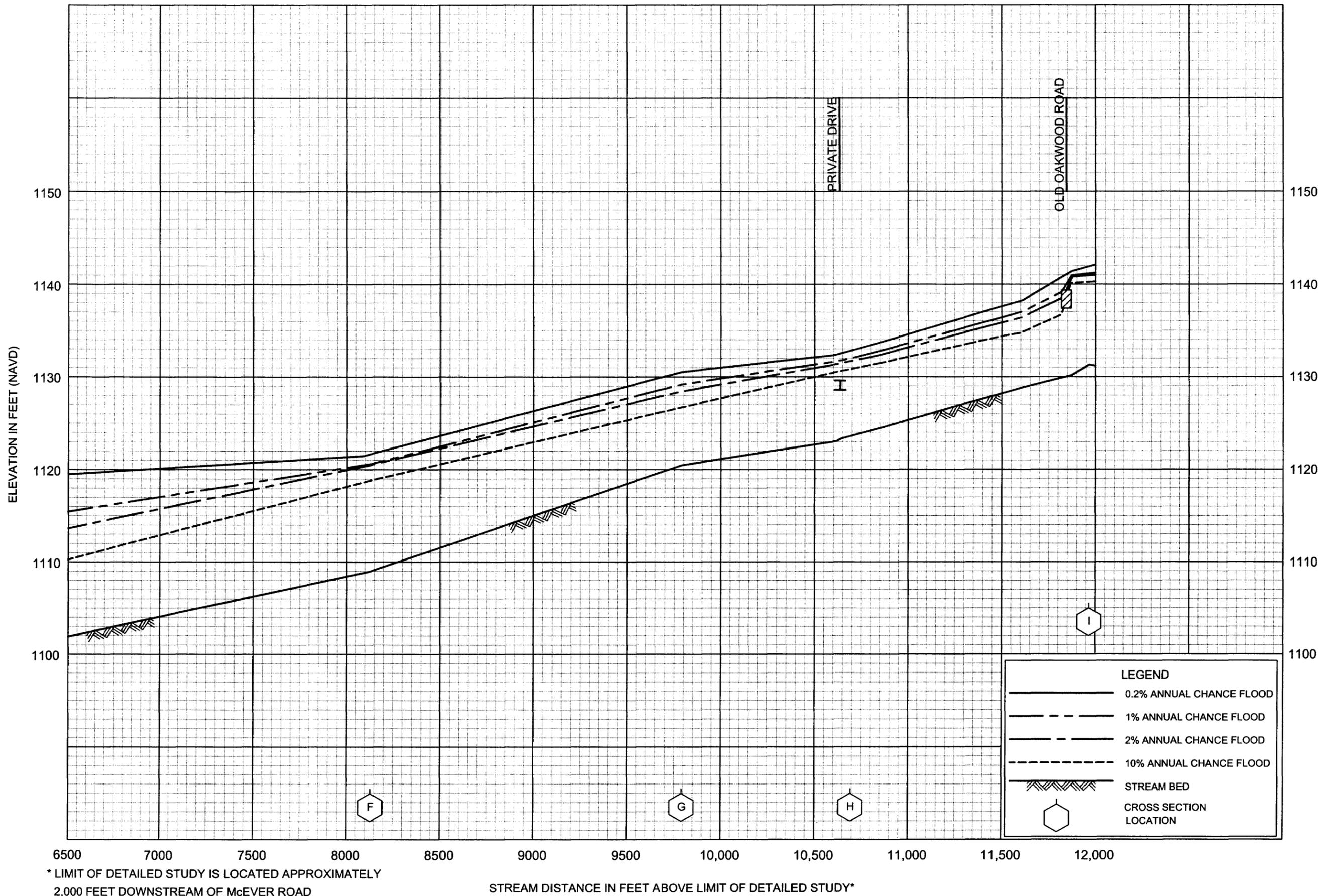
\* LIMIT OF DETAILED STUDY IS LOCATED APPROXIMATELY 2,000 FEET DOWNSTREAM OF McEVER ROAD

FLOOD PROFILES

BALUS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS



\* LIMIT OF DETAILED STUDY IS LOCATED APPROXIMATELY 2,000 FEET DOWNSTREAM OF McEVER ROAD

STREAM DISTANCE IN FEET ABOVE LIMIT OF DETAILED STUDY\*

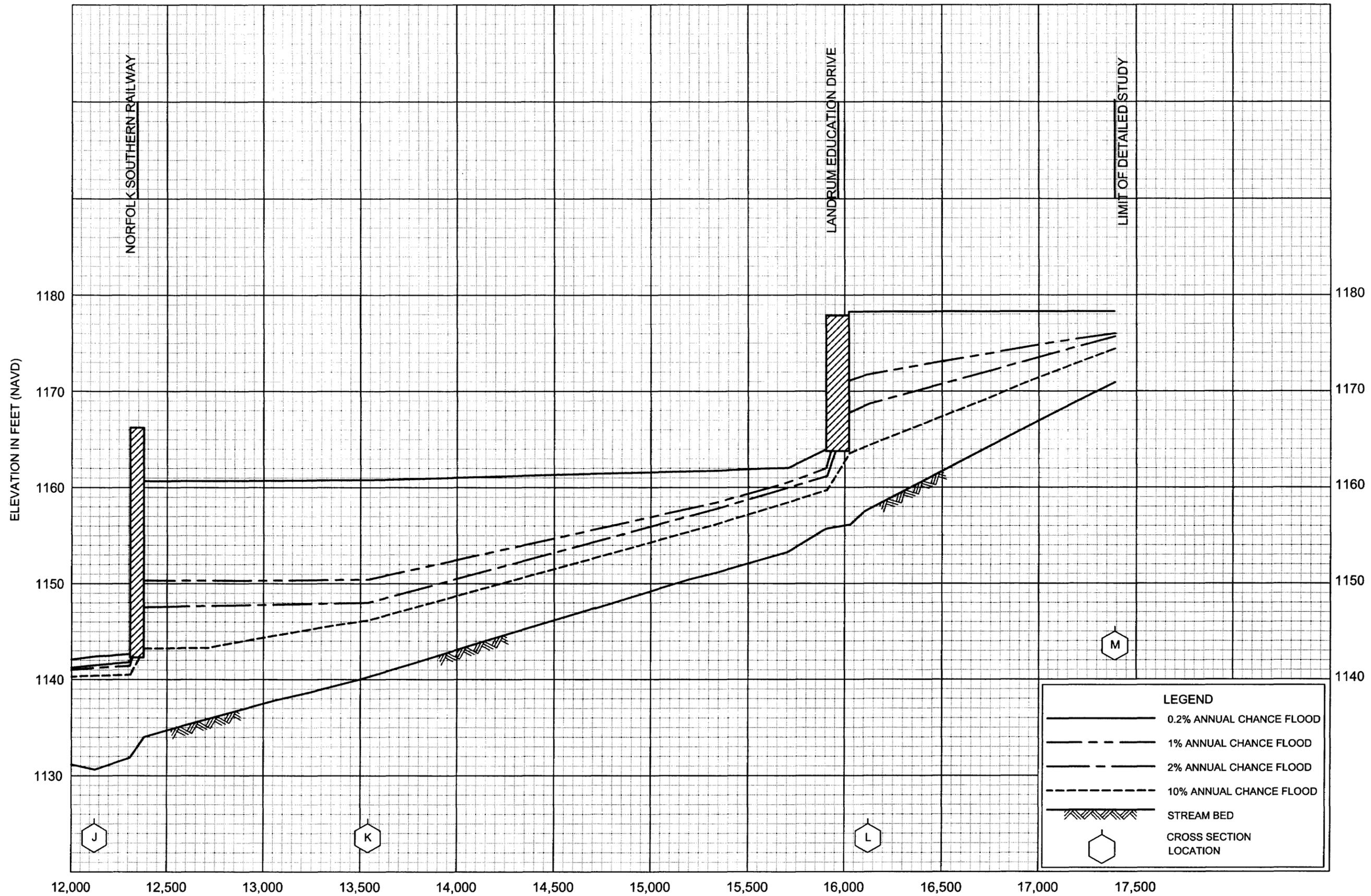
FLOOD PROFILES

BALUS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS

02P



\* LIMIT OF DETAILED STUDY IS LOCATED APPROXIMATELY  
2,000 FEET DOWNSTREAM OF McEVER ROAD

STREAM DISTANCE IN FEET ABOVE LIMIT OF DETAILED STUDY\*

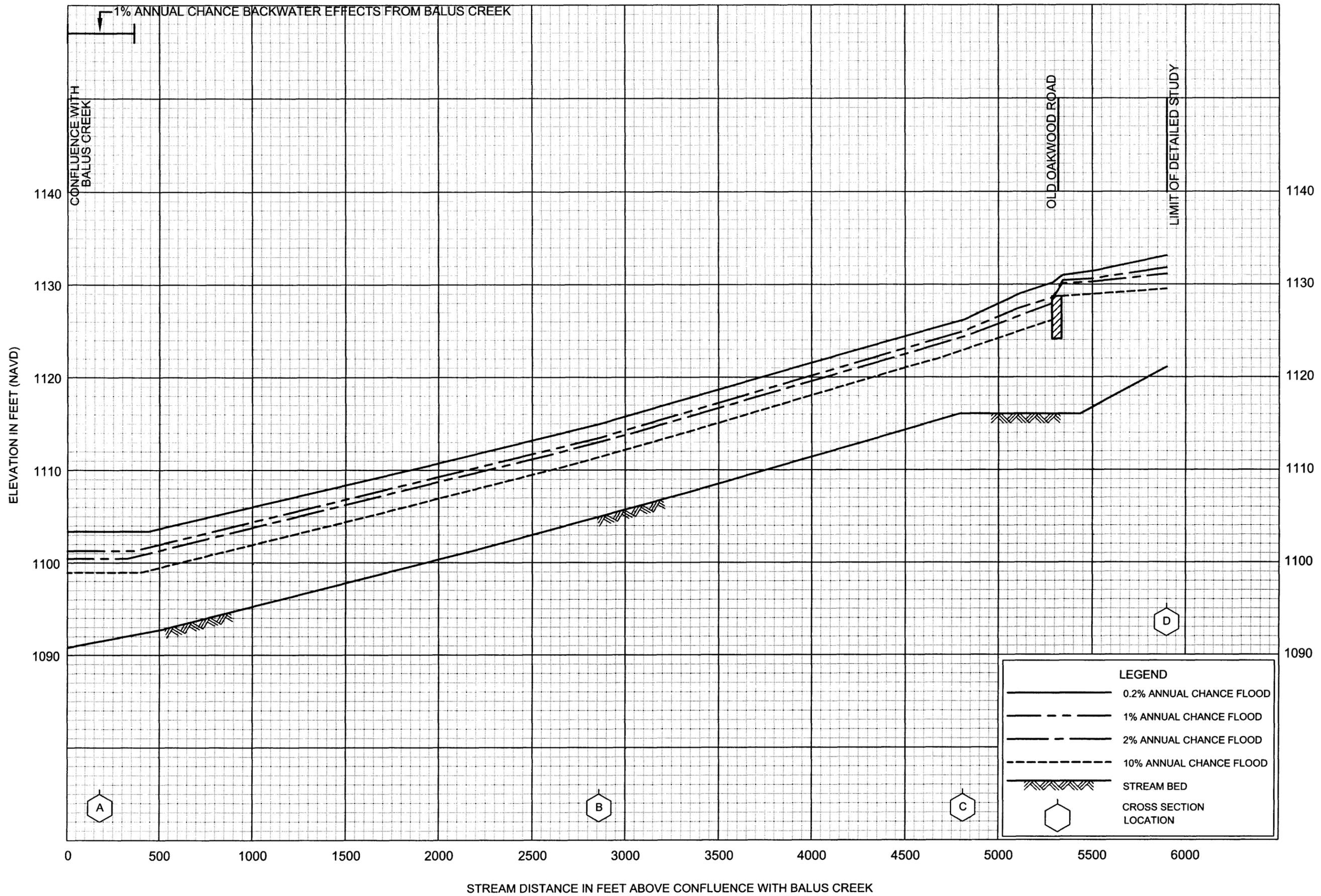
LEGEND	
	0.2% ANNUAL CHANCE FLOOD
	1% ANNUAL CHANCE FLOOD
	2% ANNUAL CHANCE FLOOD
	10% ANNUAL CHANCE FLOOD
	STREAM BED
	CROSS SECTION LOCATION

FLOOD PROFILES

BALUS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS

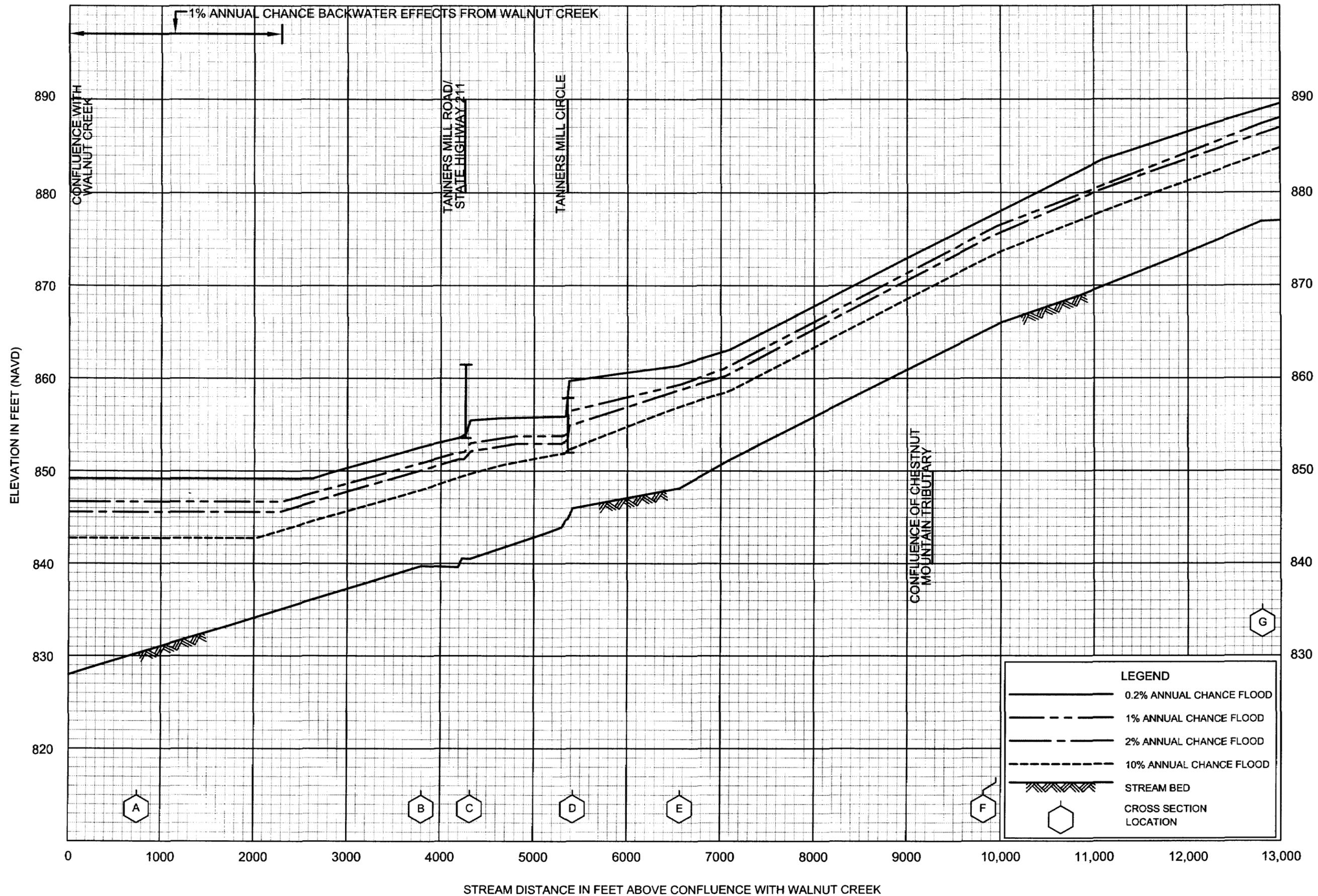


FLOOD PROFILES

BALUS CREEK TRIBUTARY NO. 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS

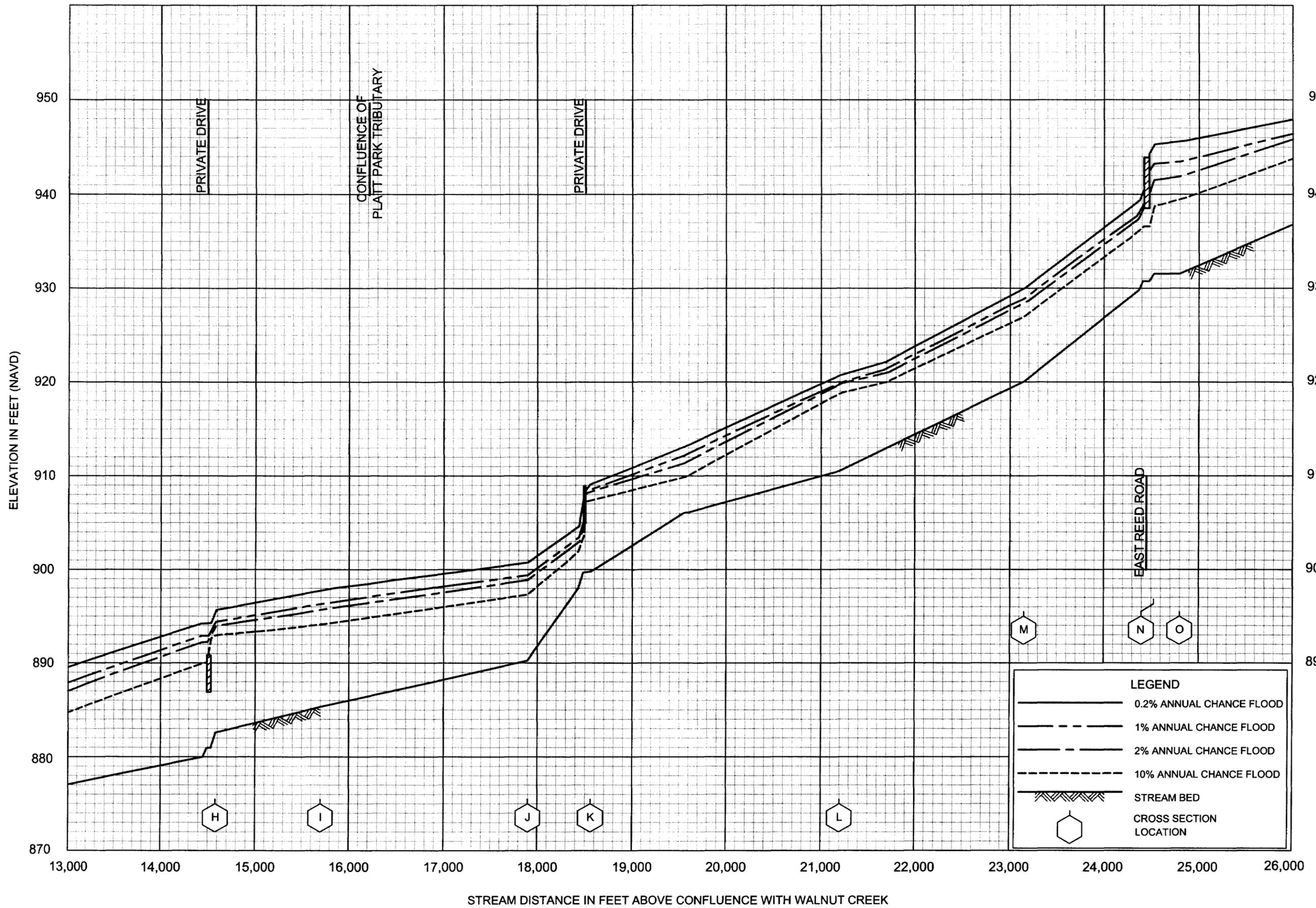


FLOOD PROFILES

CANEY FORK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS

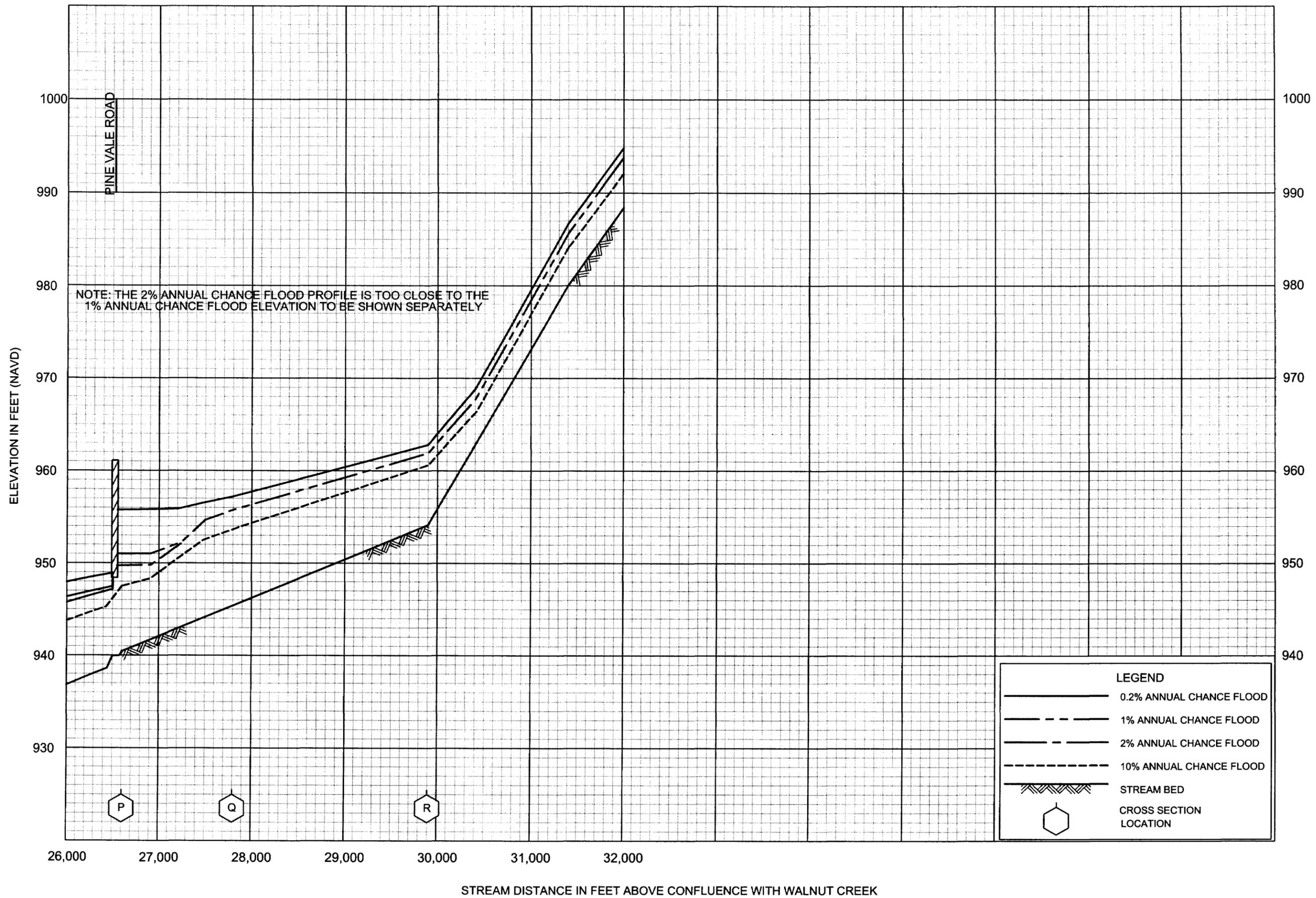


FLOOD PROFILES

CANEY FORK CREEK

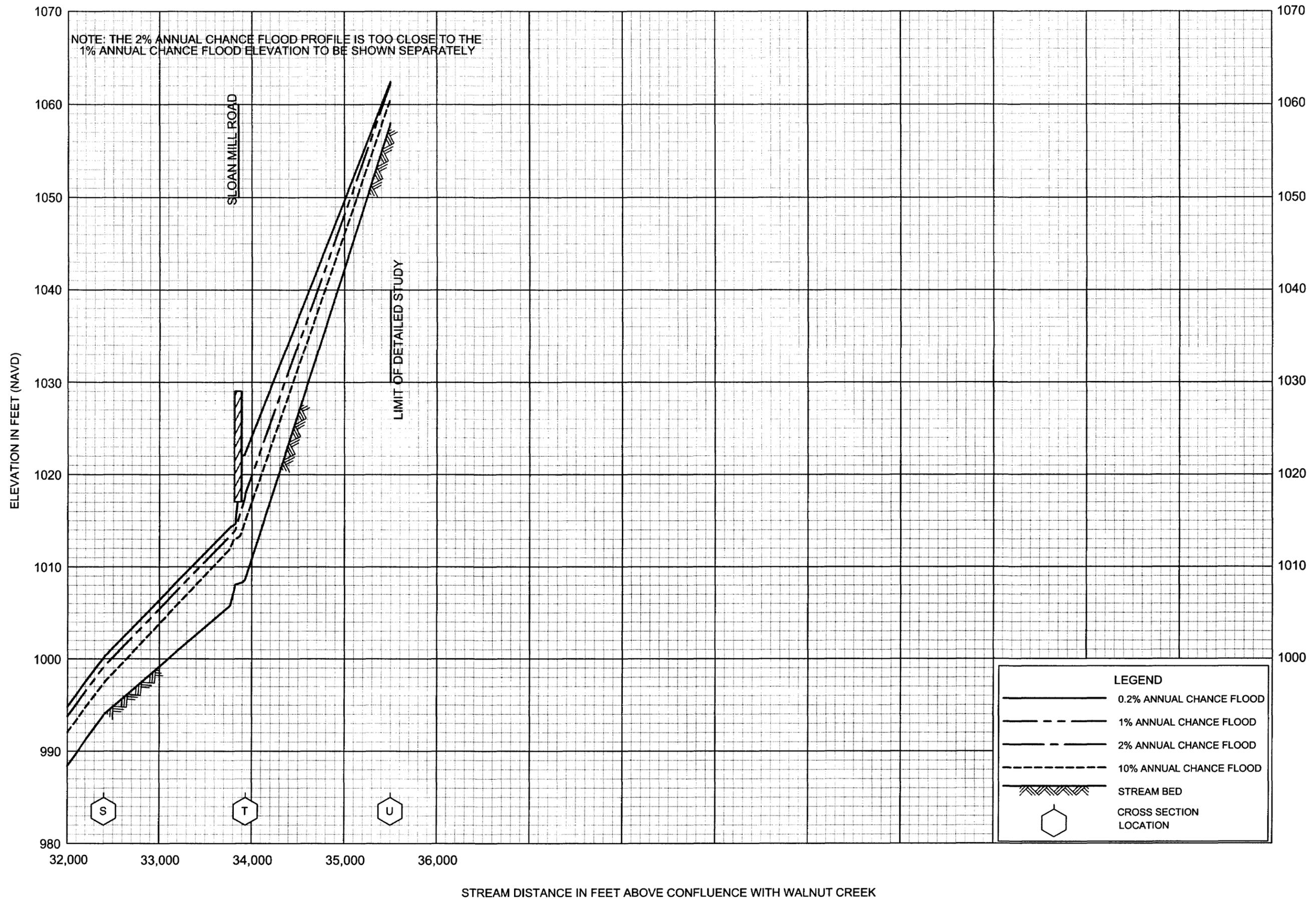
FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS



FLOOD PROFILES  
CANEY FORK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
HALL COUNTY, GA  
AND INCORPORATED AREAS

