

FLOOD INSURANCE STUDY

FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 1 OF 1



GREENE COUNTY, ARKANSAS

AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
DELAPLAINE, TOWN OF*	050252
GREENE COUNTY, UNINCORPORATED AREAS	050435
LAFE, TOWN OF	050569
MARMADUKE, CITY OF	050346
OAK GROVE HEIGHTS, CITY OF	050510
PARAGOULD, CITY OF	050085
SEDGWICK, TOWN OF	050576

*No Special Flood Hazard Areas Identified



FEMA

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TABLE OF CONTENTS

Volume 1

	<u>Page</u>
SECTION 1.0 – INTRODUCTION	1
1.1 The National Flood Insurance Program	1
1.2 Purpose of this Flood Insurance Study Report	2
1.3 Jurisdictions Included in the Flood Insurance Study Project	2
1.4 Considerations for using this Flood Insurance Study Report	4
SECTION 2.0 – FLOODPLAIN MANAGEMENT APPLICATIONS	14
2.1 Floodplain Boundaries	14
2.2 Floodways	18
2.3 Base Flood Elevations	19
2.4 Non-Encroachment Zones	19
2.5 Coastal Flood Hazard Areas	19
2.5.1 Water Elevations and the Effects of Waves	19
2.5.2 Floodplain Boundaries and BFEs for Coastal Areas	20
2.5.3 Coastal High Hazard Areas	20
2.5.4 Limit of Moderate Wave Action	20
SECTION 3.0 – INSURANCE APPLICATIONS	20
3.1 National Flood Insurance Program Insurance Zones	20
SECTION 4.0 – AREA STUDIED	21
4.1 Basin Description	21
4.2 Principal Flood Problems	21
4.3 Non-Levee Flood Protection Measures	22
4.4 Levees	22
SECTION 5.0 – ENGINEERING METHODS	25
5.1 Hydrologic Analyses	25
5.2 Hydraulic Analyses	28
5.3 Coastal Analyses	31
5.3.1 Total Stillwater Elevations	31
5.3.2 Waves	31
5.3.3 Coastal Erosion	31
5.3.4 Wave Hazard Analyses	31
5.4 Alluvial Fan Analyses	32
SECTION 6.0 – MAPPING METHODS	32
6.1 Vertical and Horizontal Control	32
6.2 Base Map	33
6.3 Floodplain and Floodway Delineation	34
6.4 Coastal Flood Hazard Mapping	39
6.5 FIRM Revisions	39

6.5.1	Letters of Map Amendment	39
6.5.2	Letters of Map Revision Based on Fill	39
6.5.3	Letters of Map Revision	40
6.5.4	Physical Map Revisions	40
6.5.5	Contracted Restudies	40
6.5.6	Community Map History	41
SECTION 7.0 – CONTRACTED STUDIES AND COMMUNITY COORDINATION		42
7.1	Contracted Studies	42
7.2	Community Meetings	43
SECTION 8.0 – ADDITIONAL INFORMATION		45
SECTION 9.0 – BIBLIOGRAPHY AND REFERENCES		46

Figures

	<u>Page</u>
Figure 1: FIRM Index	6
Figure 2: FIRM Notes to Users	7
Figure 3: Map Legend for FIRM	10
Figure 4: Floodway Schematic	18
Figure 5: Wave Runup Transect Schematic	20
Figure 6: Coastal Transect Schematic	20
Figure 7: Frequency Discharge-Drainage Area Curves	27
Figure 8: 1% Annual Chance Total Stillwater Elevations for Coastal Areas	31
Figure 9: Transect Location Map	32

Tables

	<u>Page</u>
Table 1: Listing of NFIP Jurisdictions	3
Table 2: Flooding Sources Included in this FIS Report	16
Table 3: Flood Zone Designations by Community	20
Table 4: Basin Characteristics	21
Table 5: Principal Flood Problems	21
Table 6: Historic Flooding Elevations	22
Table 7: Non-Levee Flood Protection Measures	22
Table 8: Levees	24
Table 9: Summary of Discharges	26
Table 10: Summary of Non-Coastal Stillwater Elevations	28
Table 11: Stream Gage Information used to Determine Discharges	28
Table 12: Summary of Hydrologic and Hydraulic Analyses	30
Table 13: Roughness Coefficients	31
Table 14: Summary of Coastal Analyses	31