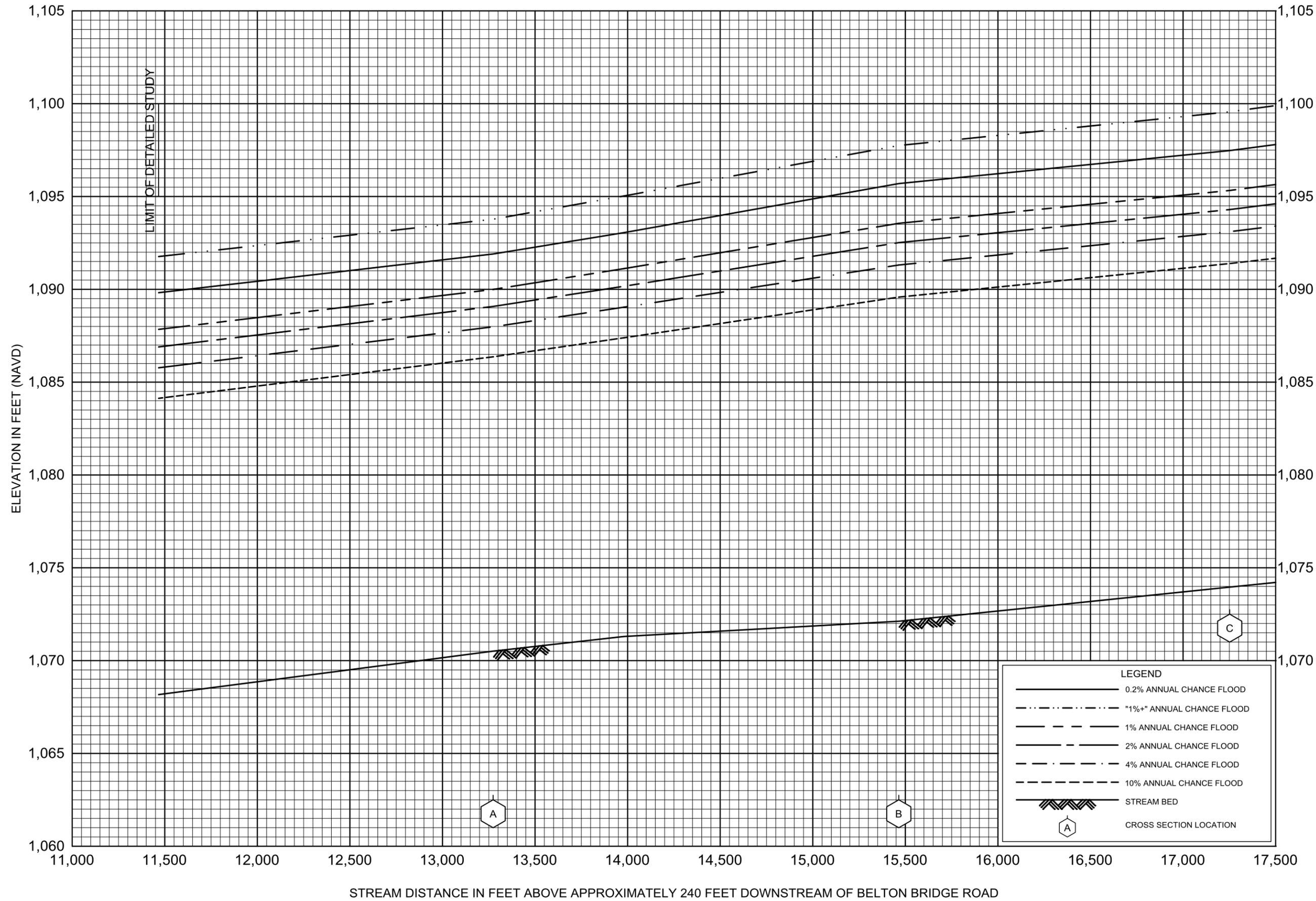


FLOOD PROFILES

CANEY FORK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS

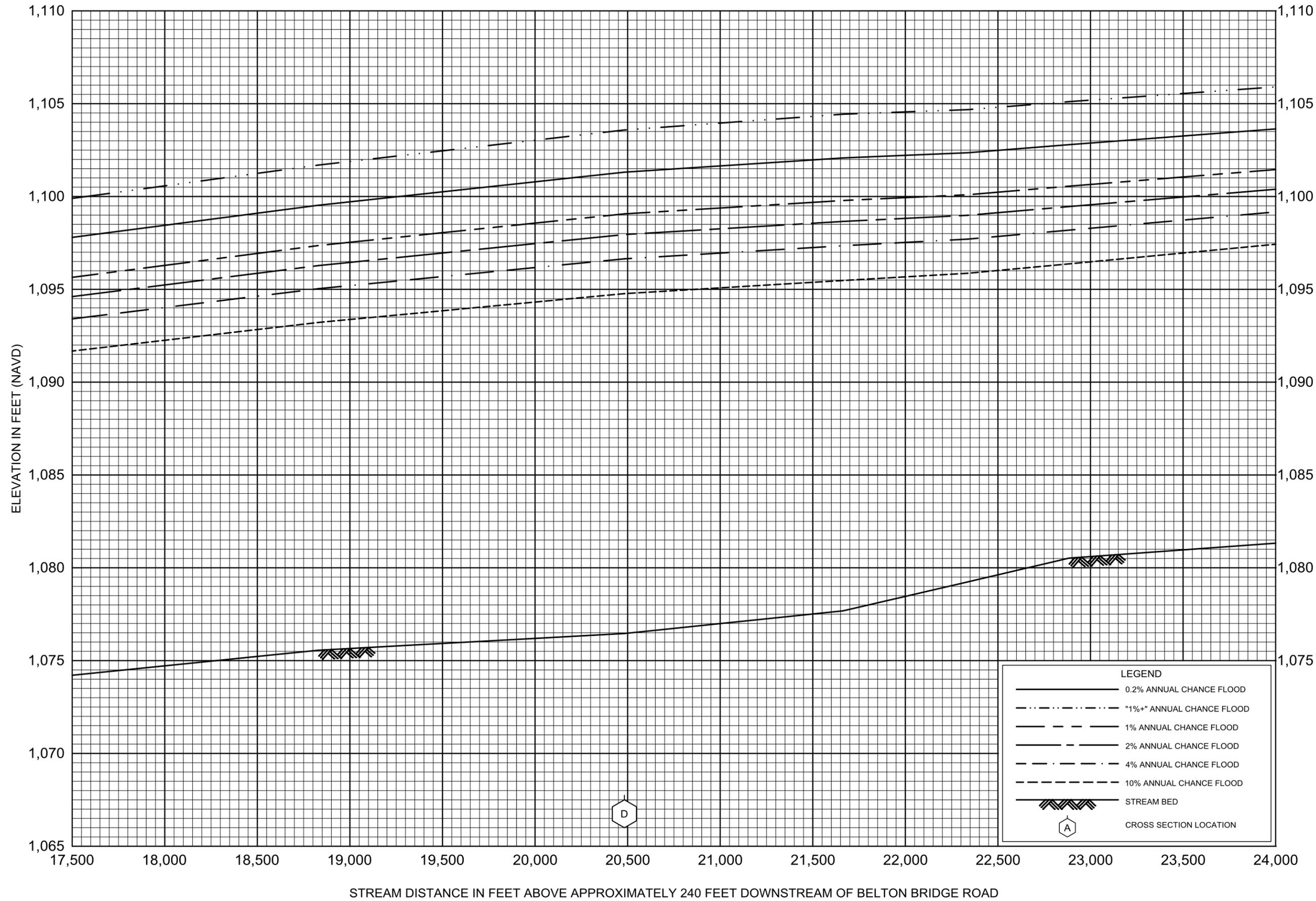


FLOOD PROFILES

CHATTAHOOCHEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS

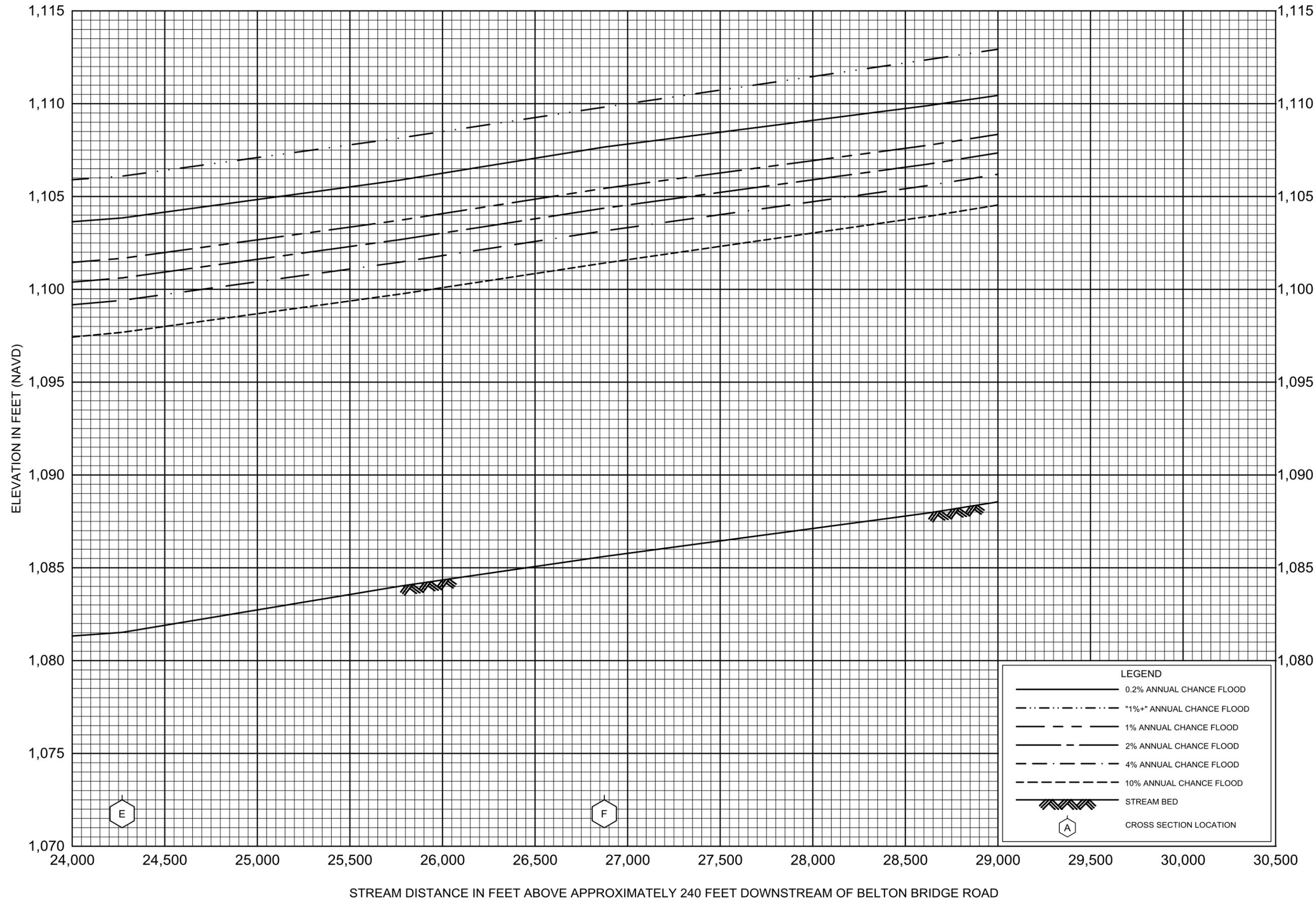


FLOOD PROFILES

CHATTAHOOCHEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS

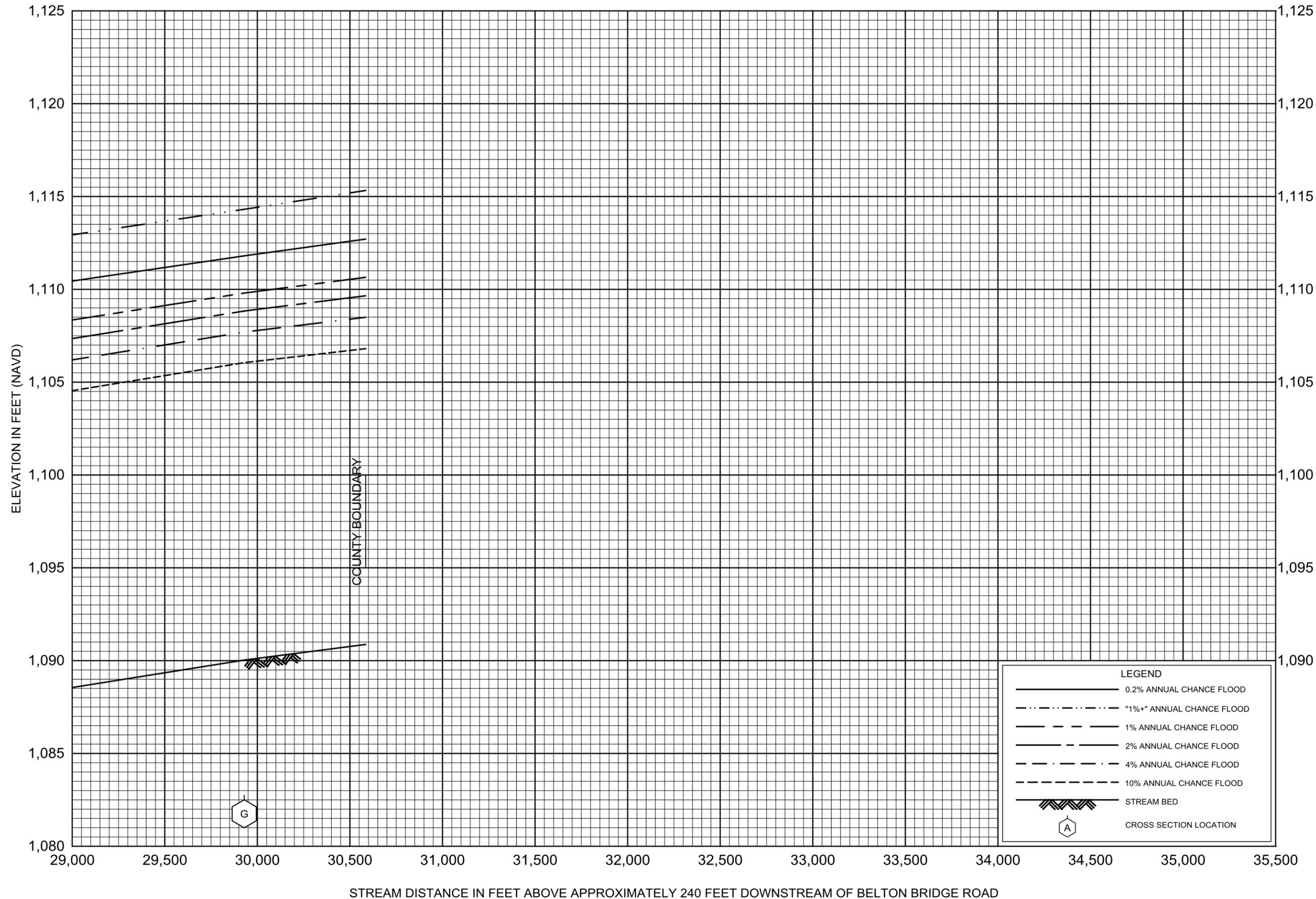


FLOOD PROFILES

CHATTAHOOCHEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS

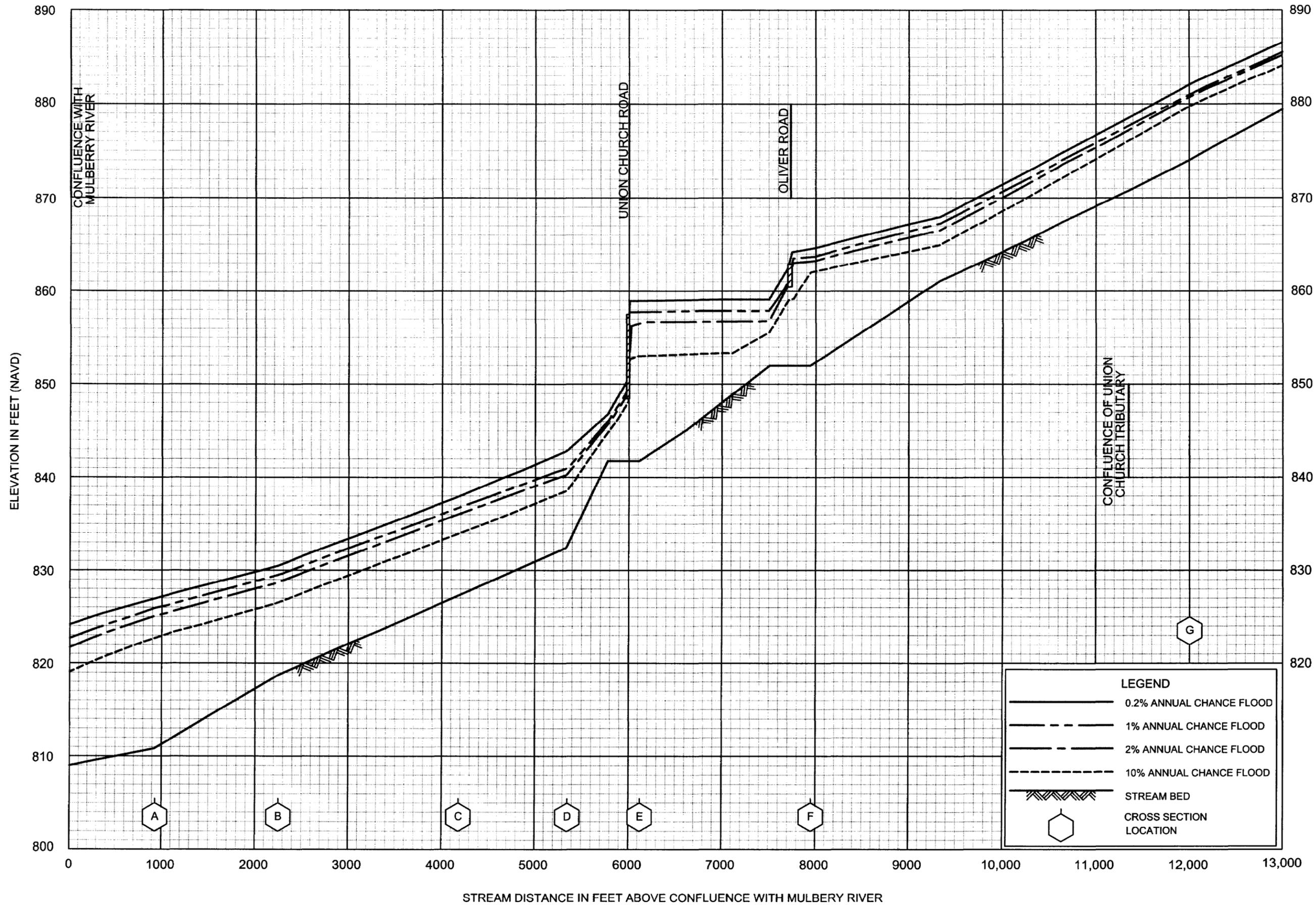


**FLOOD PROFILES**

**CHATTAHOOCHEE RIVER**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**HALL COUNTY, GA**  
AND INCORPORATED AREAS

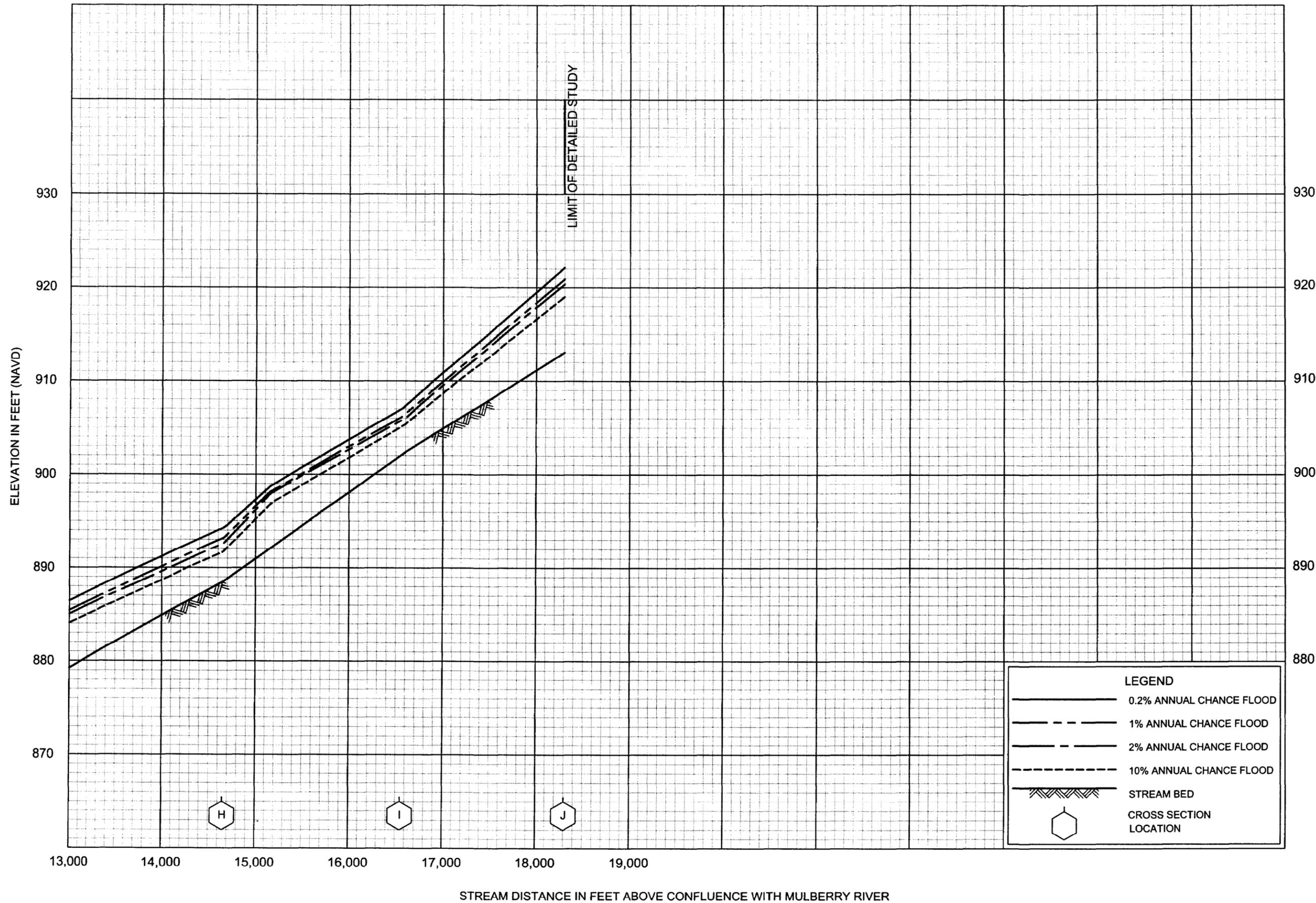


FLOOD PROFILES

DEATON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS

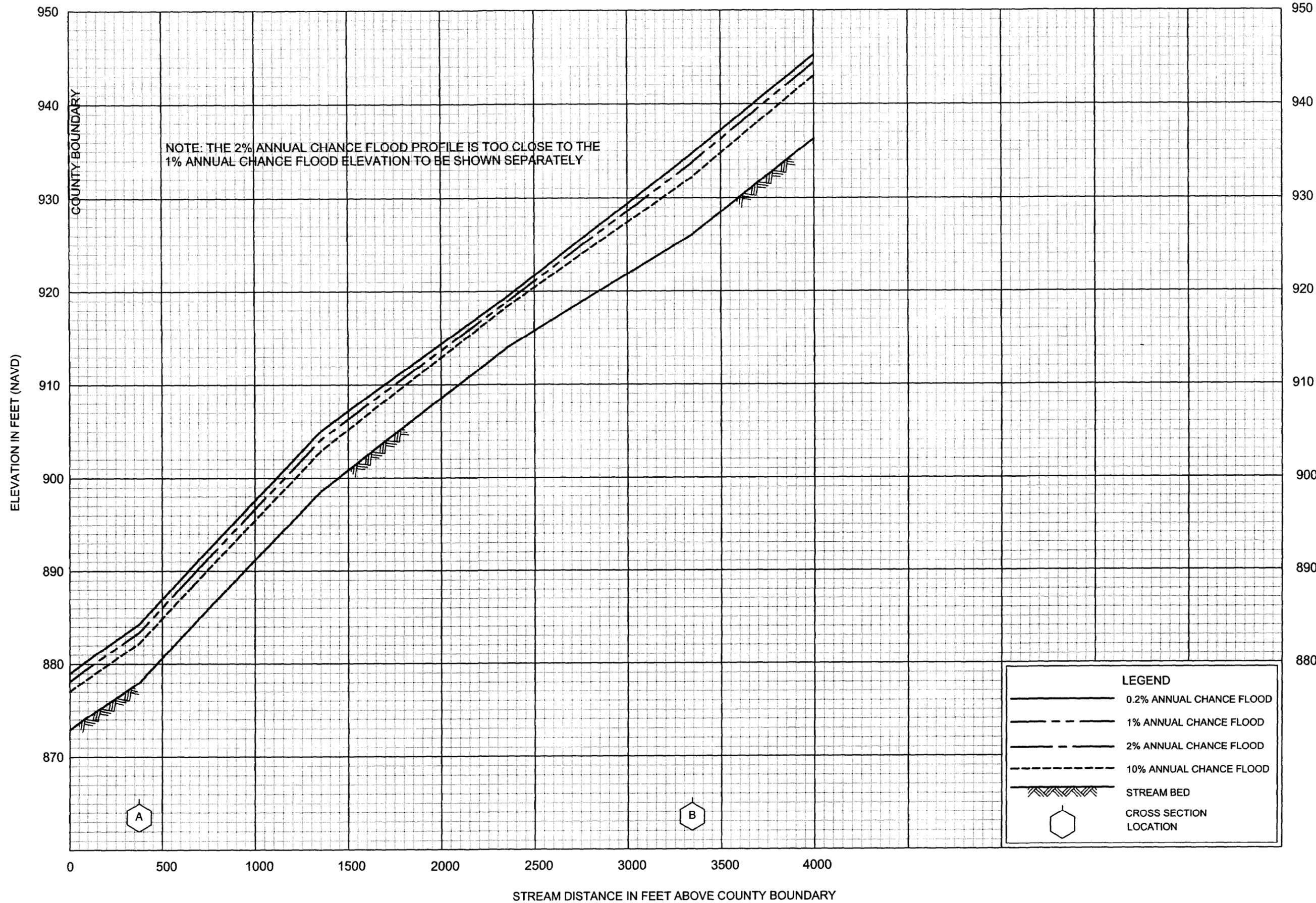


**FLOOD PROFILES**

**DEATON CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY

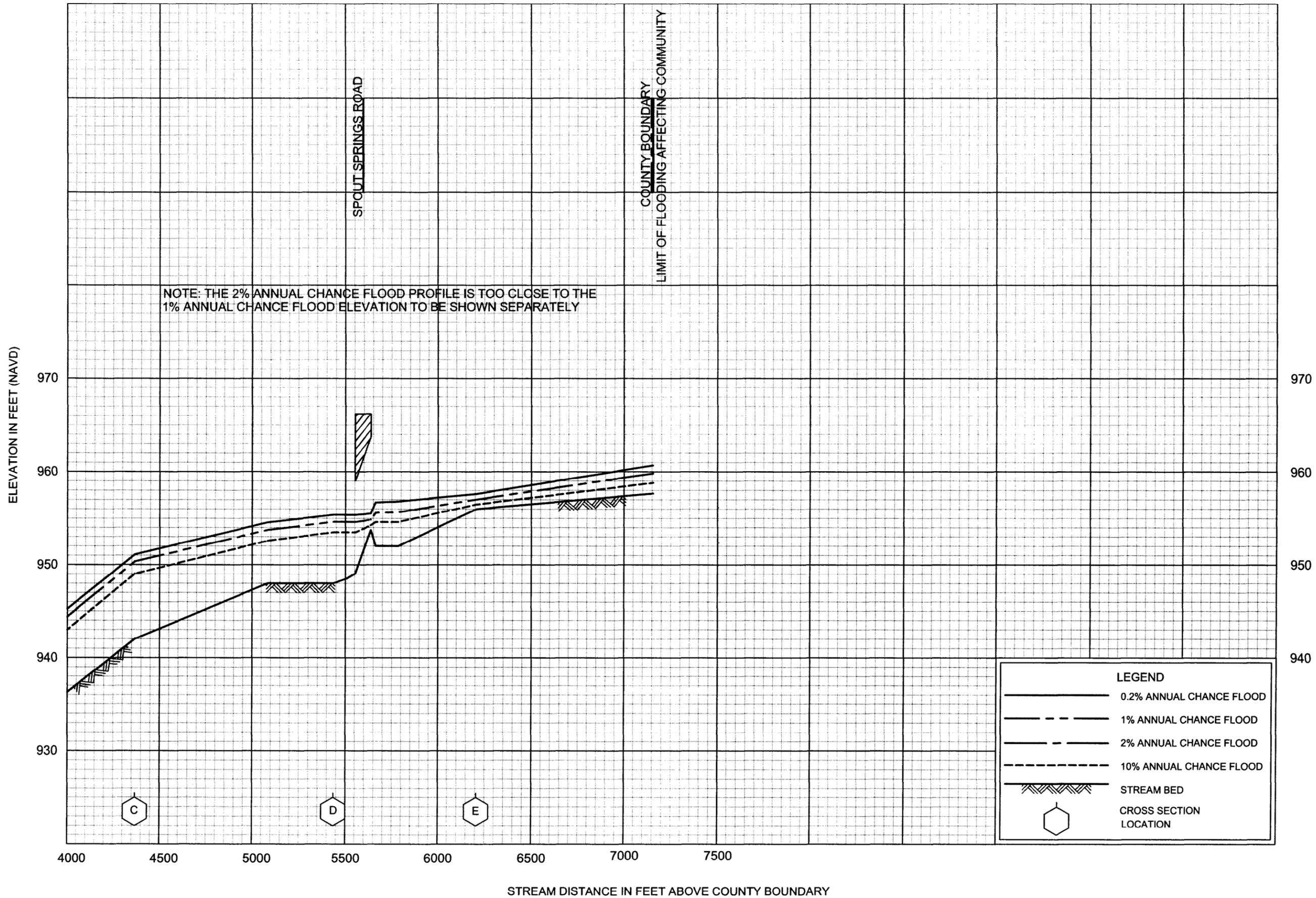
**HALL COUNTY, GA**  
AND INCORPORATED AREAS



FLOOD PROFILES (EXISTING CONDITIONS)

DUNCAN CREEK

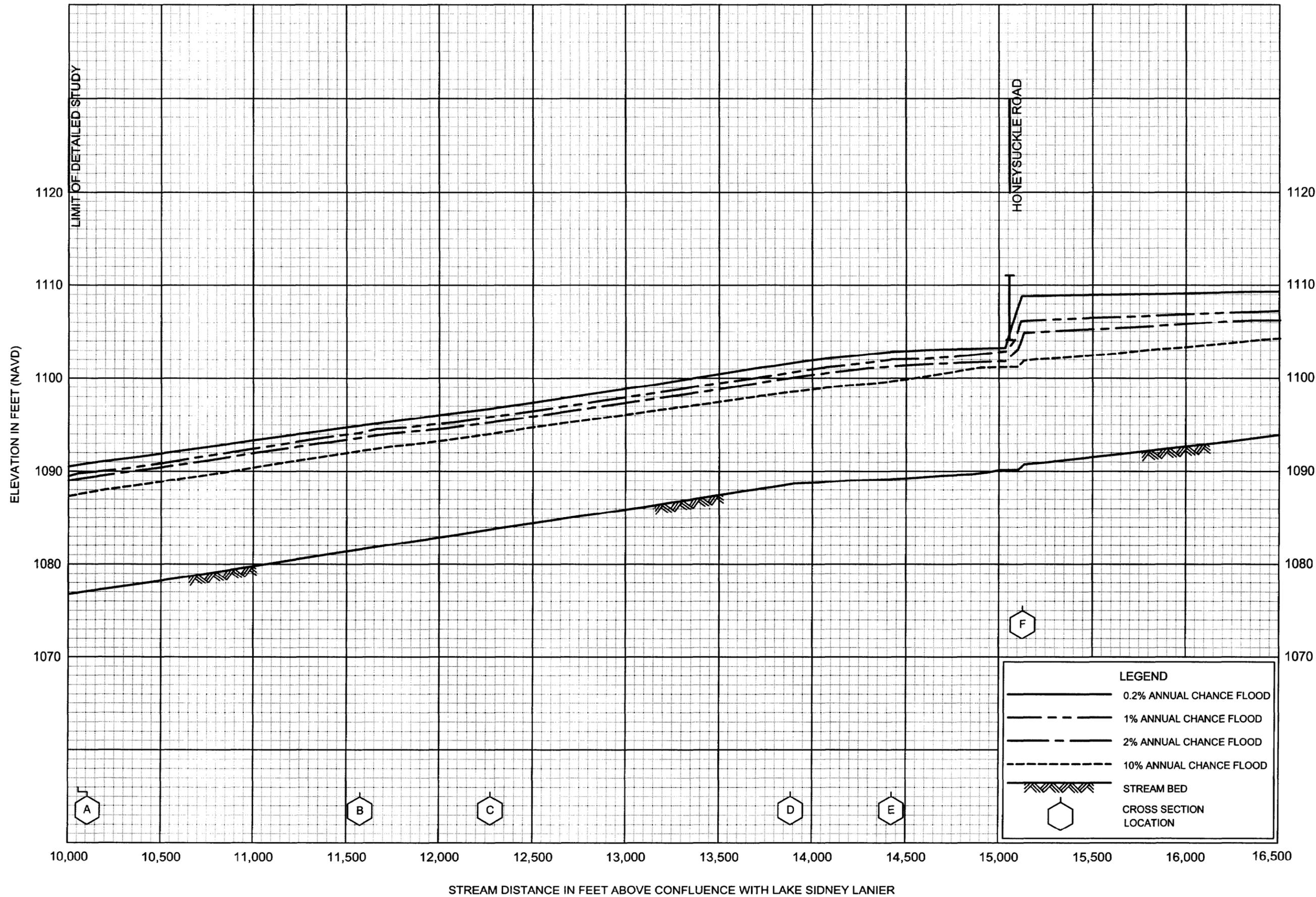
FEDERAL EMERGENCY MANAGEMENT AGENCY  
 HALL COUNTY, GA  
 AND INCORPORATED AREAS



FLOOD PROFILES (EXISTING CONDITIONS)

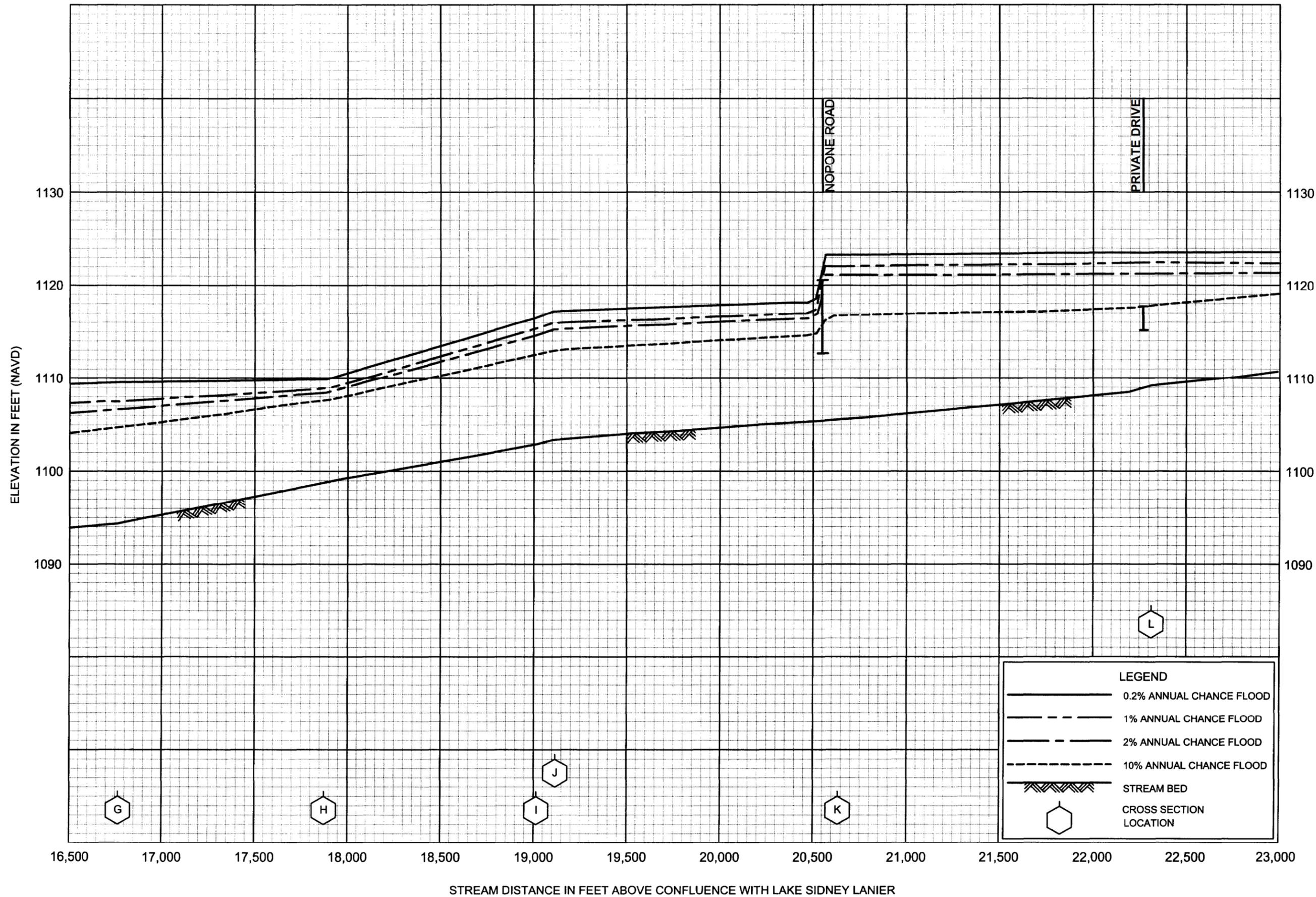
DUNCAN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
 HALL COUNTY, GA  
 AND INCORPORATED AREAS



FLOOD PROFILES  
EAST FORK LITTLE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY  
HALL COUNTY, GA  
AND INCORPORATED AREAS

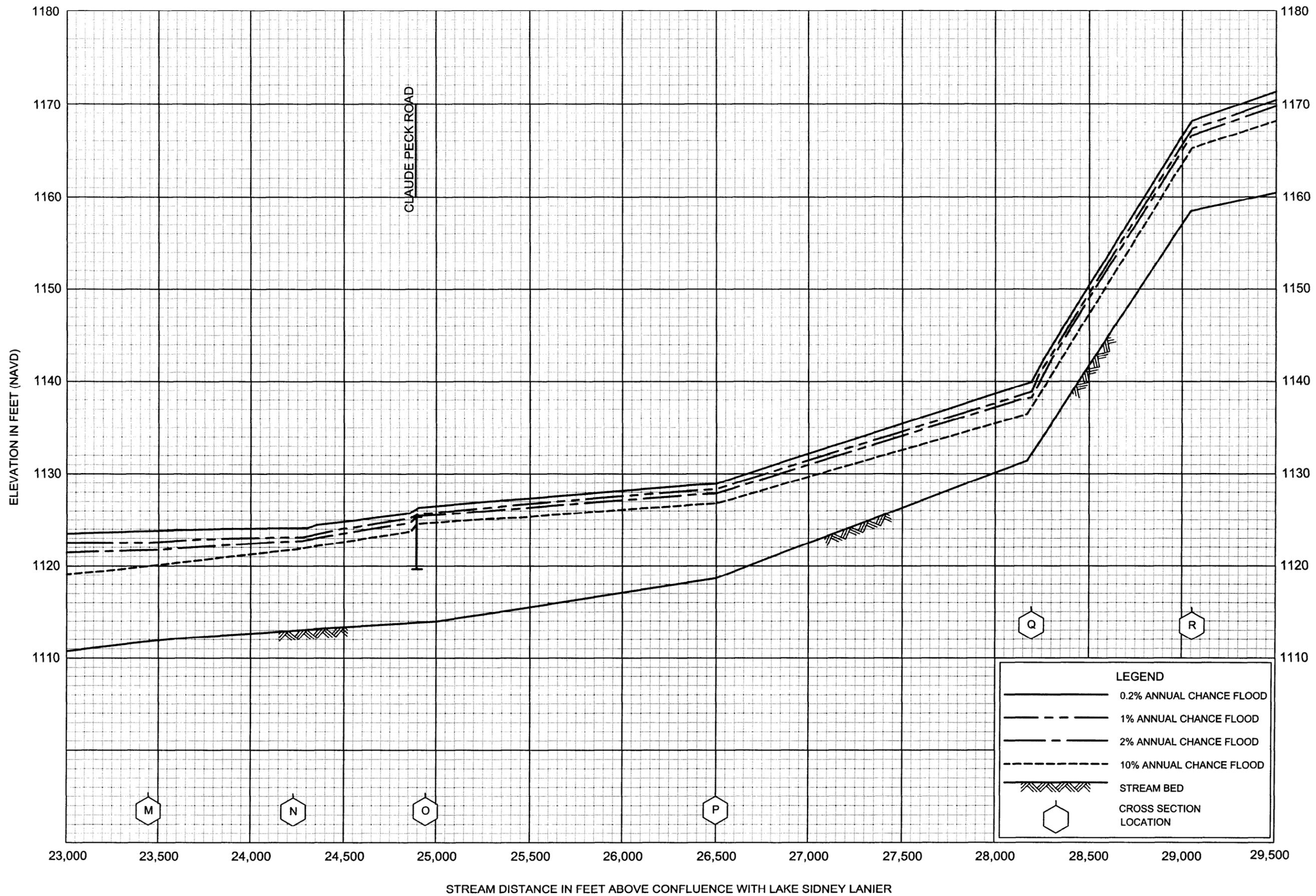


FLOOD PROFILES

EAST FORK LITTLE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS

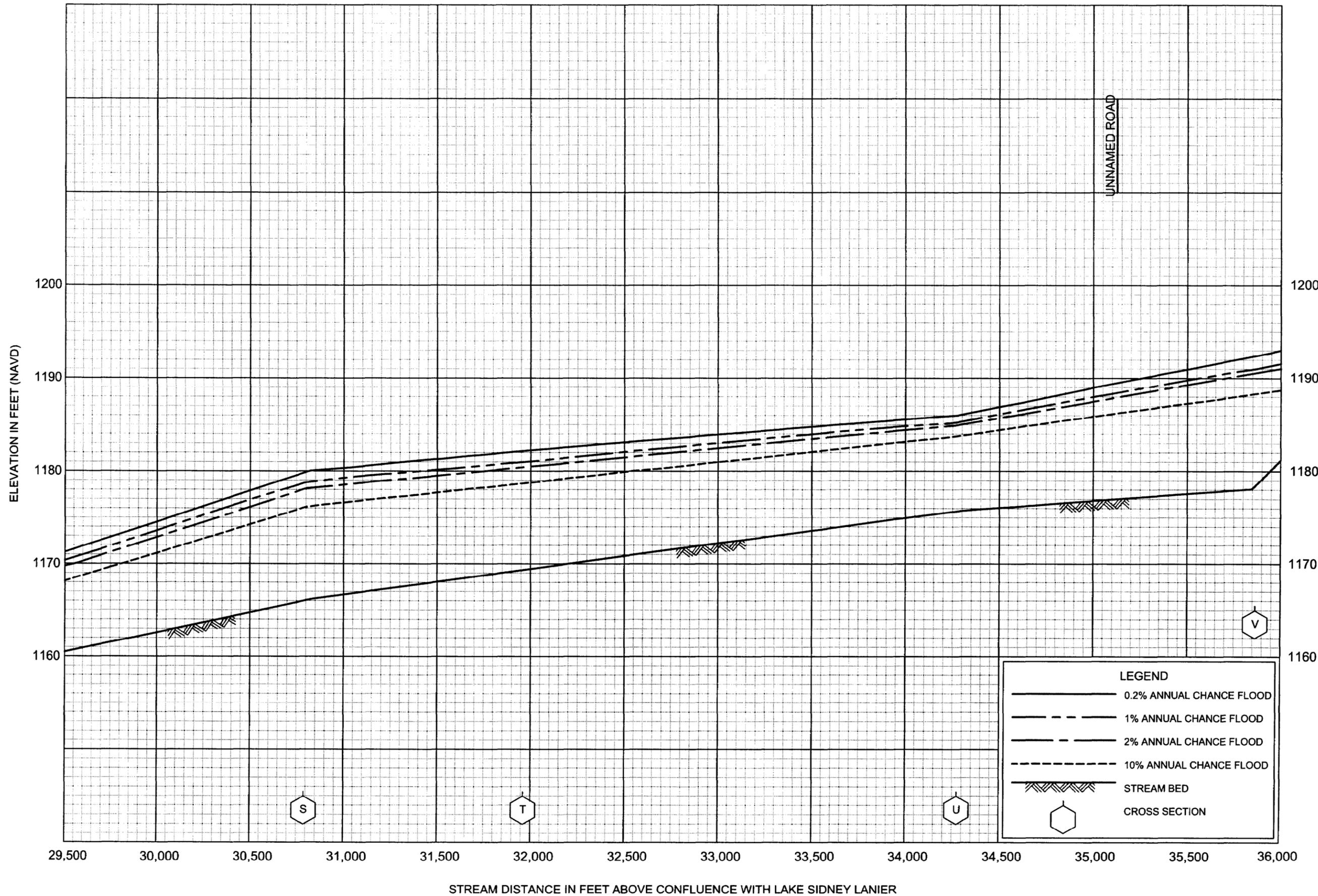


FLOOD PROFILES

EAST FORK LITTLE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS



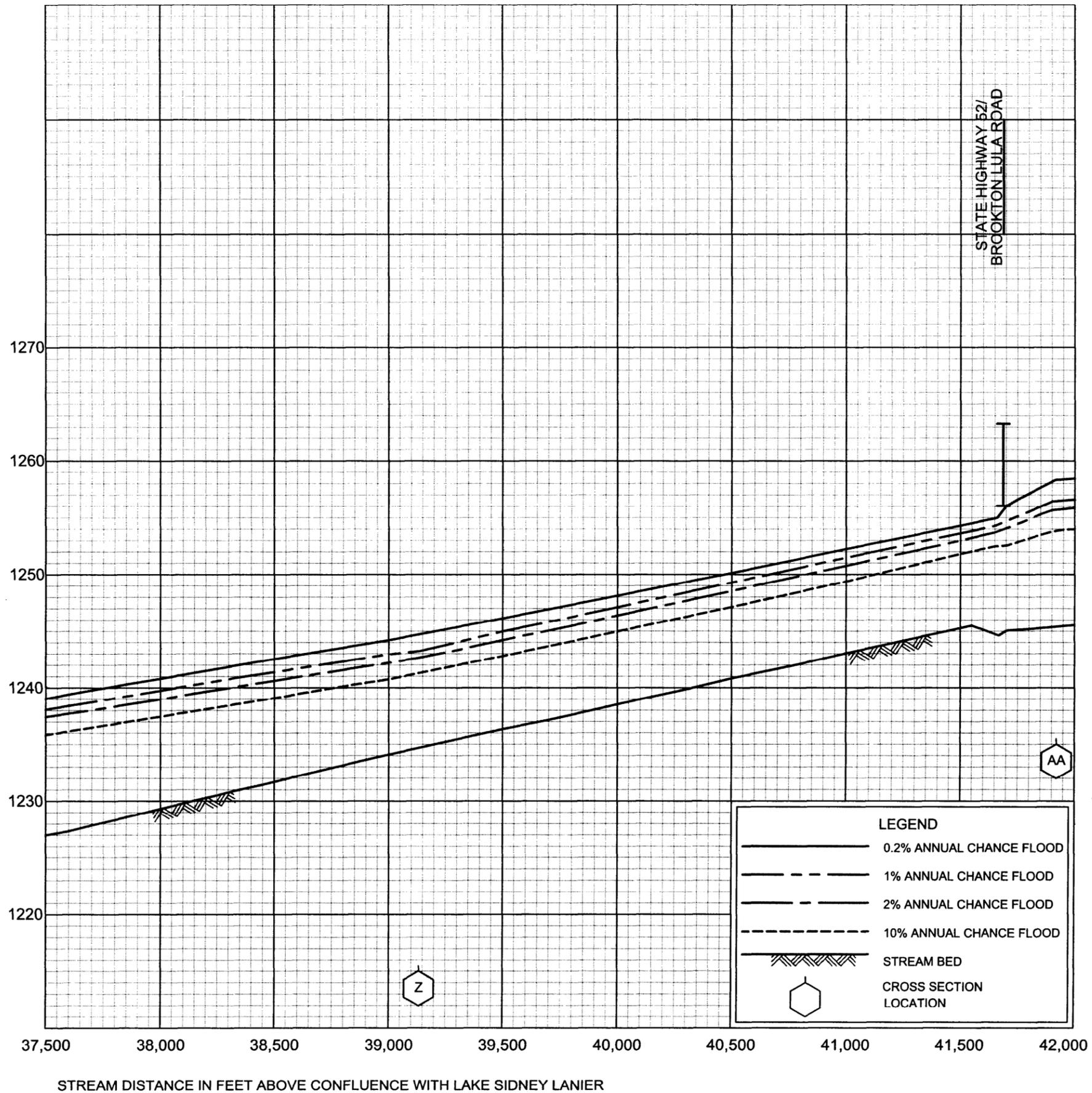
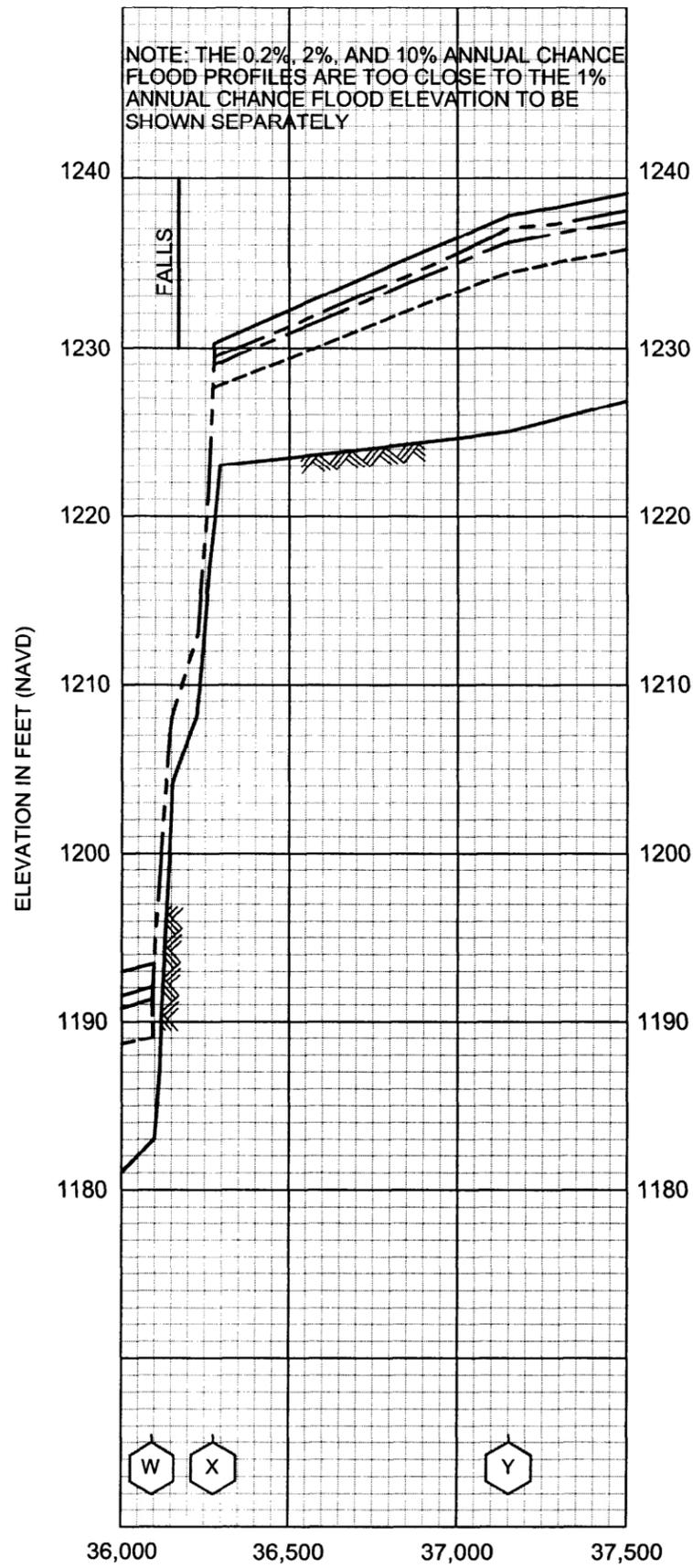
FLOOD PROFILES

EAST FORK LITTLE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS

NOTE: THE 0.2%, 2%, AND 10% ANNUAL CHANGE FLOOD PROFILES ARE TOO CLOSE TO THE 1% ANNUAL CHANGE FLOOD ELEVATION TO BE SHOWN SEPARATELY



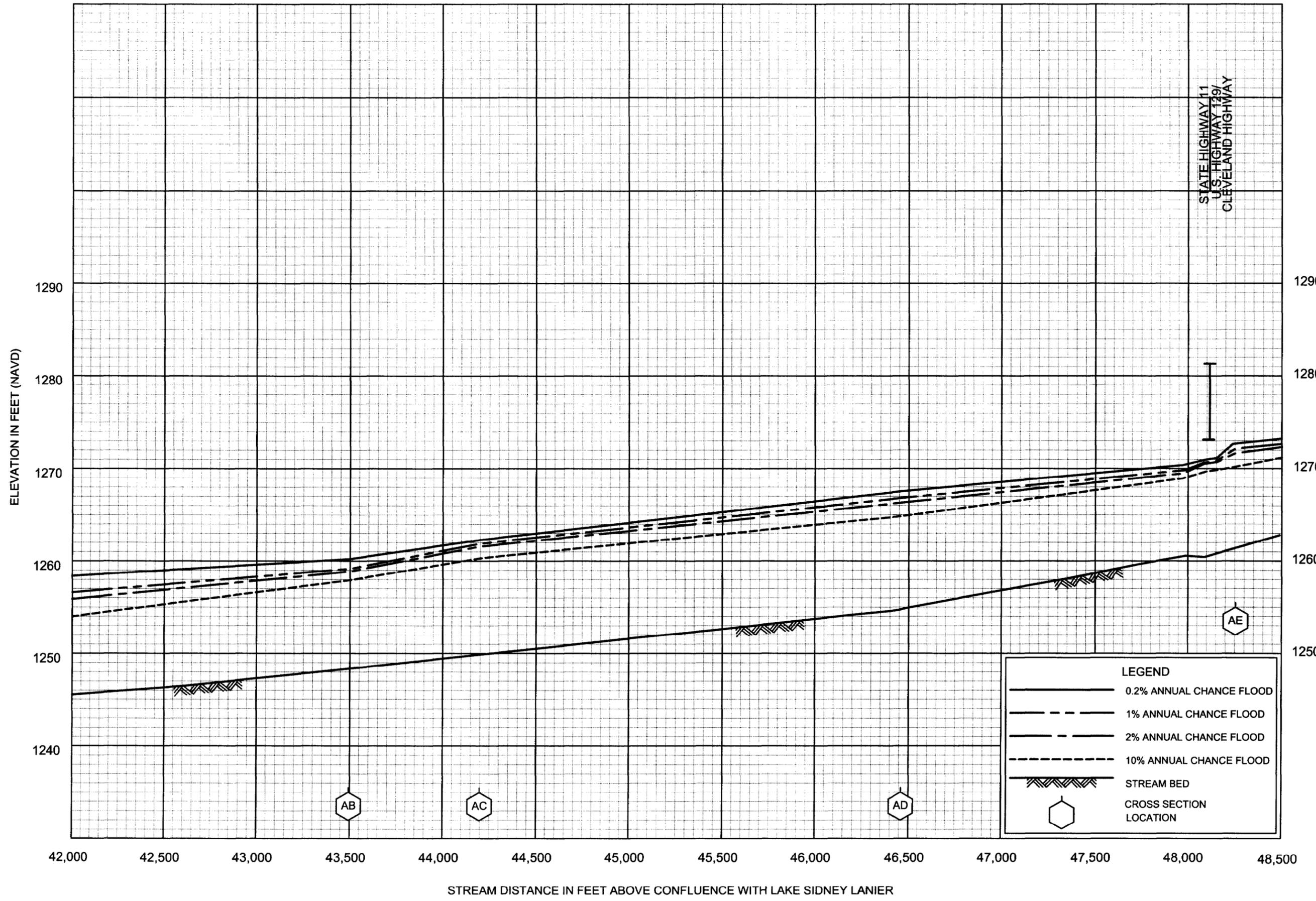
LEGEND	
	0.2% ANNUAL CHANGE FLOOD
	1% ANNUAL CHANGE FLOOD
	2% ANNUAL CHANGE FLOOD
	10% ANNUAL CHANGE FLOOD
	STREAM BED
	CROSS SECTION LOCATION