Table 15: Tide Gage Analysis Specifics	31
Table 16: Coastal Transect Parameters	31
Table 17: Summary of Alluvial Fan Analyses	32
Table 18: Results of Alluvial Fan Analyses	32
Table 19: Countywide Vertical Datum Conversion	33
Table 20: Stream-Based Vertical Datum Conversion	33
Table 21: Base Map Sources	34
Table 22: Summary of Topographic Elevation Data used in Mapping	35
Table 23: Floodway Data	36
Table 24: Flood Hazard and Non-Encroachment Data for Selected Streams	39
Table 25: Summary of Coastal Transect Mapping Considerations	39
Table 26: Incorporated Letters of Map Change	40
Table 27: Community Map History	42
Table 28: Summary of Contracted Studies Included in this FIS Report	42
Table 29: Community Meetings	44
Table 30: Map Repositories	45
Table 31: Additional Information	46
Table 32: Bibliography and References	47

Volume 1

Exhibits

Flood Profiles	<u>Panel</u>
Eight Mile Creek	01-02 P
Eight Mile Ditch	03 P
Loggy Creek	04 P
Loggy Creek Tributary 1	05 P
Reynolds Creek	06 P
St. Francis River	07 P
Tributary 6	
Tributary No. 1	08 P
Tributary No. 2	09 P
Tributary No. 3	10 P

Published Separately

Flood Insurance Rate Map (FIRM)

FLOOD INSURANCE STUDY REPORT GREENE COUNTY, ARKANSAS

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 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, *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 Greene County, Arkansas.

The jurisdictions that are included in this project area, along with the Community Identification Number (CID) for each community and the United States Geological Survey (USGS) 8-digit Hydrologic Unit Code (HUC-8) sub-basins affecting each, are shown in Table 1. The 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.

Jurisdictions that have no identified SFHAs as of the effective date of this study are indicated in the table. Changed conditions in these communities (such as urbanization or annexation) or the availability of new scientific or technical data about flood hazards could make it necessary to determine SFHAs in these jurisdictions in the future.

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
Delaplaine, Town of ¹	050252	08020302	05055C0175E	
Greene County, Unincorporated Areas	050435	08020203, 08020302, 11010007, 11010013	05055C0025E, 05055C0050E, 05055C0075E, 05055C0100E, 05055C0125E, 05055C0150E, 05055C0175E, 05055C0200E, 05055C0225E, 05055C0250E, 05055C0275E, 05055C0300E, 05055C0325E, 05055C0335F, 05055C0345F, 05055C0350F, 05055C0355F, 05055C0365F, 05055C0375F, 05055C0400E, 05055C0425E, 05055C0450E, 05055C0475E, 05055C0500F, 05055C0525E	
Lafe, Town of	050569	08020302	05055C0200E, 05055C0225E	
Marmaduke, City of	050346	08020203	05055C0225E, 05055C0250E	
Oak Grove Heights, City of	050510	08020203	05055C0200E, 05055C0225E, 05055C0335F, 05055C0355F	
Paragould, City of	050085	08020203	05055C0335F, 05055C0345F, 05055C0350F, 05055C0355F, 05055C0365F, 05055C0475E	
Sedgwick, Town of	050576	08020302	05055C0425E	

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-percent-annual-chance flood elevation is also referred to as the Base Flood Elevation (BFE)); delineations of the 1-percent-annual-chance and 0.2-percent-annual-chance floodplains; and 1-percent-annual-chance floodway. This information is presented on the FIRM and/or in many components of the FIS Report, including Flood Profiles, 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 30, "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 Greene County became effective on June 16, 2009. Refer to Table 27 for information about subsequent revisions to the FIRMs.

Since the status of levees is subject to change at any time, the user should contact the appropriate agency for the latest information regarding levees presented in Table 8 of this FIS Report. For levees owned or operated by the U.S. Army Corps of Engineers (USACE), information may be obtained from the USACE National Levee Database (nld.usace.army.mil). For all other levees, the user is encouraged to contact the appropriate local community.