FLOOD PROFILES

EAST FORK LITTLE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS



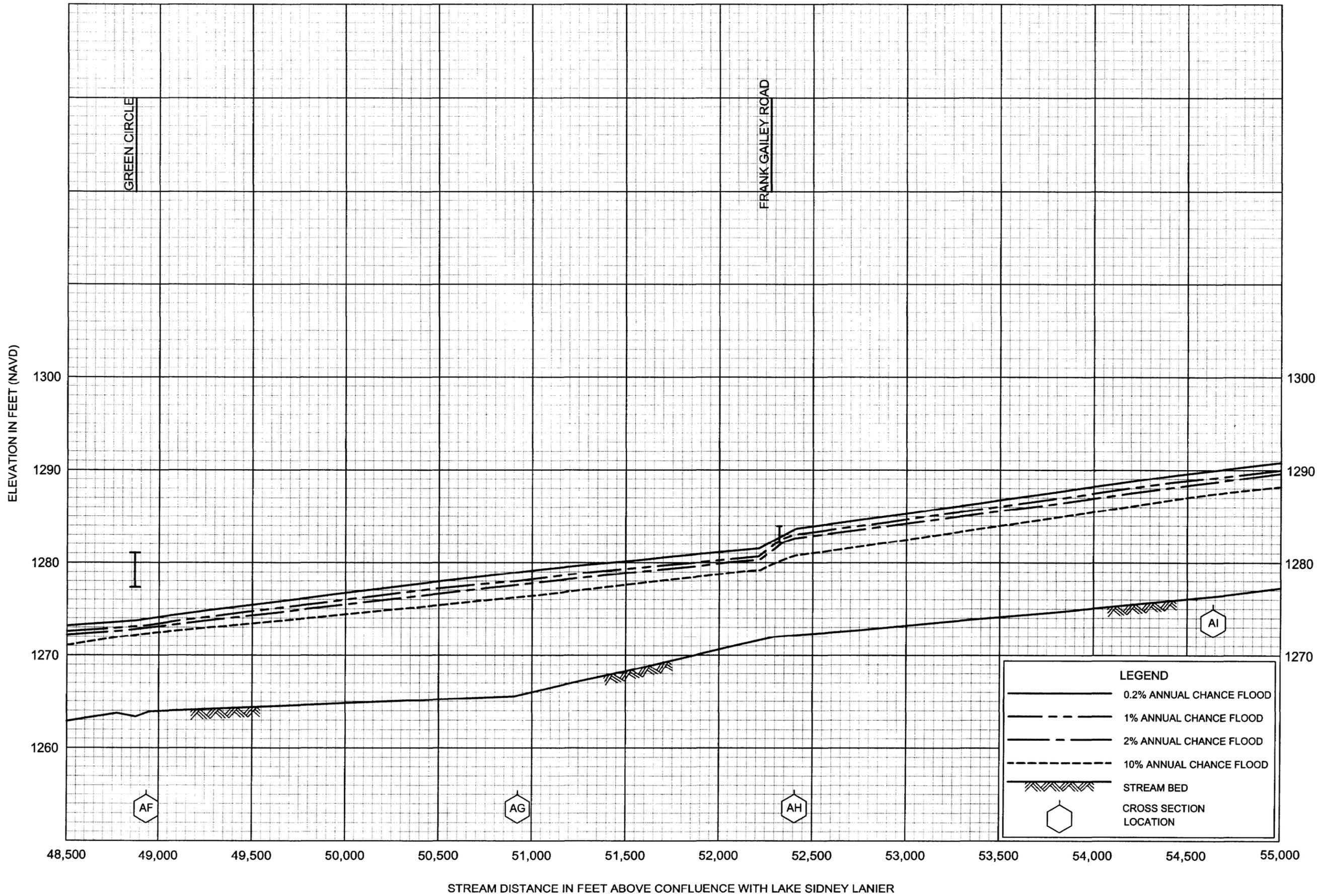
FLOOD PROFILES

EAST FORK LITTLE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA

AND INCORPORATED AREAS

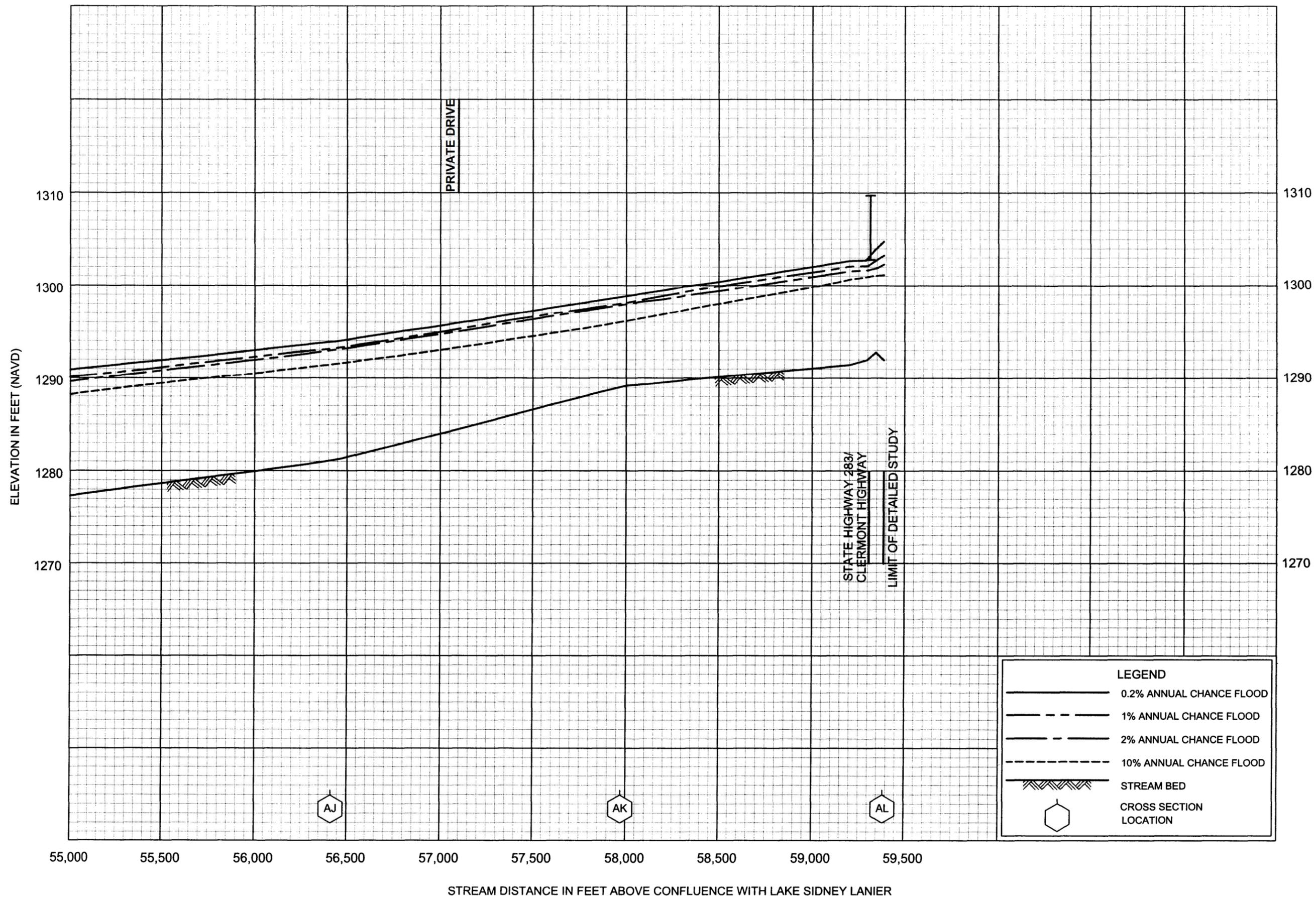


FLOOD PROFILES

EAST FORK LITTLE RIVER

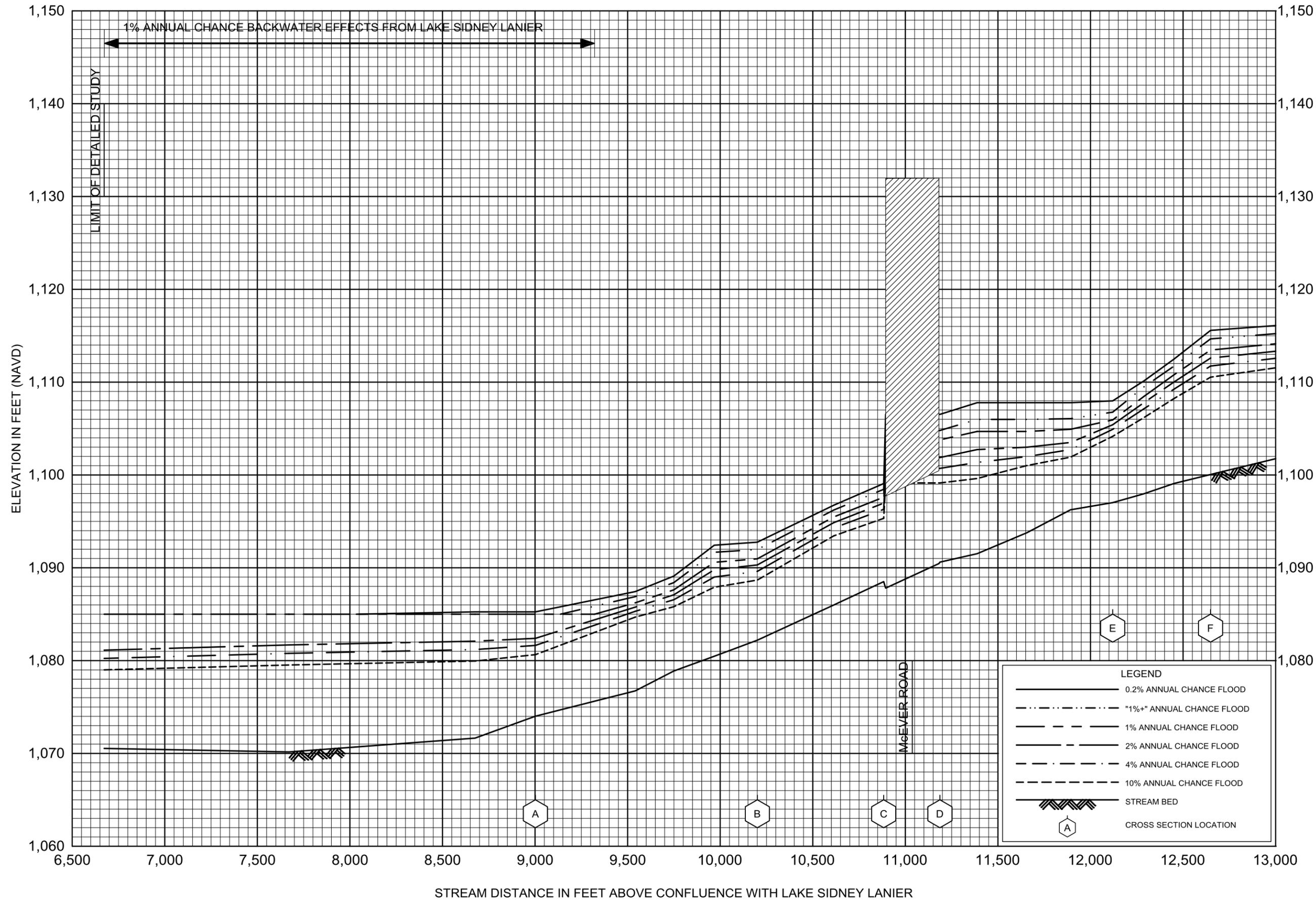
FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS



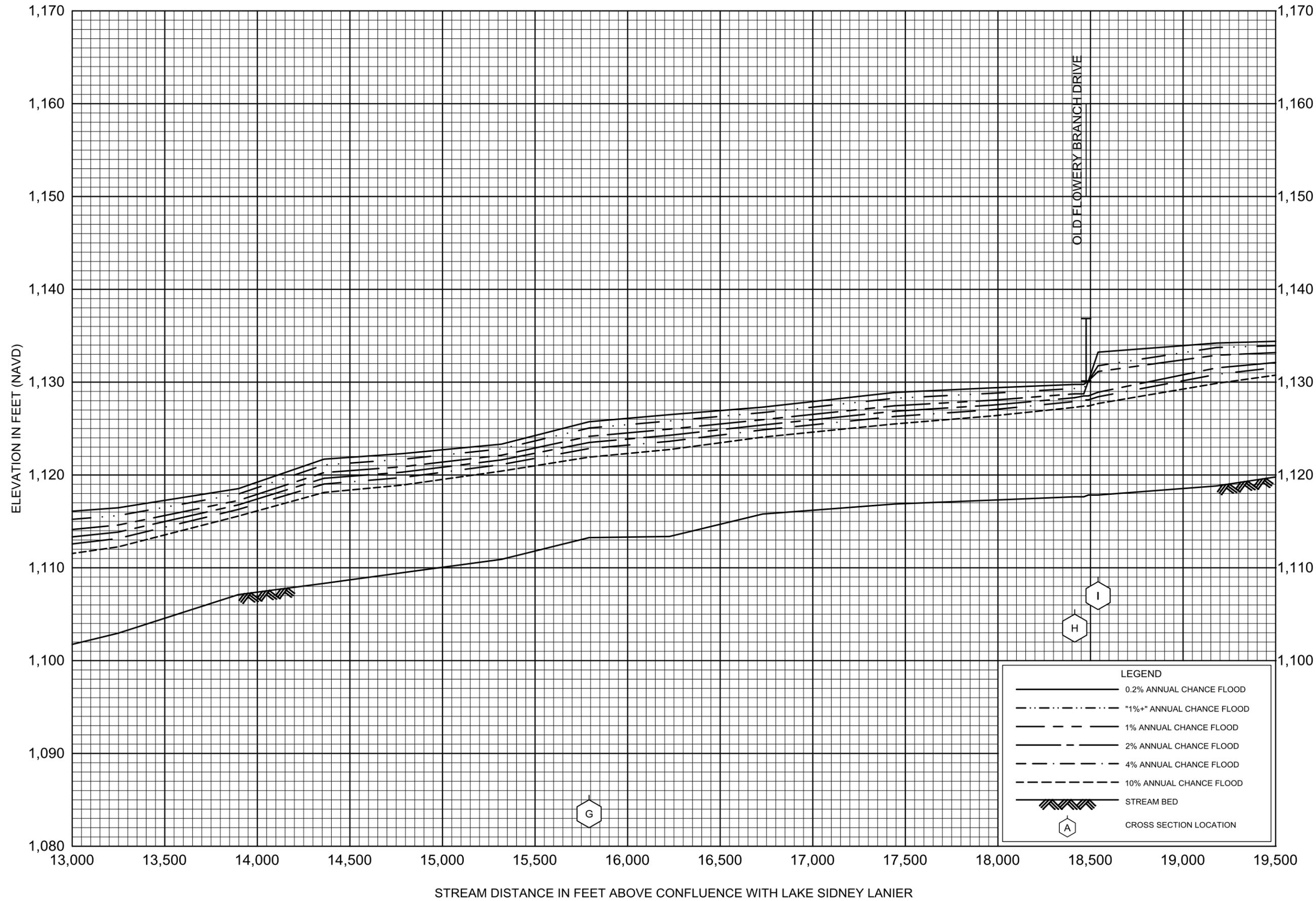
FLOOD PROFILES  
EAST FORK LITTLE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY  
HALL COUNTY, GA  
AND INCORPORATED AREAS



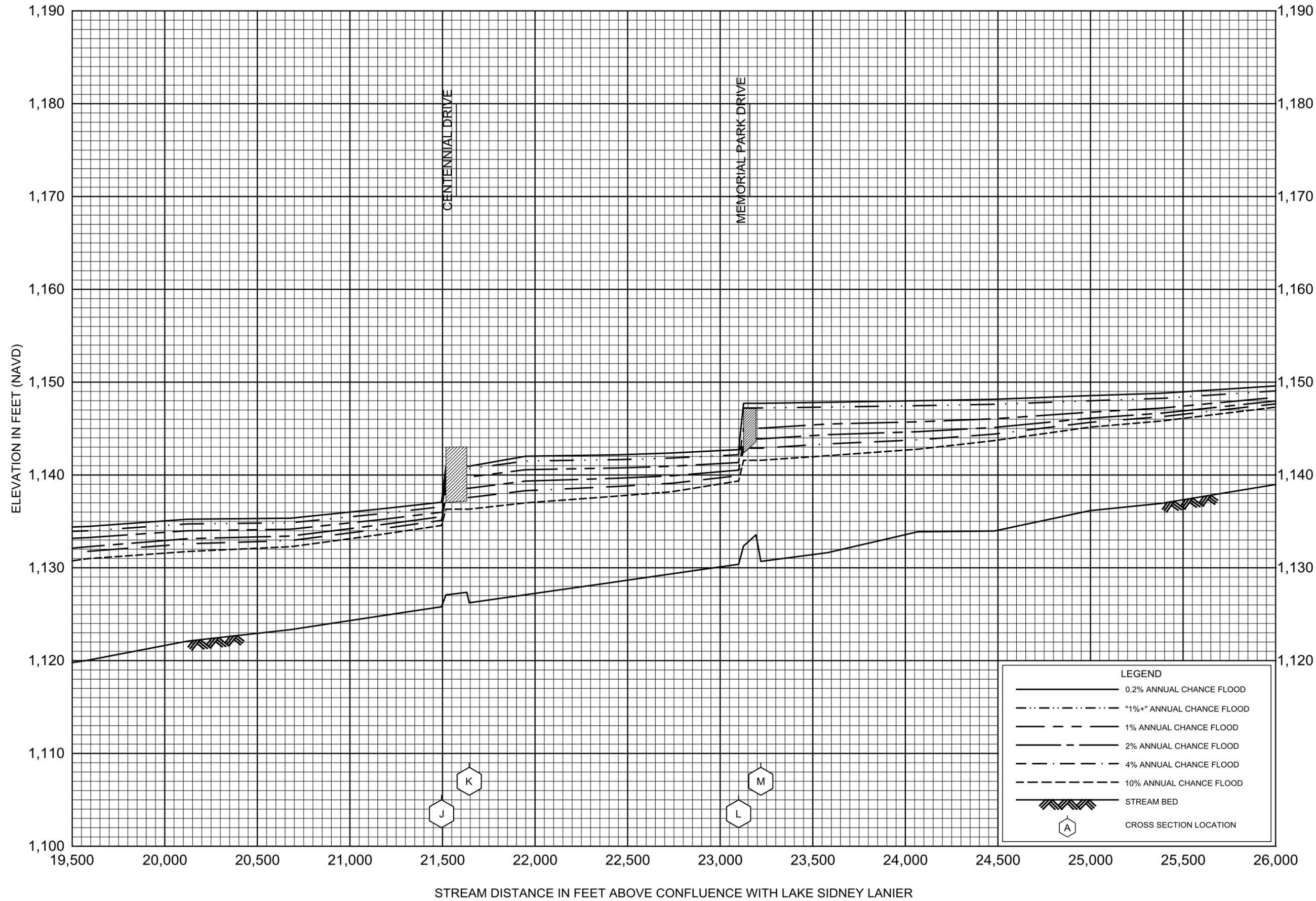
FLOOD PROFILES  
FLAT CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
HALL COUNTY, GA  
AND INCORPORATED AREAS



FLOOD PROFILES  
FLAT CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
HALL COUNTY, GA  
AND INCORPORATED AREAS

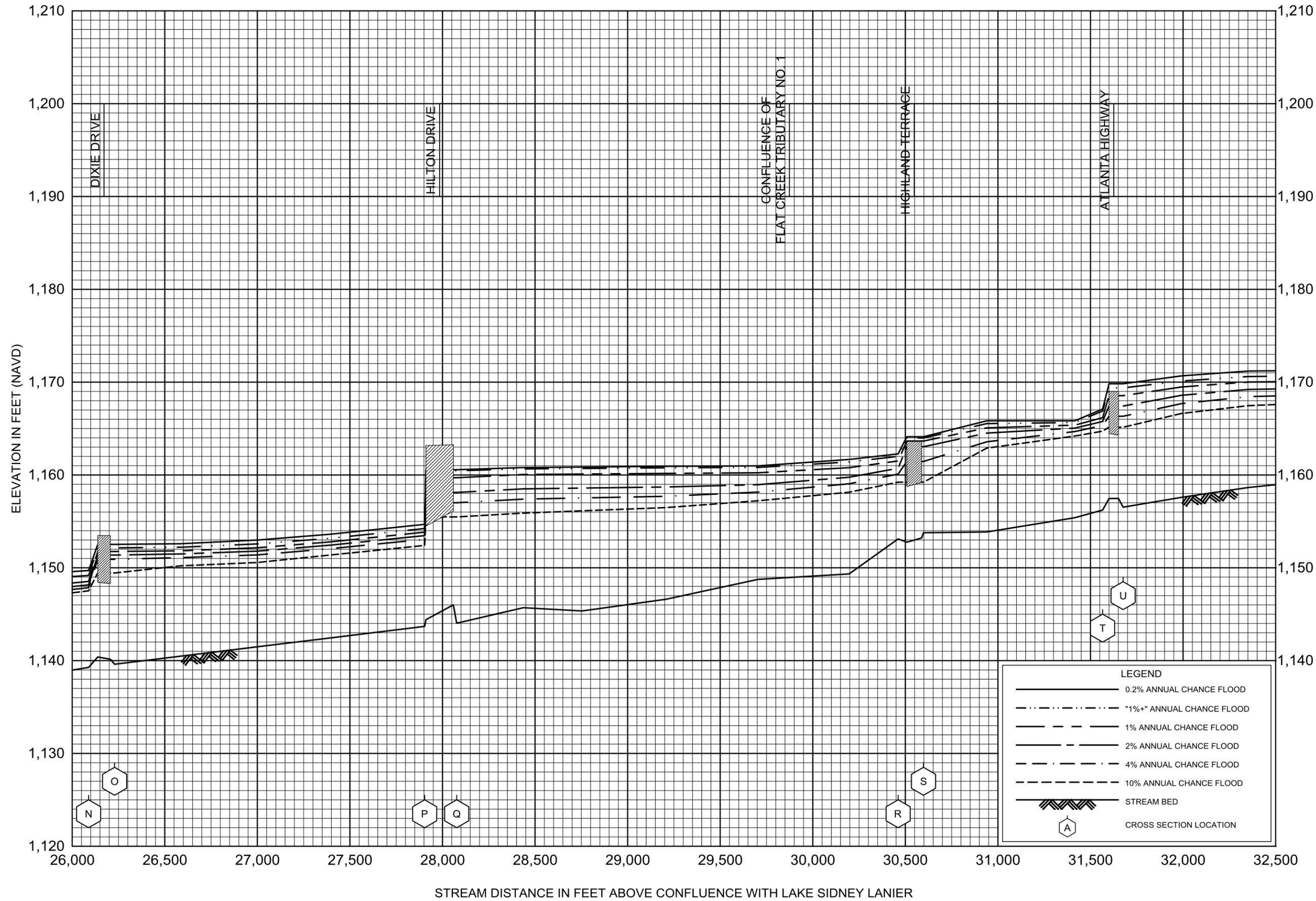


FLOOD PROFILES

FLAT CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS

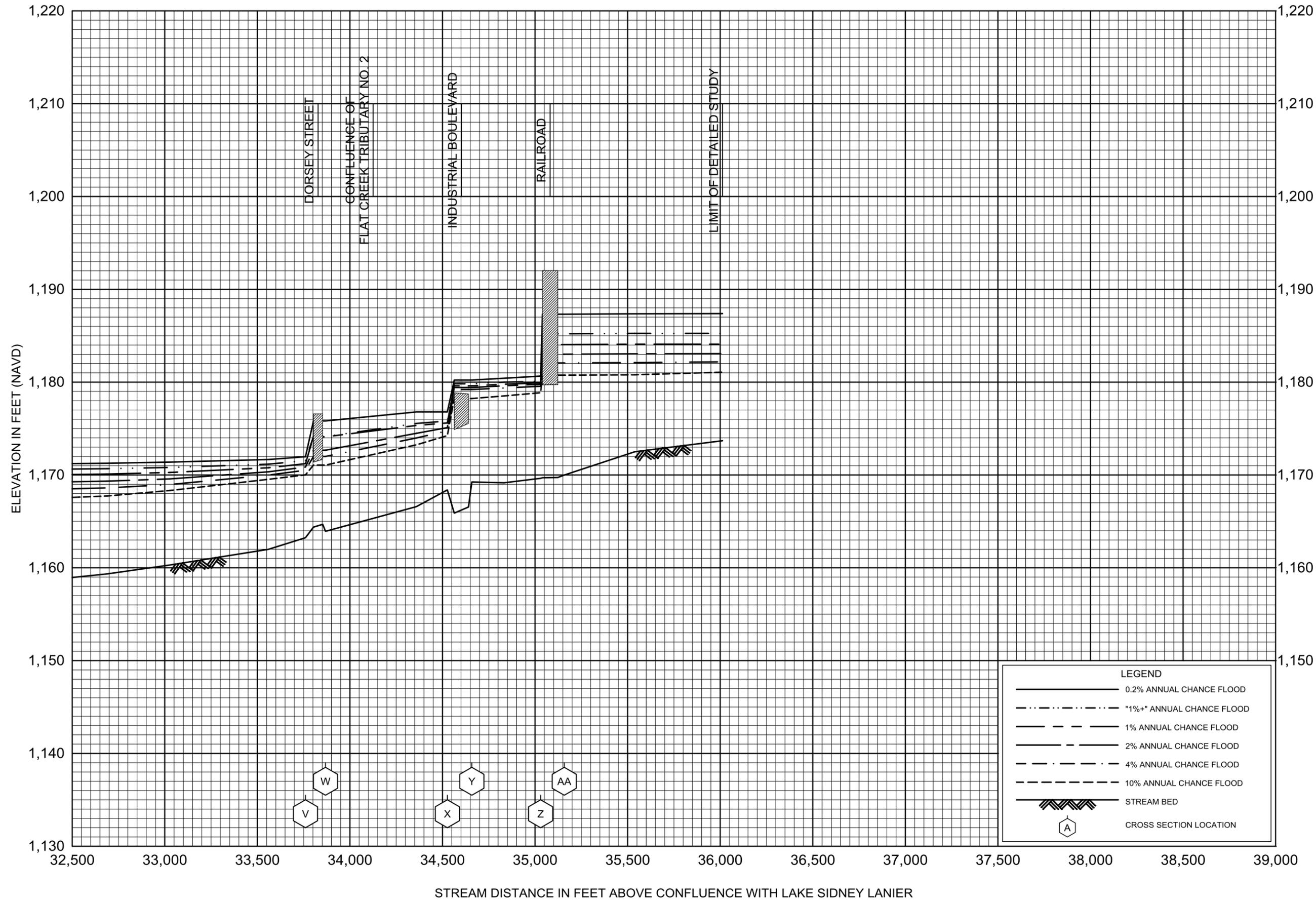


FLOOD PROFILES

FLAT CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

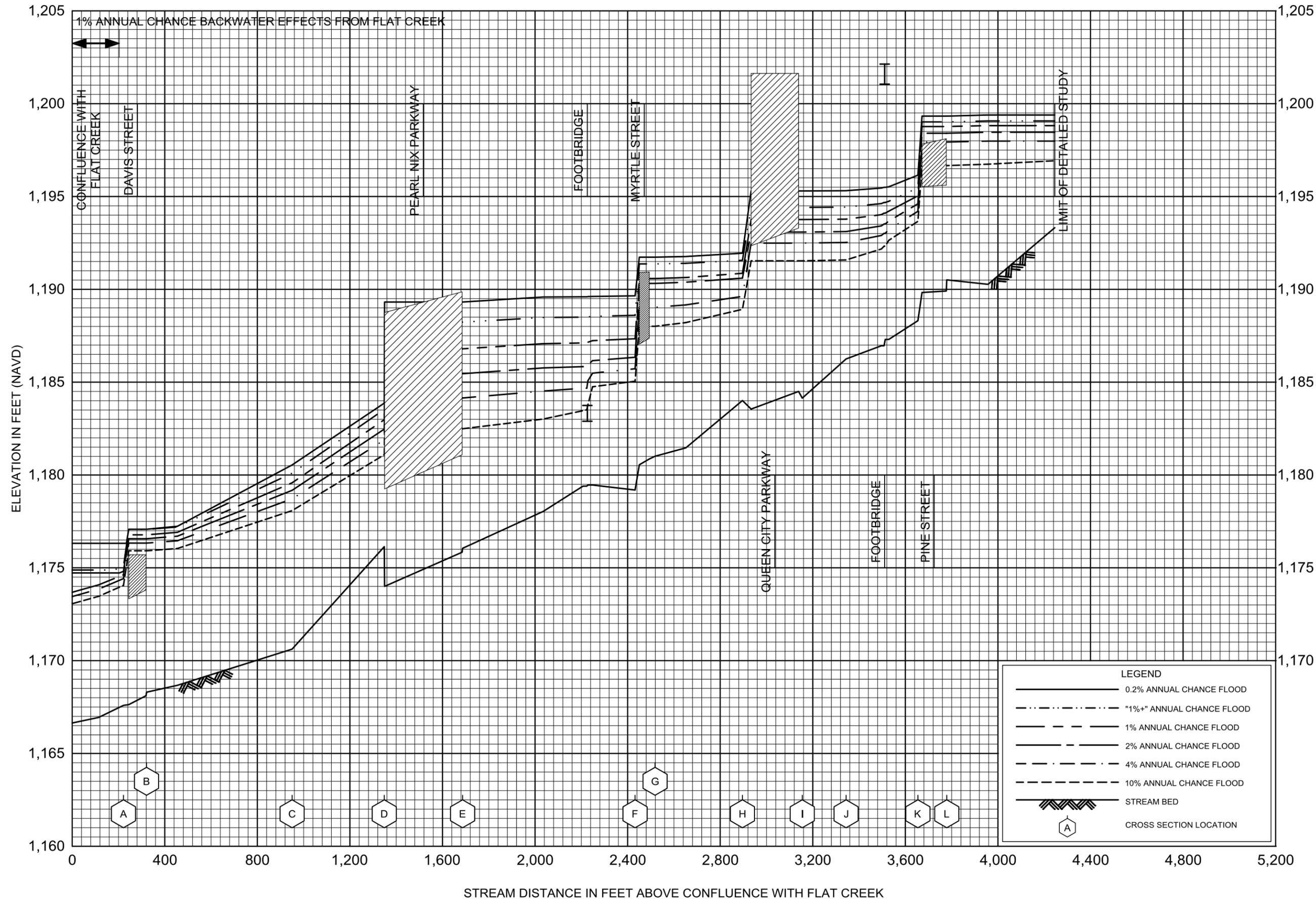
HALL COUNTY, GA  
AND INCORPORATED AREAS



FLOOD PROFILES  
FLAT CREEK

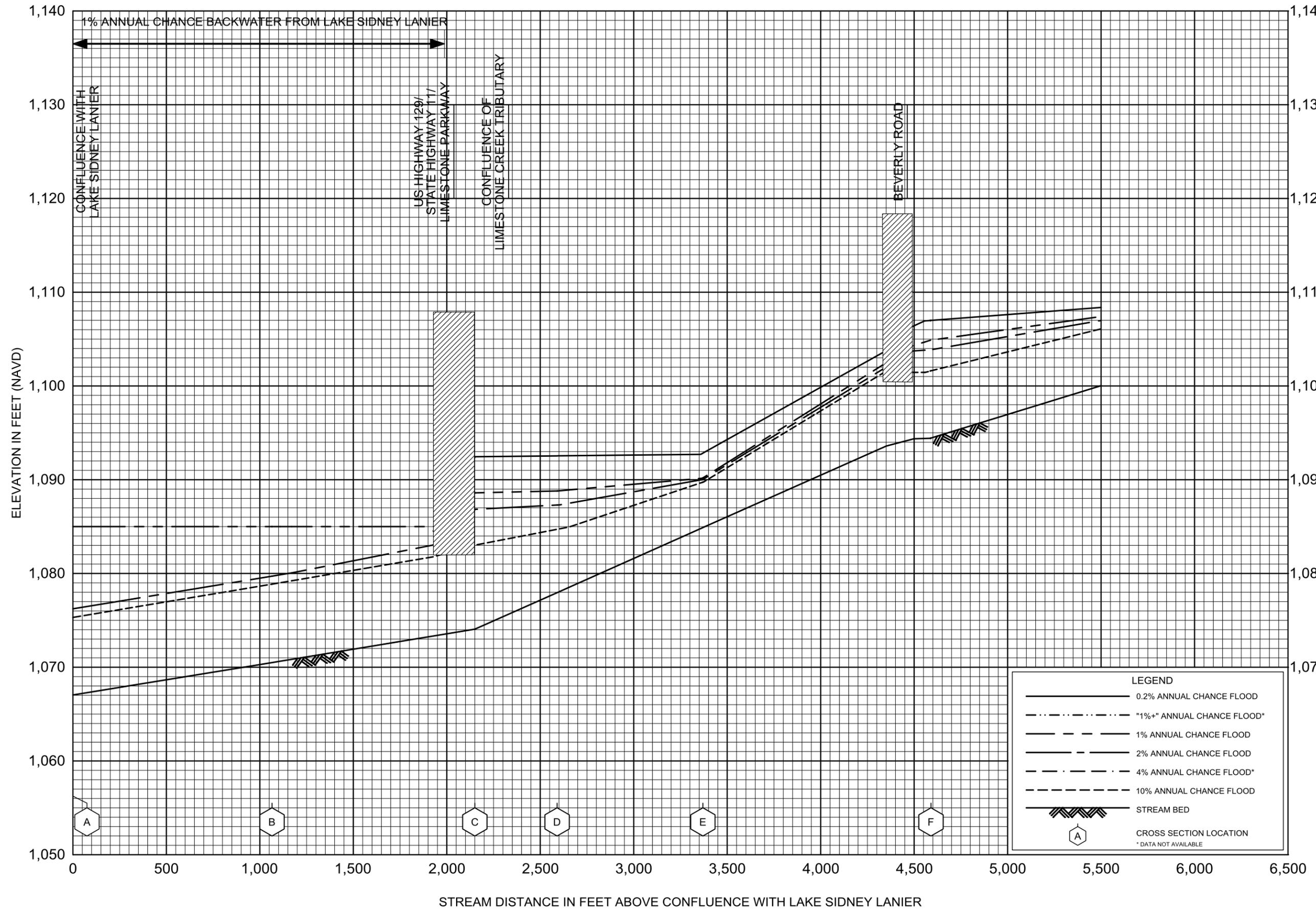
FEDERAL EMERGENCY MANAGEMENT AGENCY  
HALL COUNTY, GA  
AND INCORPORATED AREAS





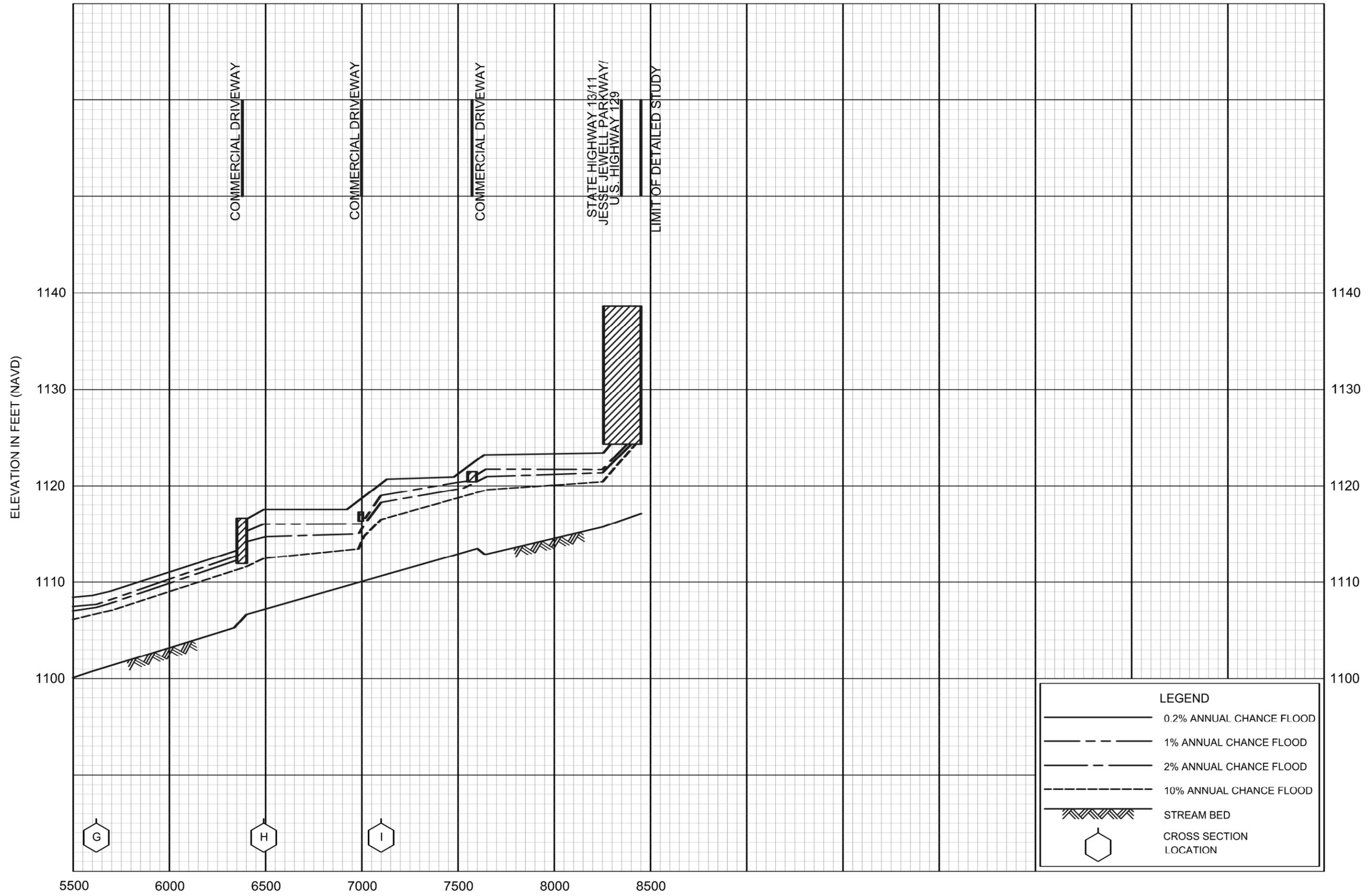
FLOOD PROFILES  
FLAT CREEK TRIBUTARY NO. 2

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**HALL COUNTY, GA**  
AND INCORPORATED AREAS



FLOOD PROFILES  
LIMESTONE CREEK

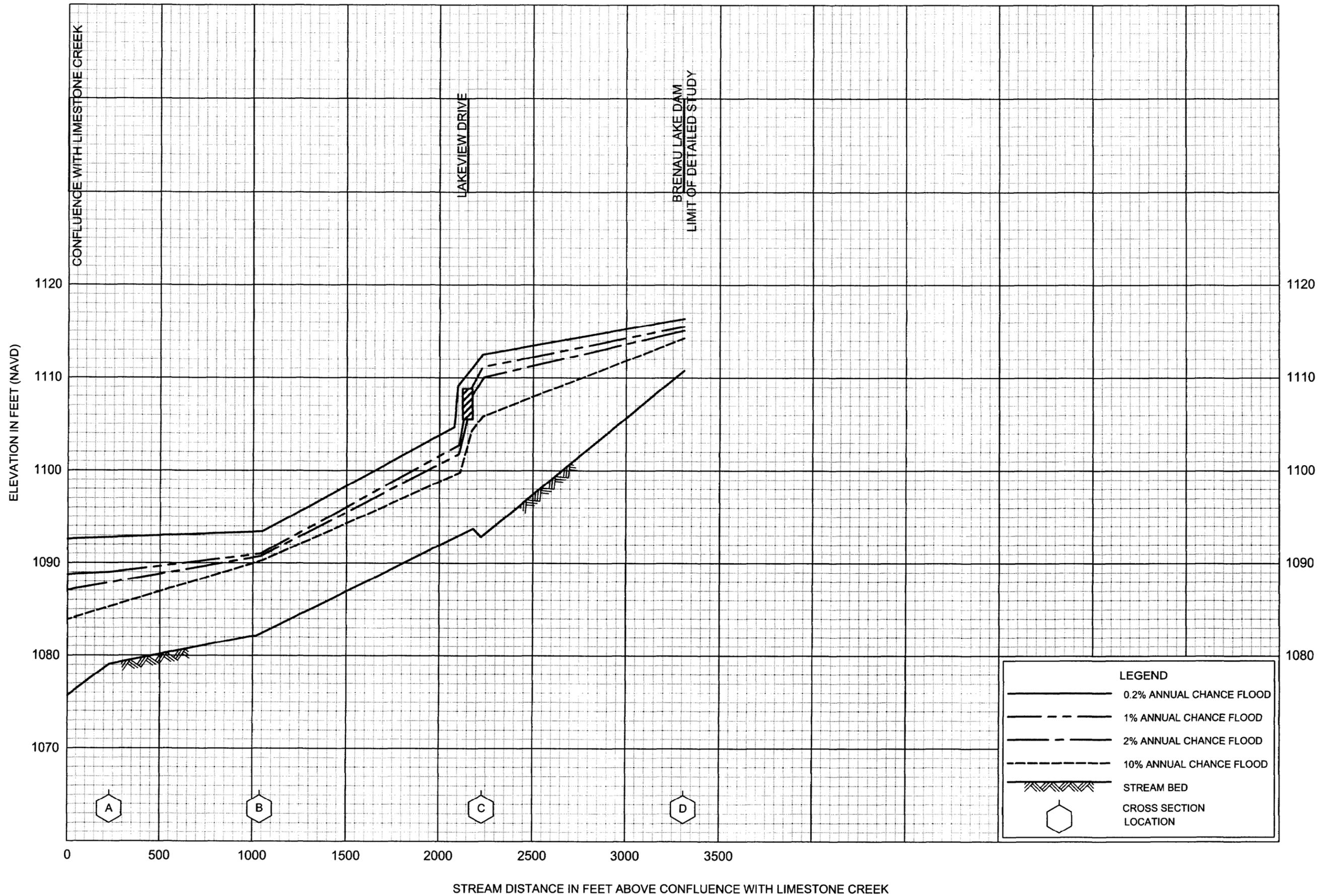
FEDERAL EMERGENCY MANAGEMENT AGENCY  
HALL COUNTY, GA  
AND INCORPORATED AREAS



STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH LAKE SIDNEY LANIER

FLOOD PROFILES  
LIMESTONE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
HALL COUNTY, GA  
AND INCORPORATED AREAS

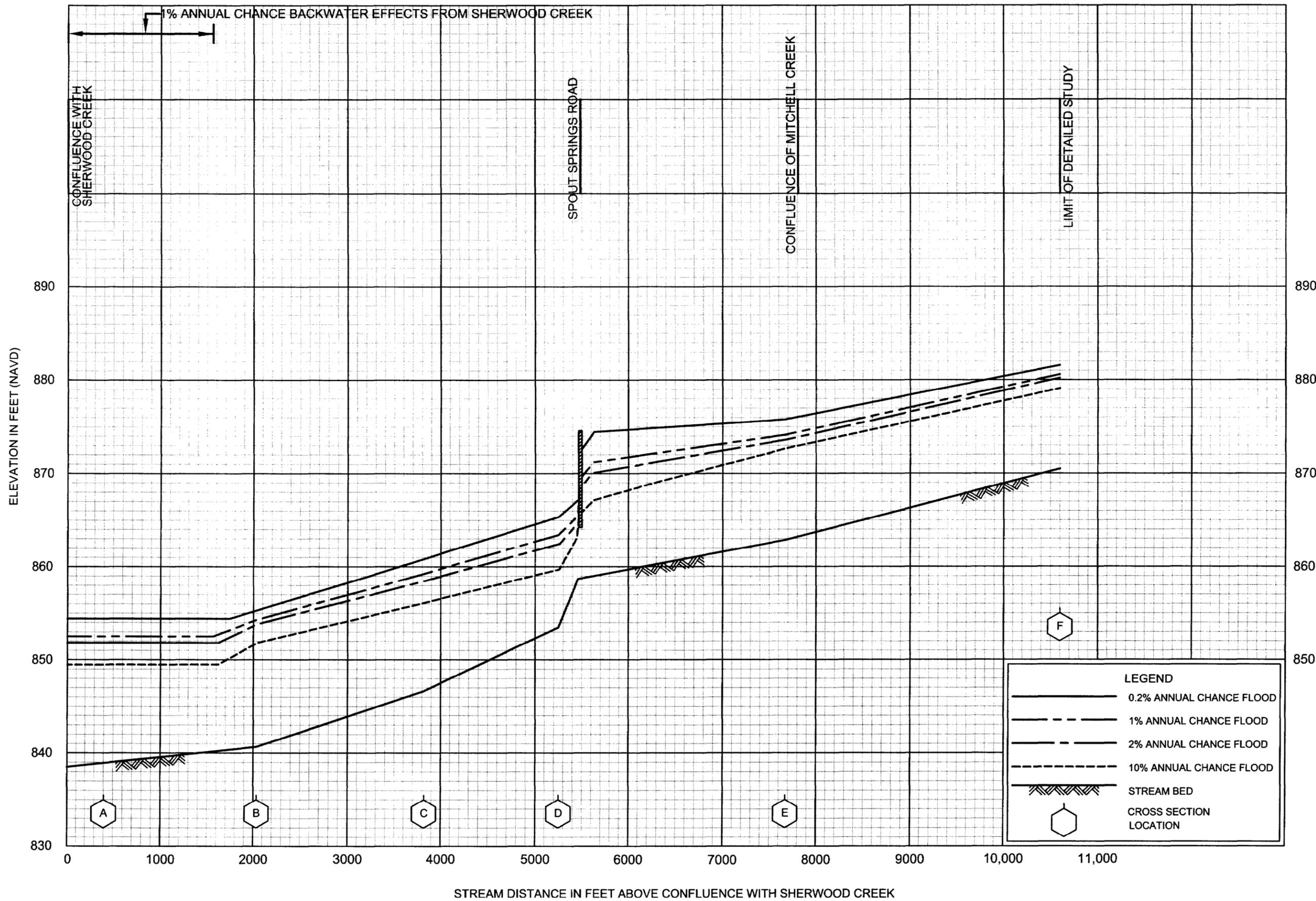


**FLOOD PROFILES**

**LIMESTONE CREEK TRIBUTARY**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**HALL COUNTY, GA**  
AND INCORPORATED AREAS