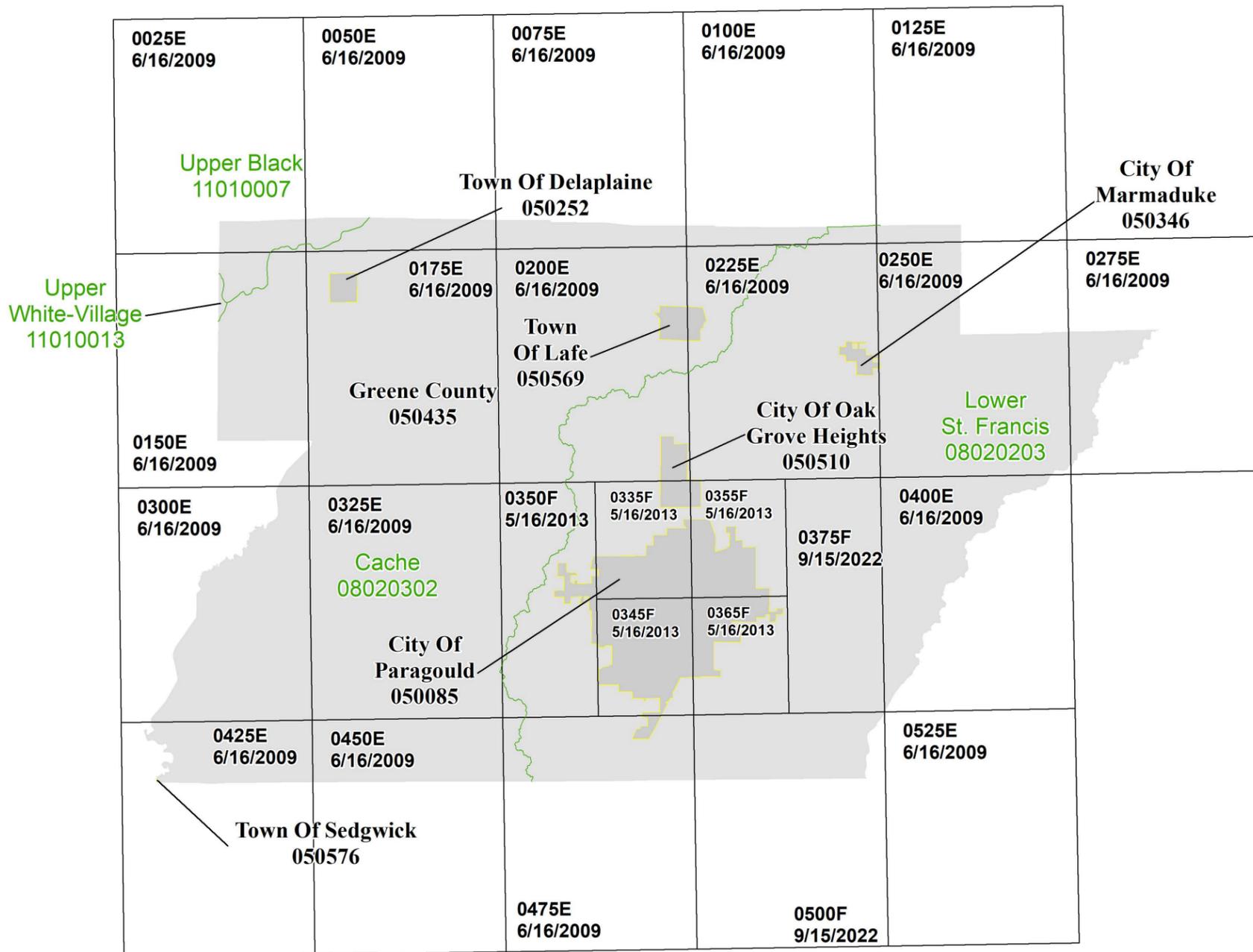
Please also note that FEMA has identified one or more levees in this jurisdiction that have not been demonstrated by the community or levee owner to meet the requirements of 44 CFR 65.10, of the NFIP regulations as it relates to the levee's capacity to provide 1-percent-annual-chance flood protection. As such, temporary actions are being taken until such time as FEMA is able to initiate a new flood risk project to apply new levee analysis and mapping procedures to leveed areas. These temporary actions involve using the flood hazard data shown on the

previous effective FIRM exactly as shown on that prior FIRM and identifying the area with bounding lines and special map notes. If a vertical datum conversion was executed for the county, then the Base Flood Elevations shown on the FIRM will now reflect elevations referenced to the North American Vertical Datum of 1988 (NAVD88). These levees are on FIRM panel(s) 05055C0375F and 05055C0500F, on the Eight Mile Drainage District #5 Levee/Eight Mile Ditch, and are identified on FIRM panels as potential areas of flood hazard data changes based on further review. Please refer to Section 4.4 of this FIS Report for more information.