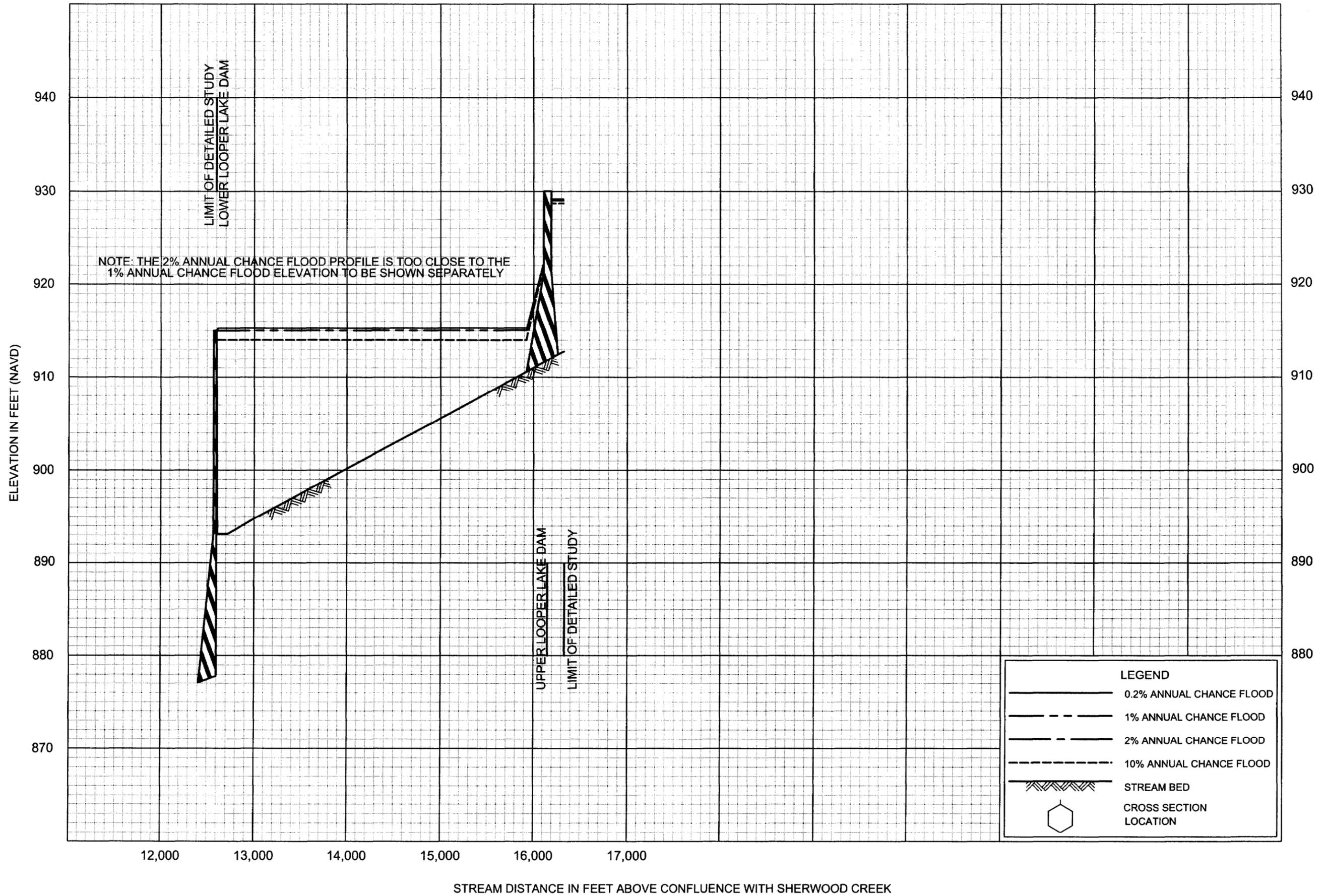


FLOOD PROFILES

LOLLIS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS

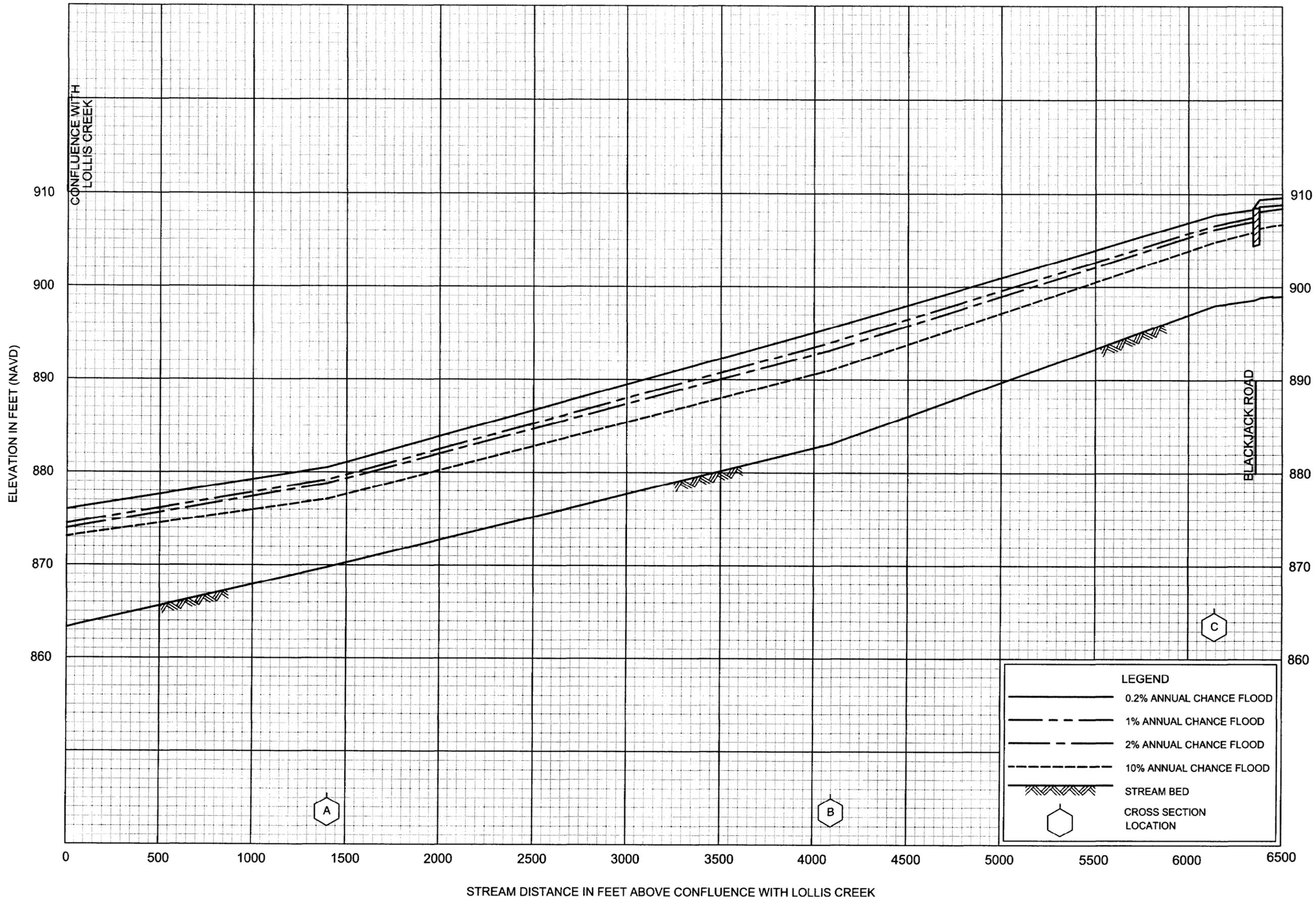


FLOOD PROFILES

LOLLIS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS

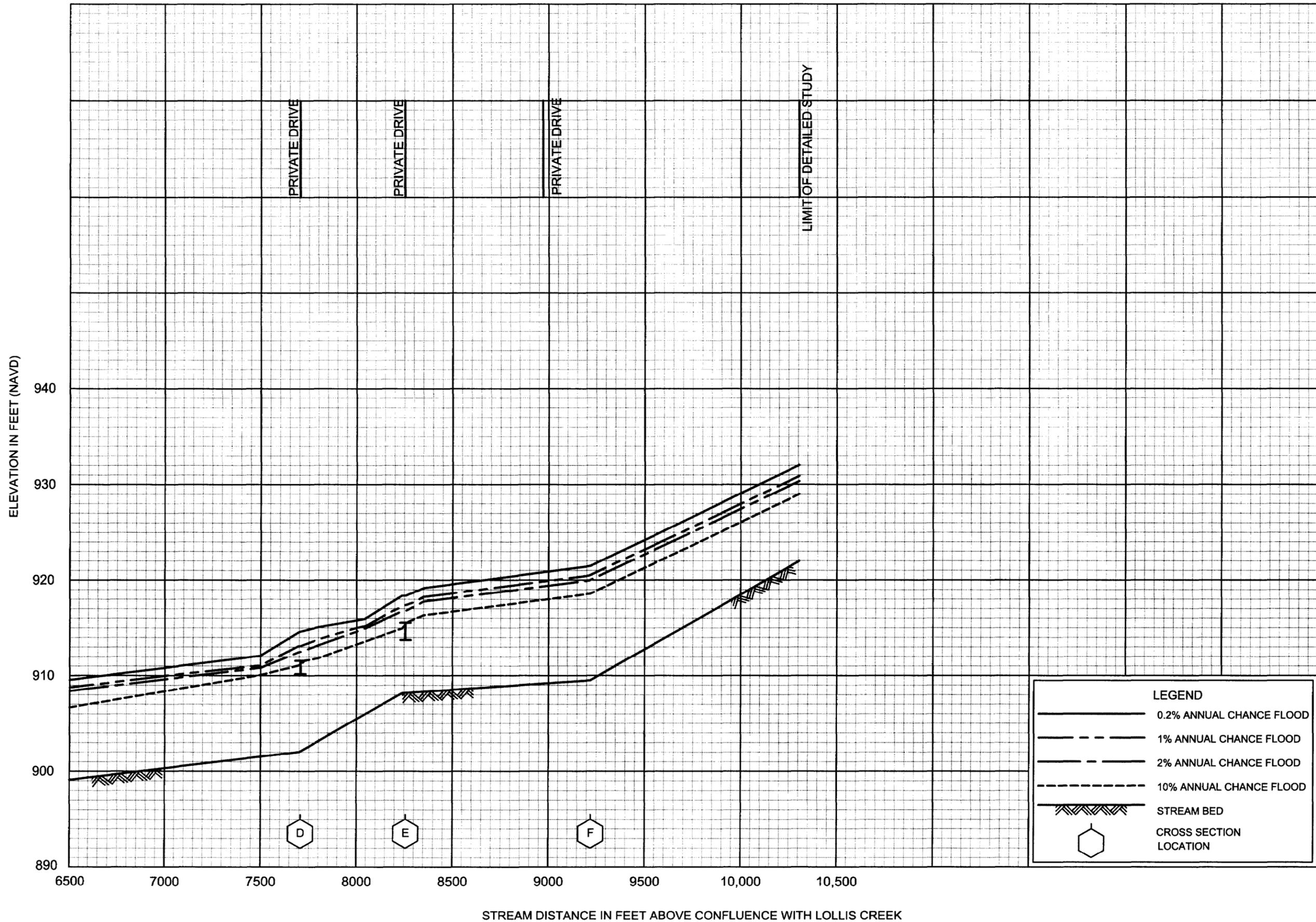


FLOOD PROFILES

MITCHELL CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS

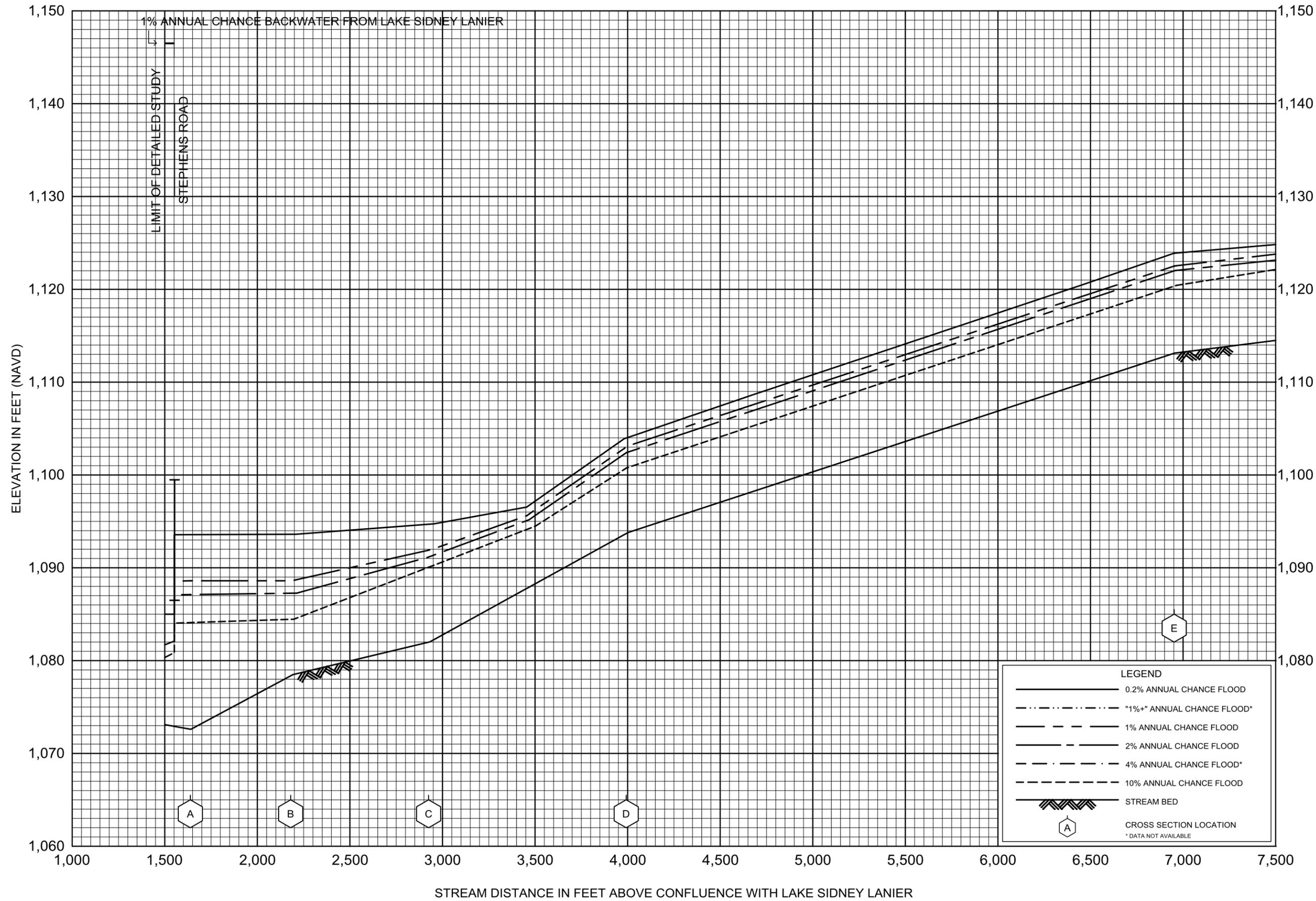


FLOOD PROFILES

MITCHELL CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS



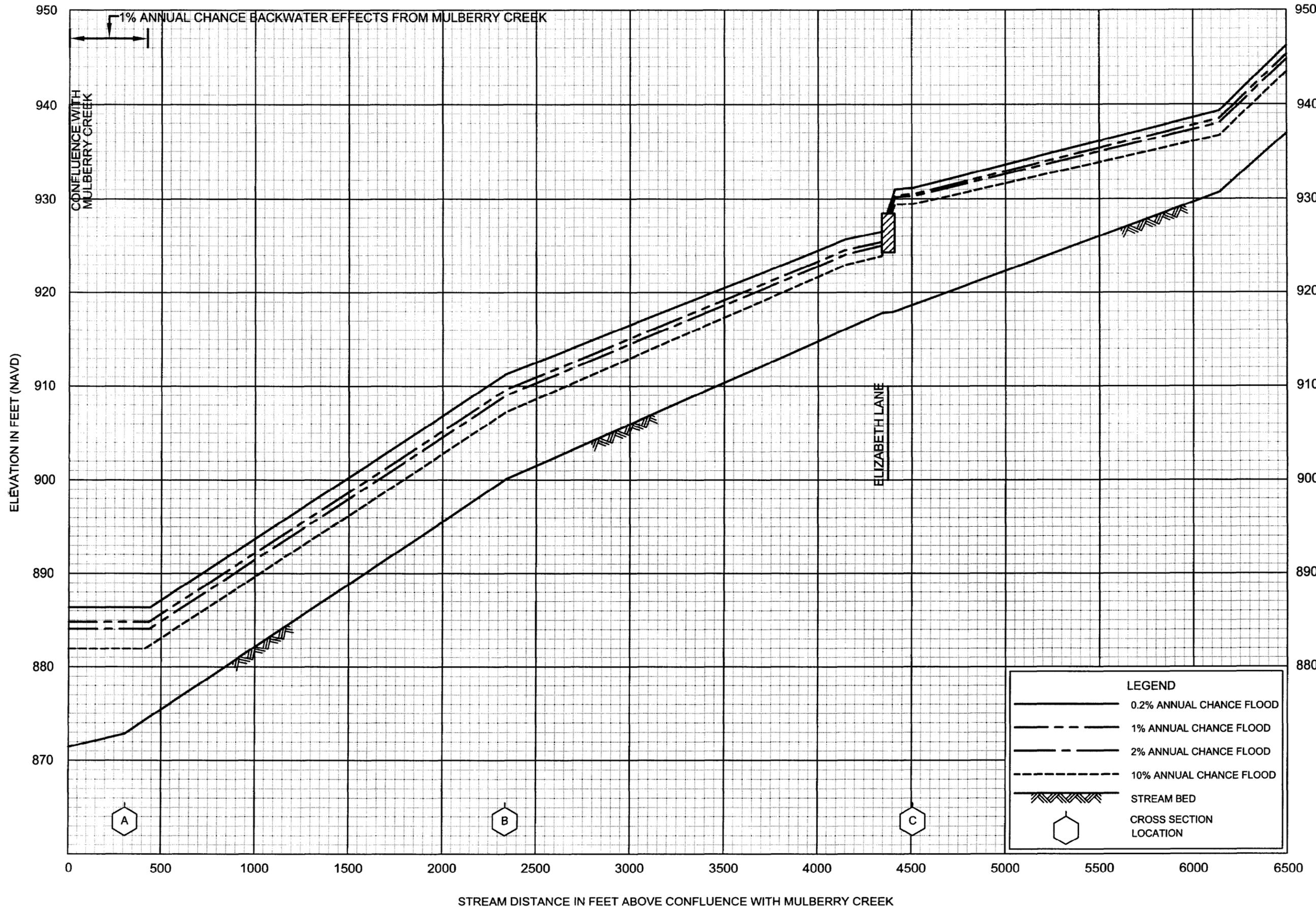
**FLOOD PROFILES**

**MUD CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**HALL COUNTY, GA**  
AND INCORPORATED AREAS



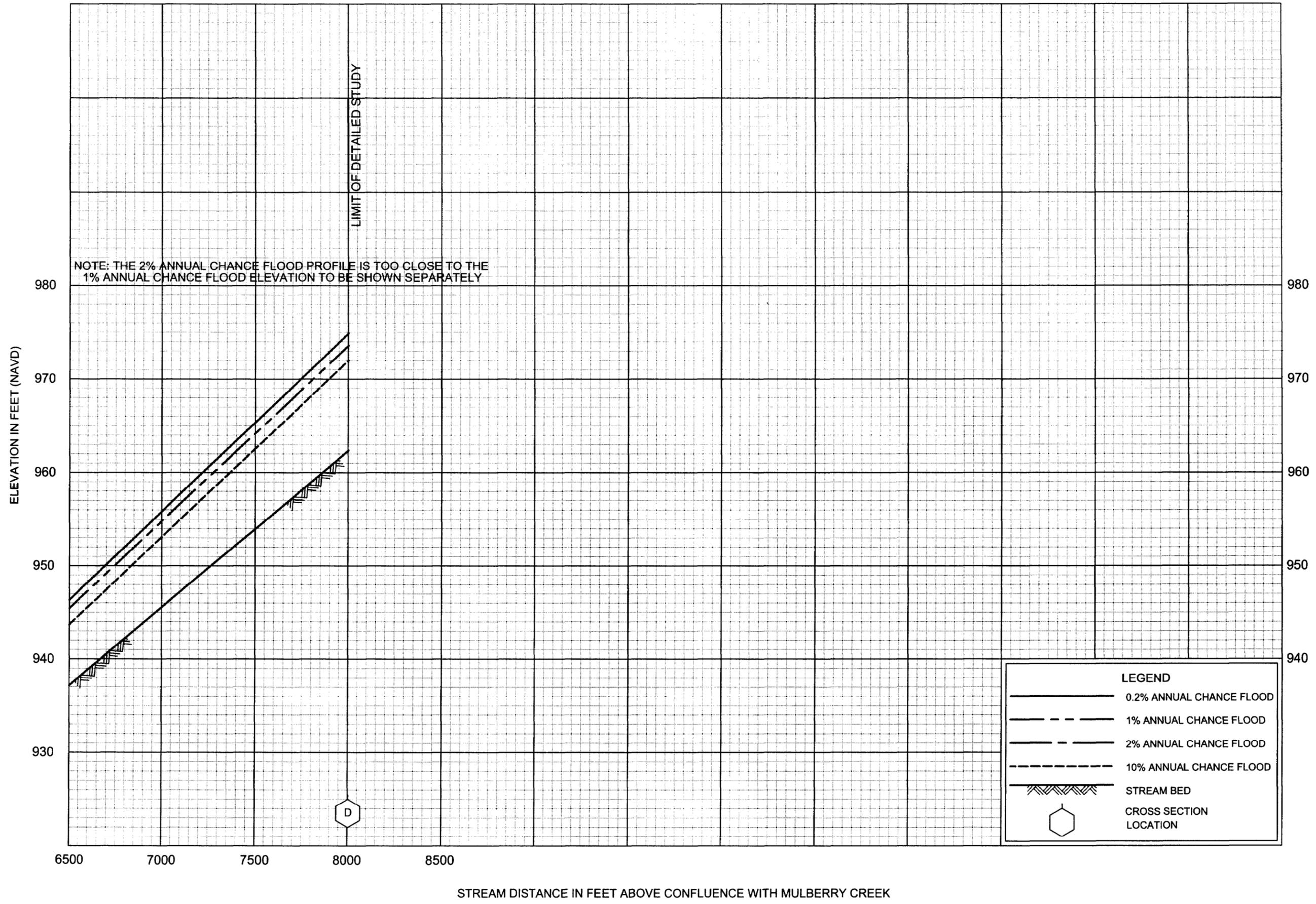


FLOOD PROFILES

MULBERRY CREEK TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS

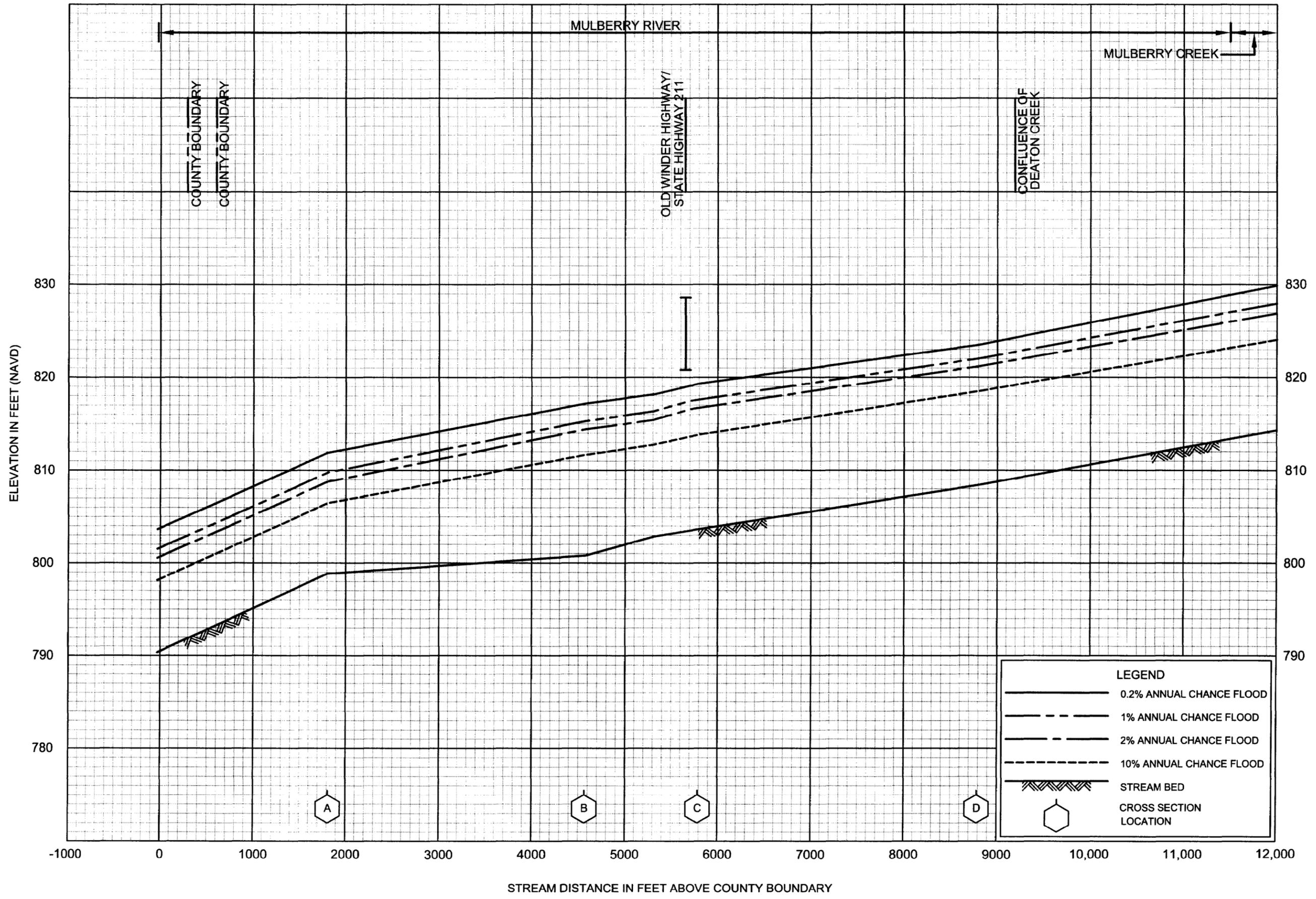


FLOOD PROFILES

MULBERRY CREEK TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS

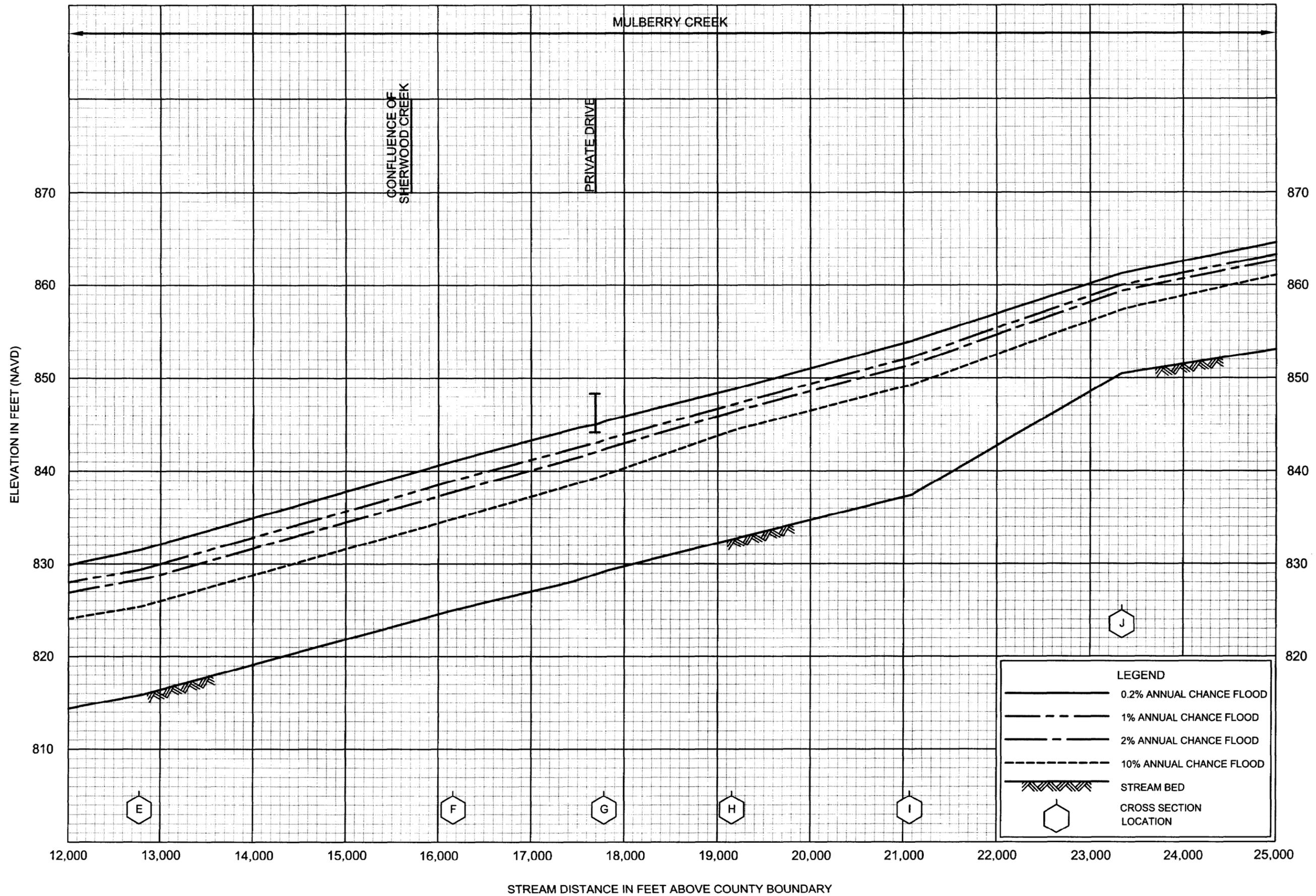


FLOOD PROFILES

MULBERRY RIVER / MULBERRY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS

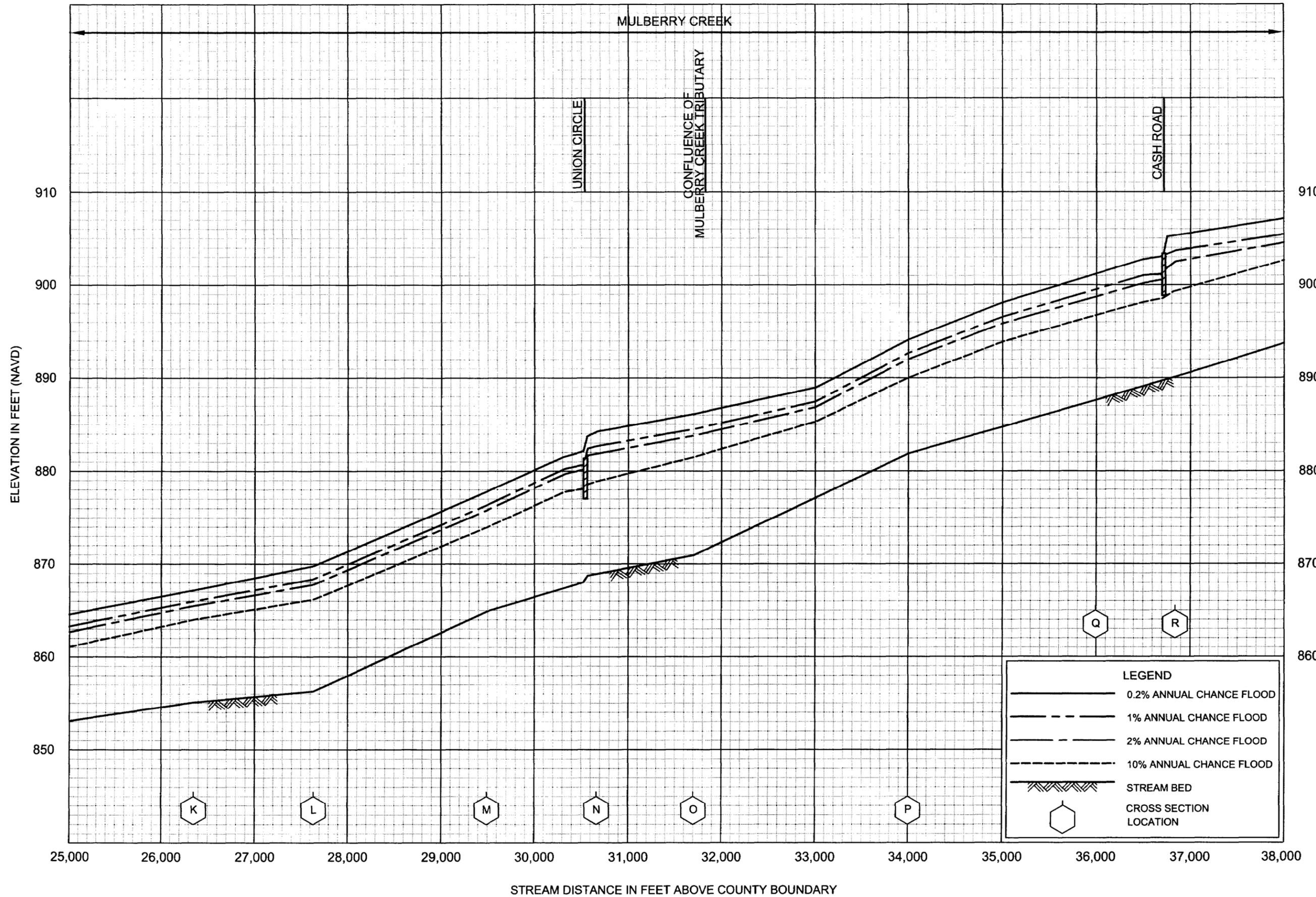


**FLOOD PROFILES**

**MULBERRY RIVER / MULBERRY CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**HALL COUNTY, GA**  
AND INCORPORATED AREAS

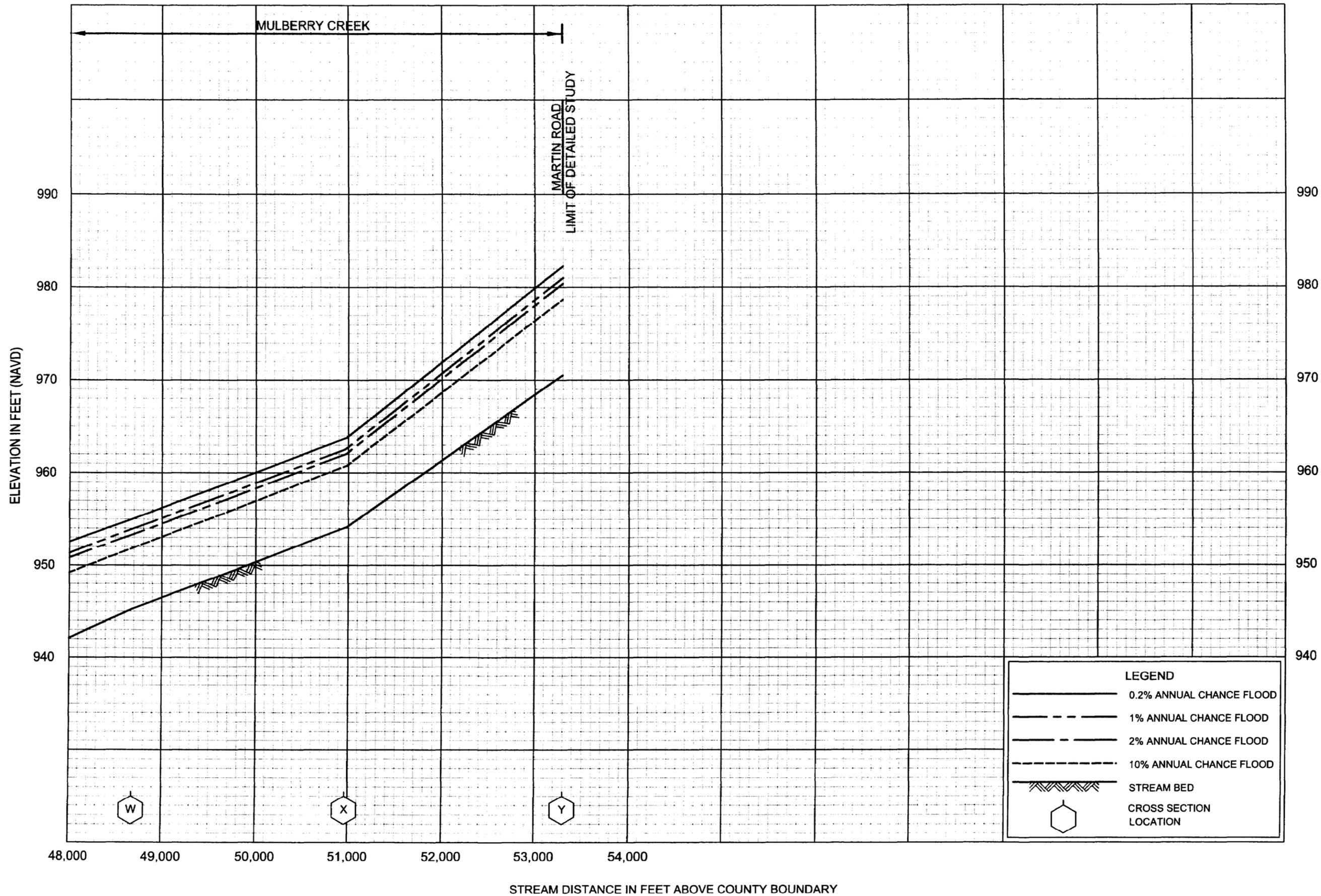


FLOOD PROFILES

MULBERRY RIVER / MULBERRY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
HALL COUNTY, GA  
AND INCORPORATED AREAS



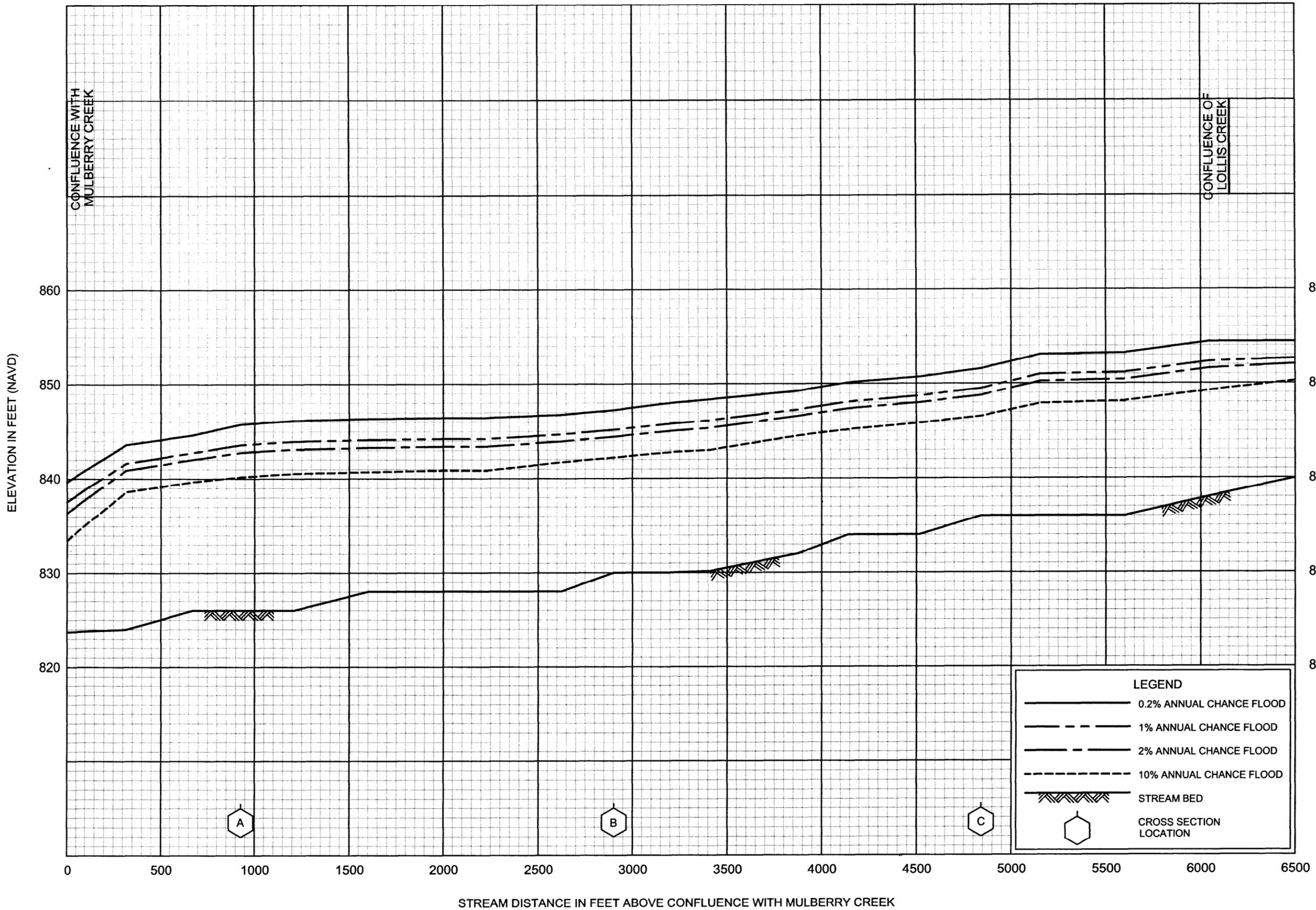


**FLOOD PROFILES**

**MULBERRY RIVER / MULBERRY CREEK**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**HALL COUNTY, GA  
AND INCORPORATED AREAS**



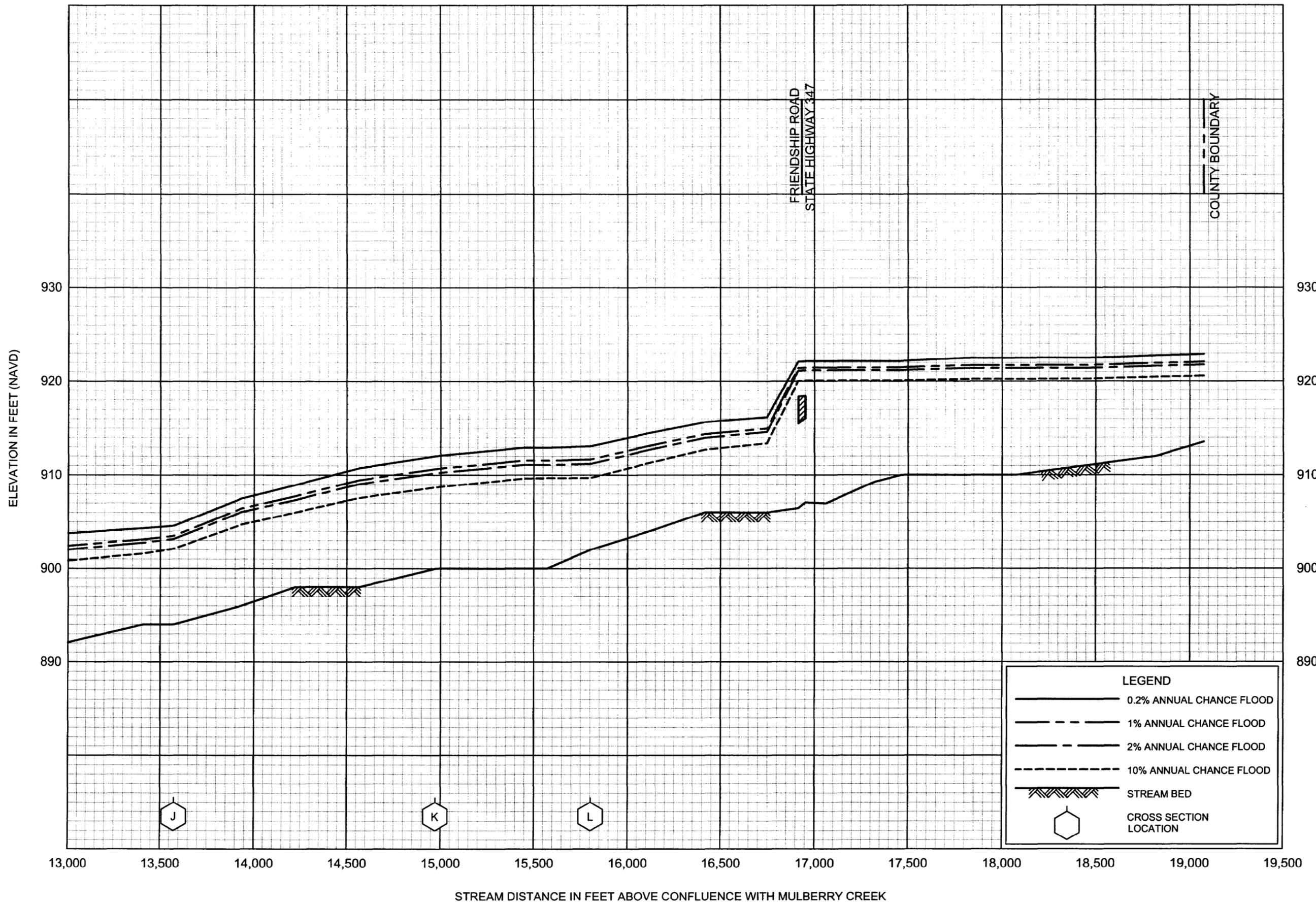
FLOOD PROFILES

SHERWOOD CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS





FLOOD PROFILES

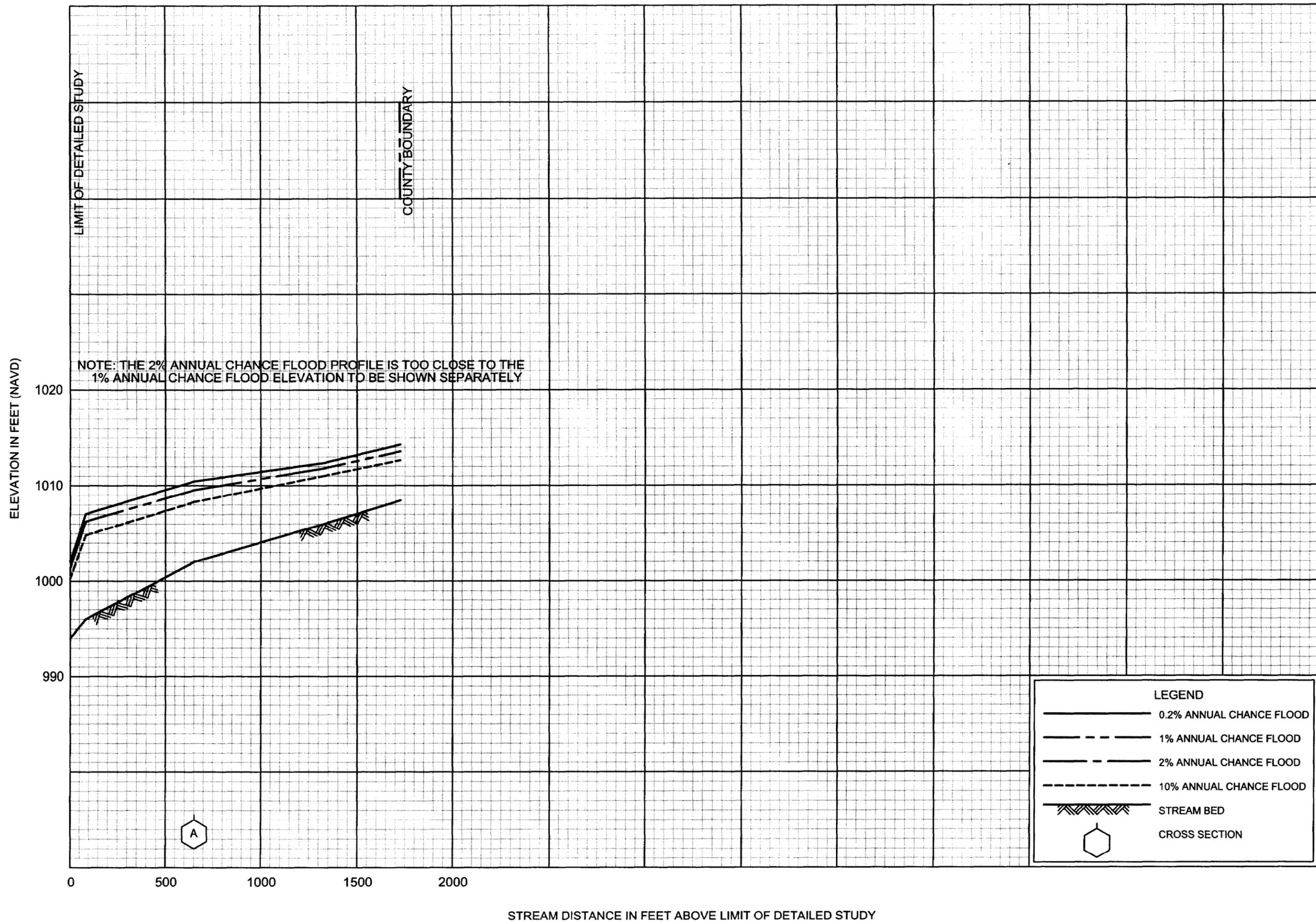
SHERWOOD CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS





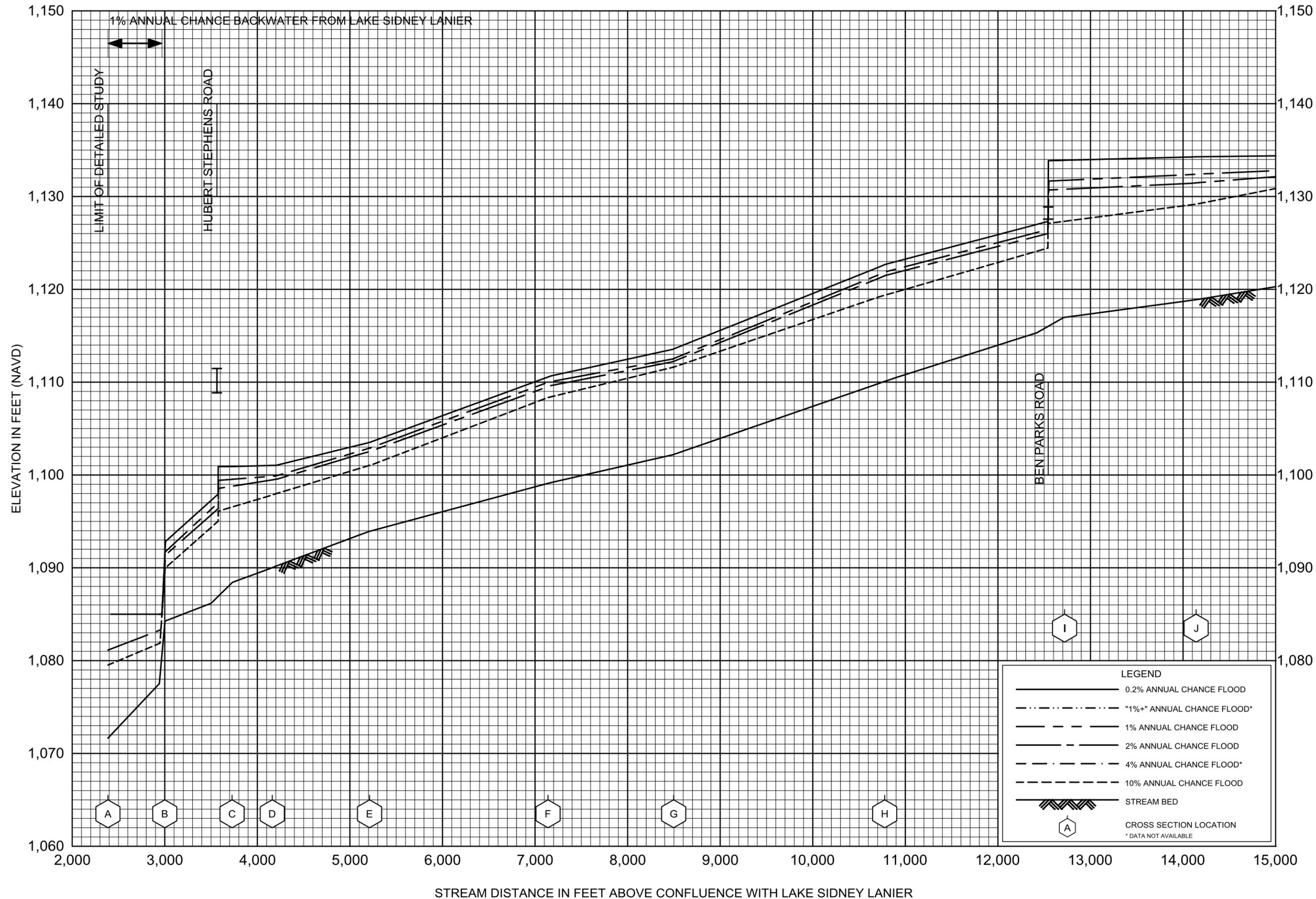


**FLOOD PROFILES**

UPPER MITCHELL CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS

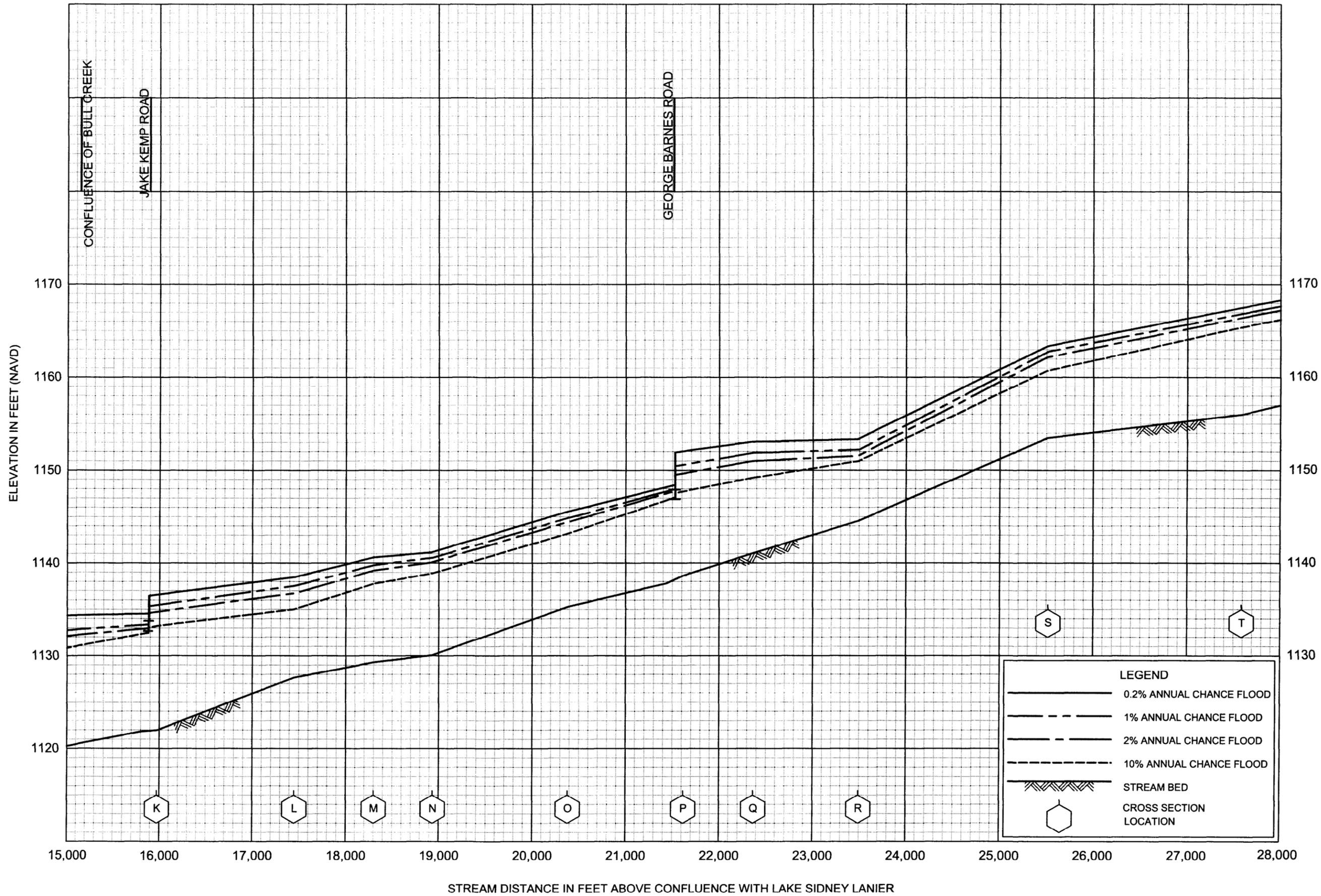


**FLOOD PROFILES**

**WAHOO CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**HALL COUNTY, GA**  
AND INCORPORATED AREAS

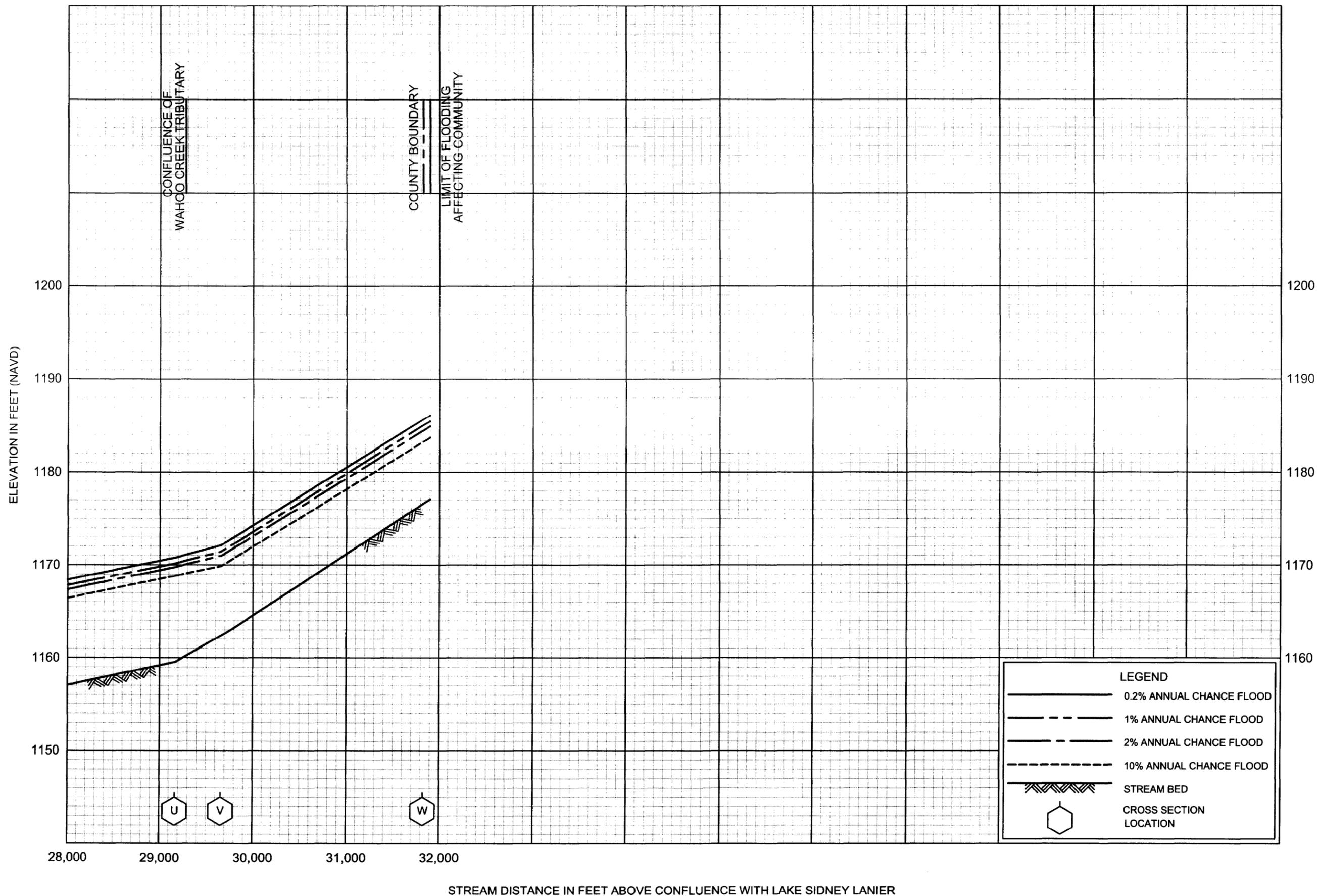


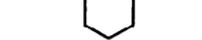
**FLOOD PROFILES**

**WAHOO CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**HALL COUNTY, GA**  
AND INCORPORATED AREAS



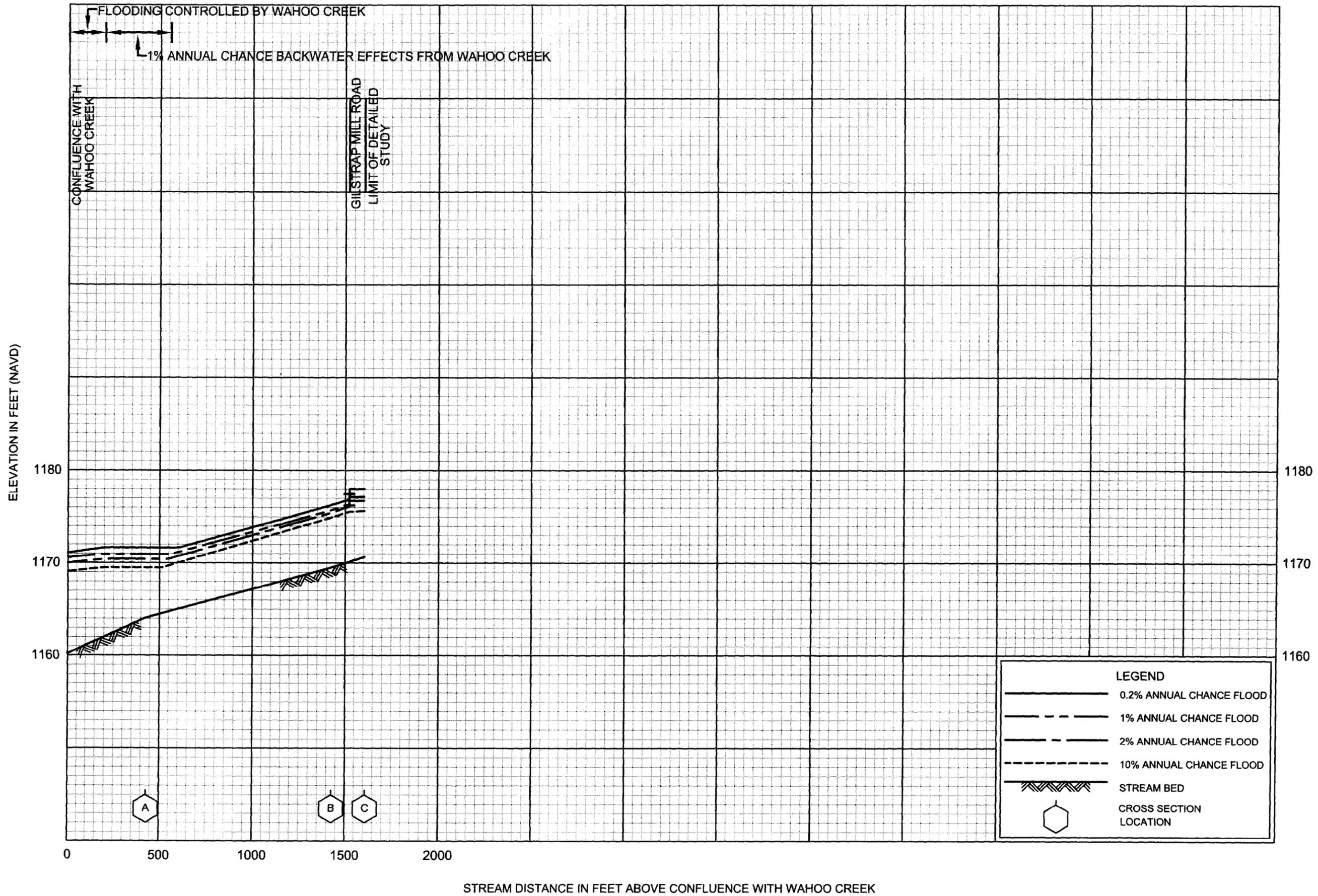
LEGEND	
	0.2% ANNUAL CHANCE FLOOD
	1% ANNUAL CHANCE FLOOD
	2% ANNUAL CHANCE FLOOD
	10% ANNUAL CHANCE FLOOD
	STREAM BED
	CROSS SECTION LOCATION