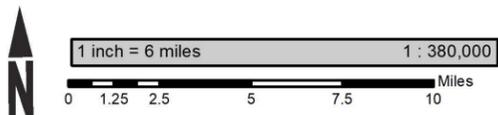
- FEMA has developed a *Guide to Flood Maps* (FEMA 258) and online tutorials to assist users in accessing the information contained on the FIRM. These include how to read panels and step-by-step instructions to obtain specific information. To obtain this guide and other assistance in using the FIRM,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

The FIRM Index in Figure 1 shows the overall FIRM panel layout within Greene 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 USGS HUC-8 codes.

Figure 1: FIRM Index



ATTENTION: The corporate limits shown on this FIRM Index are based on the best information available at the time of publication. As such, they may be more current than those shown on FIRM panels issued before September 15, 2022.



Map Projection:
State Plane Arkansas FIPS 0301 Feet
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

GREENE COUNTY, ARKANSAS and Incorporated Areas

PANELS PRINTED:
0025, 0050, 0075, 0100, 0125, 0150, 0175, 0200, 0225, 0250, 0275, 0300, 0325, 0335, 0345, 0350, 0355, 0365, 0375, 0400, 0425, 0450, 0475, 0500, 0525



FEMA

MAP NUMBER
05055CINDOC
MAP REVISED
September 15, 2022

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

<h2 style="text-align: center;">NOTES TO USERS</h2>
<p>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 Mapping and Insurance eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at 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 Flood Map Service Center website or by calling the FEMA Mapping and Insurance eXchange.</p> <p>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 Flood Map Service Center at the number listed above.</p> <p>For community and countywide map dates, refer to Table 27 in this FIS Report.</p> <p>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.</p>
<p>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.</p> <p>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.</p>
<p>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.</p> <p>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.</p> <p>PROJECTION INFORMATION: The projection used in the preparation of the map was Arkansas State Plane North FIPS 3201 zone. The horizontal datum was the North American Datum of 1983 NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight</p>

Figure 2. FIRM Notes to Users

positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

ELEVATION DATUM: Flood elevations on the FIRM are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov.

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 30 of this FIS Report.

BASE MAP INFORMATION: Base map information shown on the FIRM was provided by Arkansas Highway Transportation Department, United States Geological Survey, National Geodetic Survey, United States Census Bureau 2000 TIGER/Line Files and the Federal Emergency Management Agency at a scale of 1:24,00. Digital orthophoto was provided by the United States Geological Survey dated 2004, at a 1:12,000 scale,. 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 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 Greene County, Arkansas, 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 27 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 Greene County, Arkansas, effective September 15, 2022.

PROVISIONALLY ACCREDITED LEVEE: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent-annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection for areas on this panel. To maintain accreditation, the levee owner or community is required to submit the data and documentation necessary to comply with Section 65.10 of the NFIP regulations by December 31, 2011. If the community or owner does not provide the necessary data and documentation or if the data and documentation provided indicate the levee system does not comply with Section 65.10 requirements, FEMA will revise the flood hazard and risk information for this area to reflect de-accreditation of the levee system.

Figure 2. FIRM Notes to Users

To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit <http://www.fema.gov/national-flood-insurance-program>.

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 Greene County.

Figure 3: Map Legend for FIRM

<p>SPECIAL FLOOD HAZARD AREAS: 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.</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.
	Regulatory Floodway determined in Zone AE.

Figure 3: Map Legend for FIRM

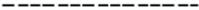
OTHER AREAS OF FLOOD HAZARD	
	Shaded Zone X: Areas of 0.2% annual chance flood hazards and areas of 1% annual chance flood hazards with average depths of less than 1 foot or with drainage areas less than 1 square mile.
	Future Conditions 1% Annual Chance Flood Hazard – Zone X: The flood insurance rate 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.
	Area with Flood Risk due to Levee: Areas where a non-accredited levee, dike, or other flood control structure is shown as providing protection to less than the 1% annual chance flood.
OTHER AREAS	
	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.
FLOOD HAZARD AND OTHER BOUNDARY LINES	
 (ortho) (vector)	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
GENERAL STRUCTURES	
 <i>Aqueduct Channel Culvert Storm Sewer</i>	Channel, Culvert, Aqueduct, or Storm Sewer
 <i>Dam Jetty Weir</i>	Dam, Jetty, Weir
	Levee, Dike, or Floodwall
 <i>Bridge</i>	Bridge