FLOOD PROFILES

WAHOO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS



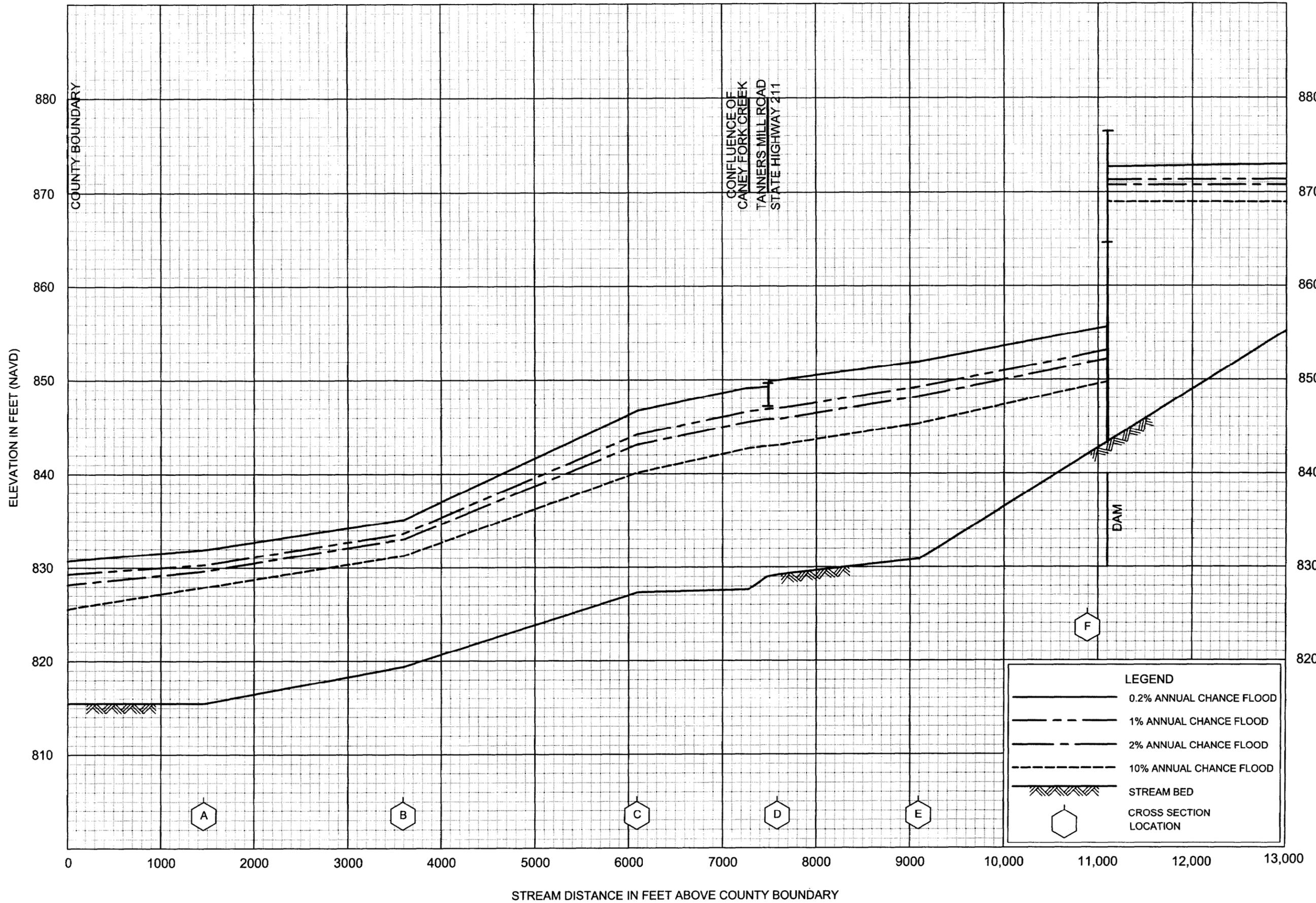
FLOOD PROFILES

WAHOO CREEK TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

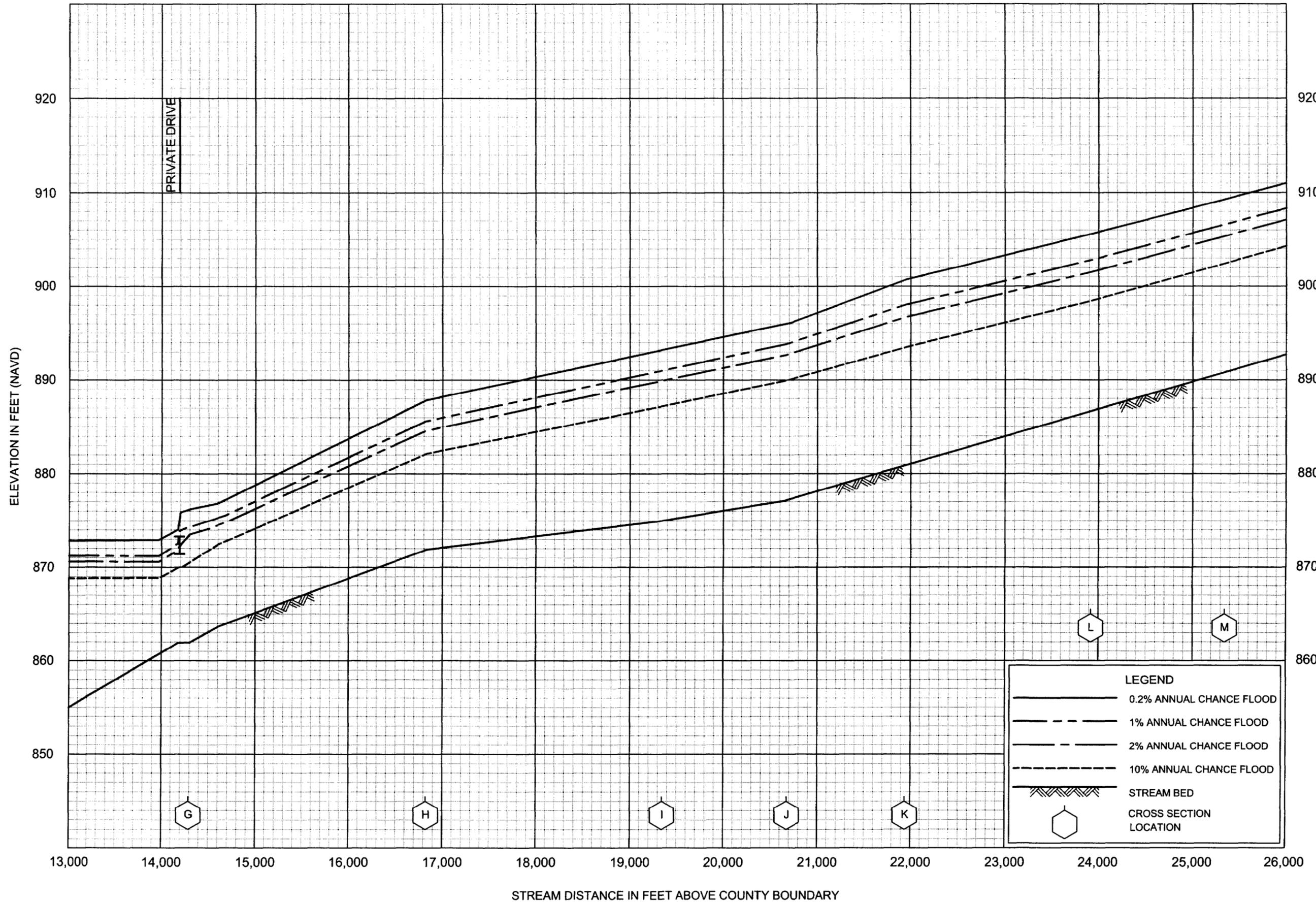
HALL COUNTY, GA

AND INCORPORATED AREAS



FLOOD PROFILES  
WALNUT CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY  
HALL COUNTY, GA  
AND INCORPORATED AREAS

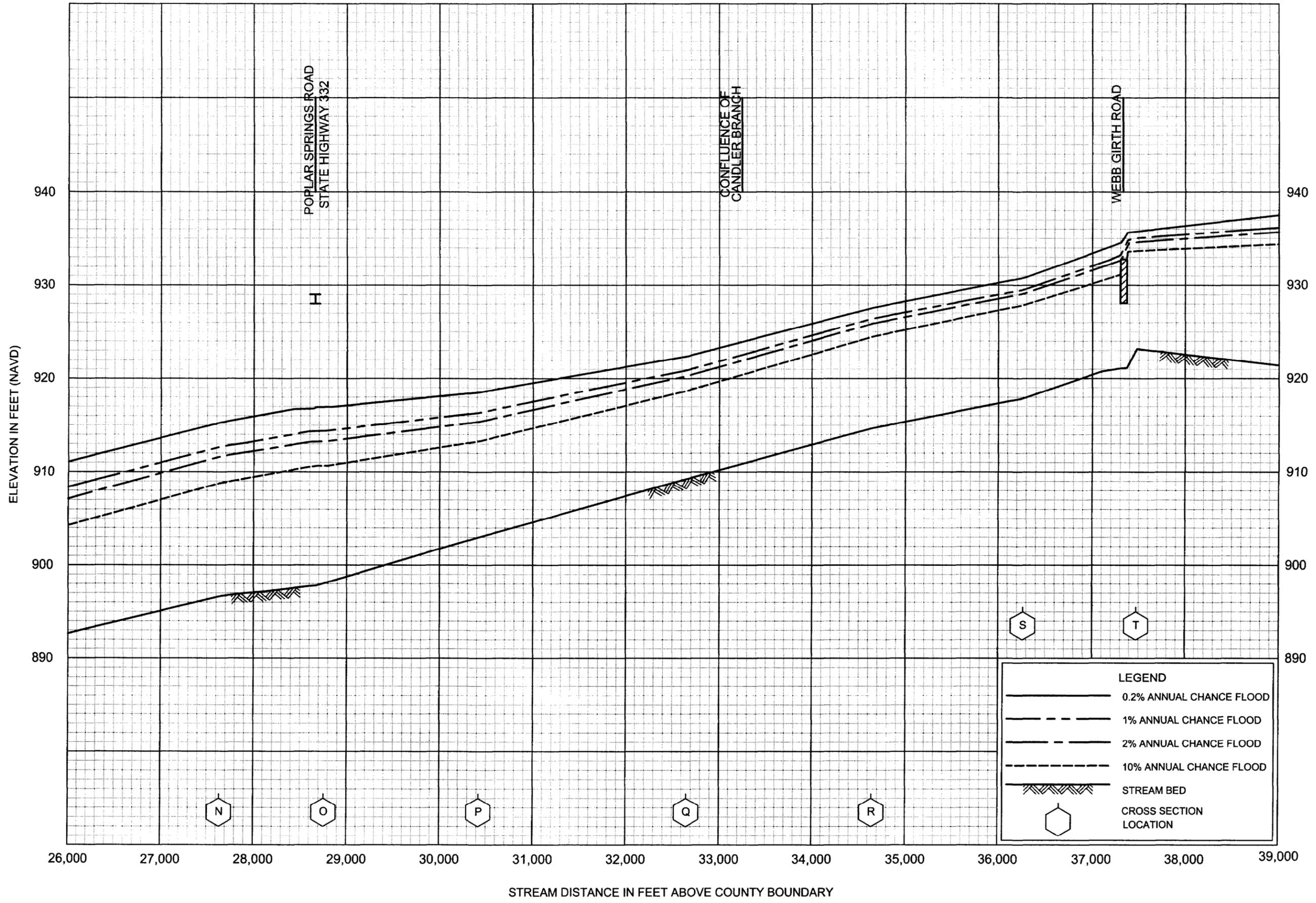


FLOOD PROFILES

WALNUT CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS

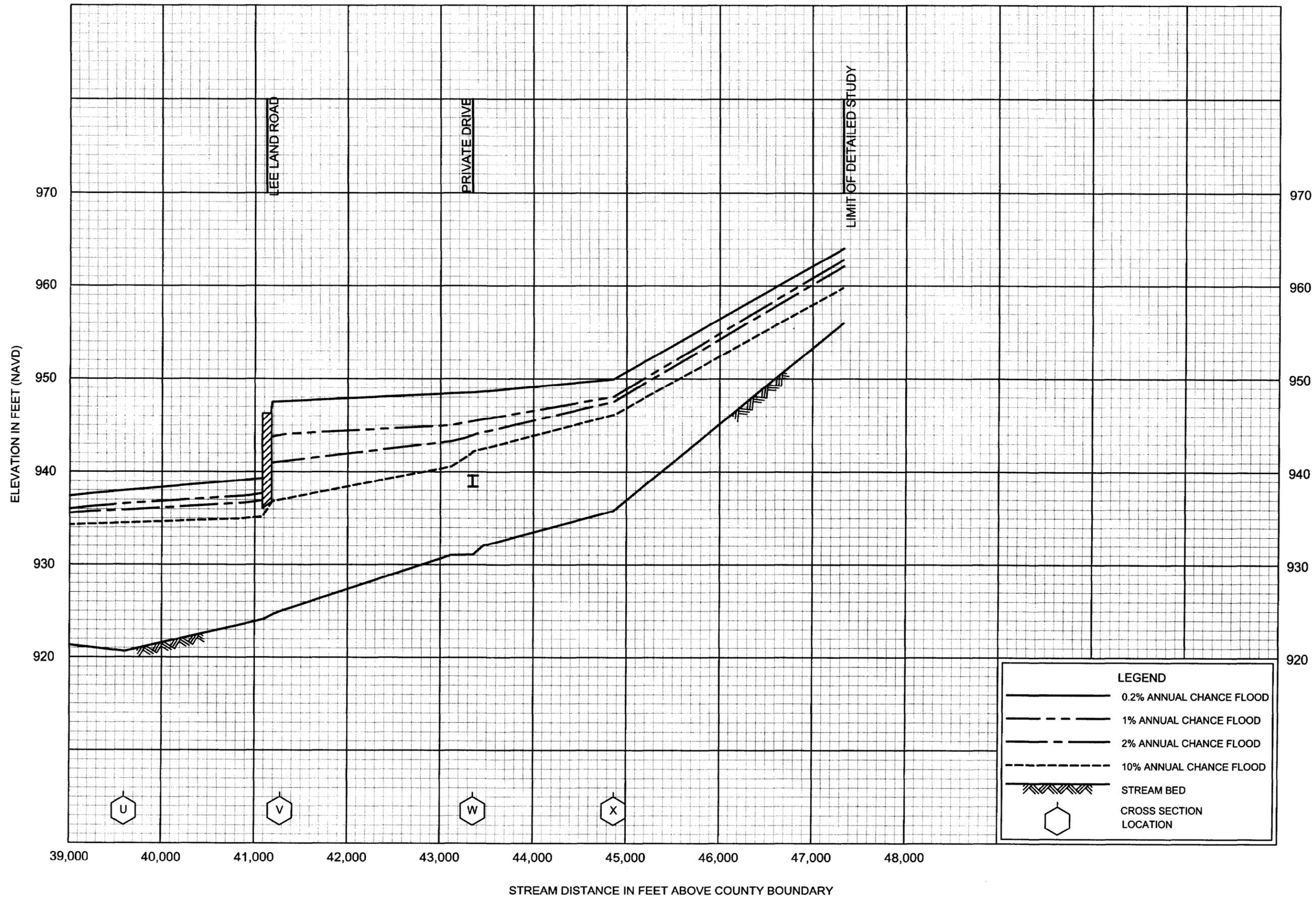


FLOOD PROFILES

WALNUT CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS

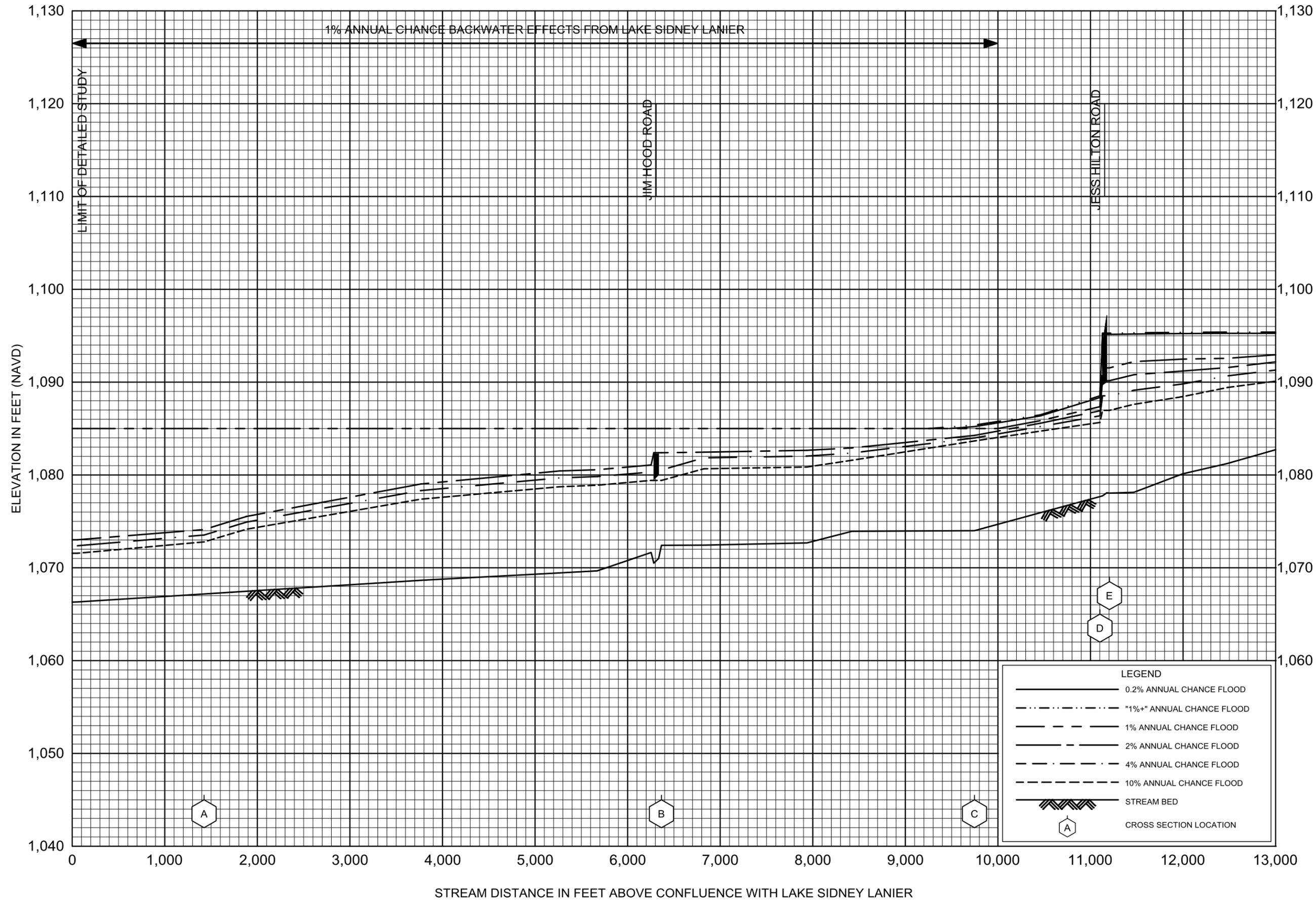


FLOOD PROFILES

WALNUT CREEK

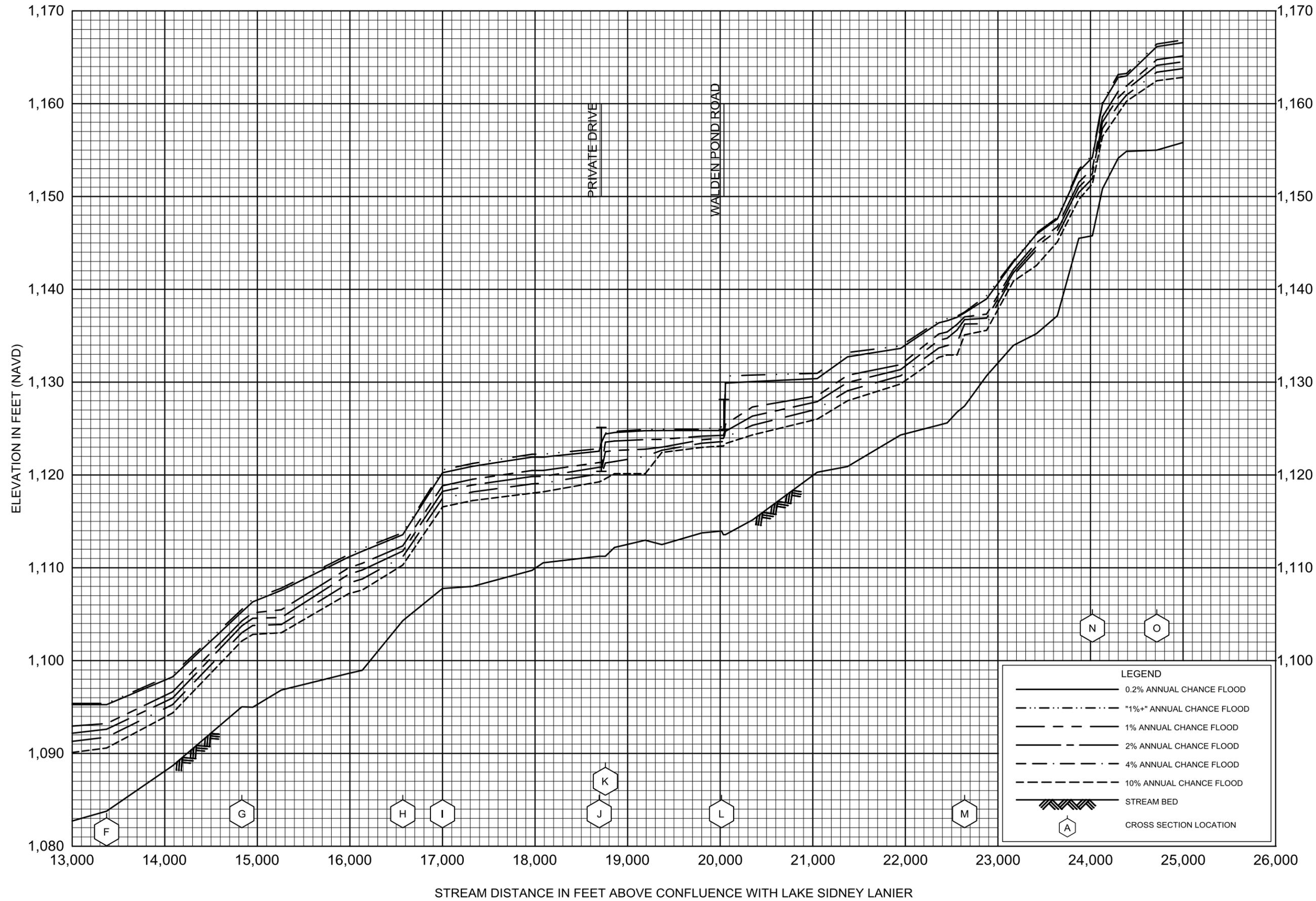
FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS



FLOOD PROFILES  
WEST FORK LITTLE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY  
HALL COUNTY, GA  
AND INCORPORATED AREAS

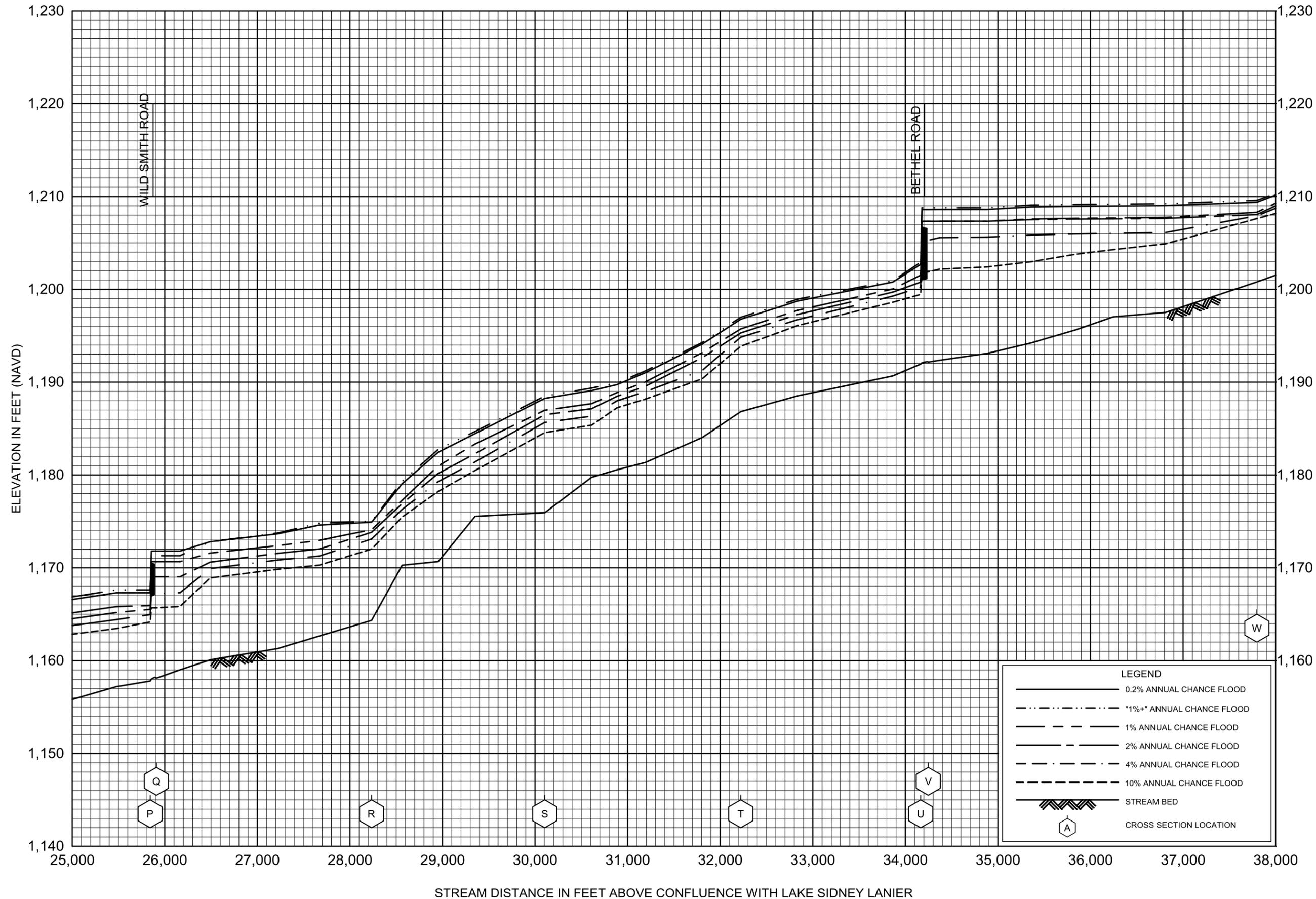


FLOOD PROFILES

WEST FORK LITTLE RIVER

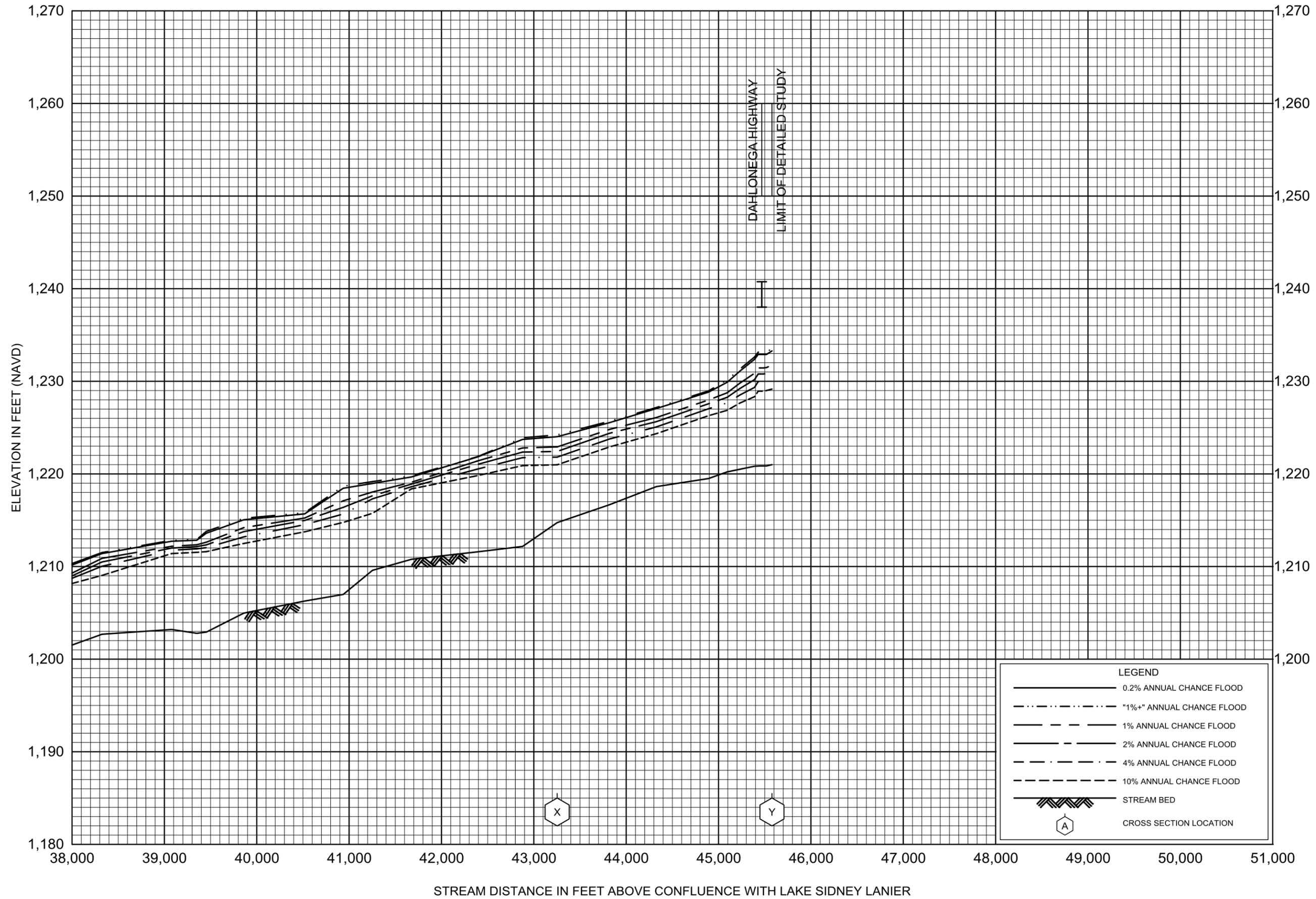
FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS



FLOOD PROFILES  
WEST FORK LITTLE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**HALL COUNTY, GA**  
AND INCORPORATED AREAS



FLOOD PROFILES

WEST FORK LITTLE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

HALL COUNTY, GA  
AND INCORPORATED AREAS