Figure 3: Map Legend for FIRM

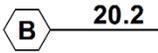
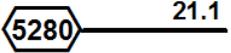
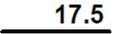
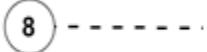
REFERENCE MARKERS	
	River mile Markers
CROSS SECTION & TRANSECT INFORMATION	
	Lettered Cross Section with Regulatory Water Surface Elevation (BFE)
	Numbered Cross Section with Regulatory Water Surface Elevation (BFE)
	Unlettered Cross Section with Regulatory Water Surface Elevation (BFE)
	Coastal Transect
	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
ZONE AE (EL 16)	Static Base Flood Elevation value (shown under zone label)
ZONE AO (DEPTH 2)	Zone designation with Depth
ZONE AO (DEPTH 2) (VEL 15 FPS)	Zone designation with Depth and Velocity
BASE MAP FEATURES	
	River, Stream or Other Hydrographic Feature
	Interstate Highway
	U.S. Highway
	State Highway
	County Highway
MAPLE LANE 	Street, Road, Avenue Name, or Private Drive if shown on Flood Profile
 RAILROAD	Railroad

Figure 3: Map Legend for FIRM

—————	Horizontal Reference Grid Line
—	Horizontal Reference Grid Ticks
+	Secondary Grid Crosshairs
Land Grant	Name of Land Grant
7	Section Number
R. 43 W. T. 22 N.	Range, Township Number
⁴²76^{000m}E	Horizontal Reference Grid Coordinates (UTM)
365000 FT	Horizontal Reference Grid Coordinates (State Plane)
80° 16' 52.5"	Corner Coordinates (Latitude, Longitude)

SECTION 2.0 – FLOODPLAIN MANAGEMENT APPLICATIONS

2.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent-annual-chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent-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 Greene 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-percent-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 22), study methodologies employed (Section 5.0), and flood risk, certain flooding sources may be mapped to show both the 1-percent and 0.2-percent-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-percent-annual-chance floodplain boundary on the FIRM, without published water surface elevations. In cases where the 1-percent and 0.2-percent-annual-chance floodplain boundaries are close together, only the 1-percent-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 Greene County, 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 12. 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-percent-annual-chance floodplain corresponds to the SFHAs. The 0.2-percent-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.

Within this jurisdiction, there are one or more levees that have not been demonstrated by the communities or levee owners to meet the requirements of the Code of Federal Regulations, Title 44, Section 65.10 (44 CFR 65.10) as it relates to the levee's capacity to provide 1-percent-annual-chance flood protection. As such, the floodplain boundaries in this area are subject to change. Please refer to Section 4.4 of this FIS Report for more information on how this may affect the floodplain boundaries shown on this FIRM.

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 ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Eight Mile Creek	Paragould, City of	Confluence with Eight Mile Ditch	Approximately 360 feet upstream from Spring Grove Road	08020203	7.1	N/A	Y	AE, AO	2011
Eight Mile Ditch	Greene County, Unincorporated Areas	Greene County Boundary (with Craighead County)	Approximately 2,500 feet downstream from Greene 919 Road	08020203	2.9	N/A	N	AE	2020
Eight Mile Ditch	Greene County, Unincorporated Areas	Approximately 2,500 feet downstream from Greene 919 Road	Approximately 1,200 feet downstream from County Road 135	08020203	0.8	N/A	N	A	2020
Loggy Creek	Paragould, City of	Confluence with Eight Mile Creek	Approximately 5,800 feet upstream of Reynolds Road	08020203	2.7	N/A	Y	AE	2007
Loggy Creek Tributary 1	Paragould, City of	Confluence with Loggy Creek	Approximately 600 feet upstream of Devon Road	08020203	0.2	N/A	N	AE	2011
Reynolds Creek	Paragould, City of	Confluence with Loggy Creek	Reynolds Park Road	08020203	0.4	N/A	Y	AE	2007
St. Francis River Tributary 6	Greene County, Unincorporated Areas	Greene County Boundary (with Craighead County)	Approximately 290 feet downstream from Greene 919 Road	08020203	1.8	N/A	N	AE	2020
Tributary No. 1	Paragould, City of	Confluence with Eight Mile Creek	Honeysuckle Road	08020203	1.6	N/A	N	AE	2007

Table 2: Flooding Sources Included in this FIS Report [Continued]

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Tributary No. 2	Paragould, City of	Confluence with Eight Mile Creek	Approximately 30 feet upstream of Maxwell Street	08020203	0.9	N/A	N	AE	2007
Tributary No. 3	Paragould, City of	Confluence with Eight Mile Creek	Approximately 1.2 miles upstream of Bogil Road	08020203	1.5	N/A	N	AE	2007
Zone A areas	Greene County, Unincorporated Areas	Various	Various	08020302, 08020203, 11010007, 11010013	672.3	N/A	N	A	2007

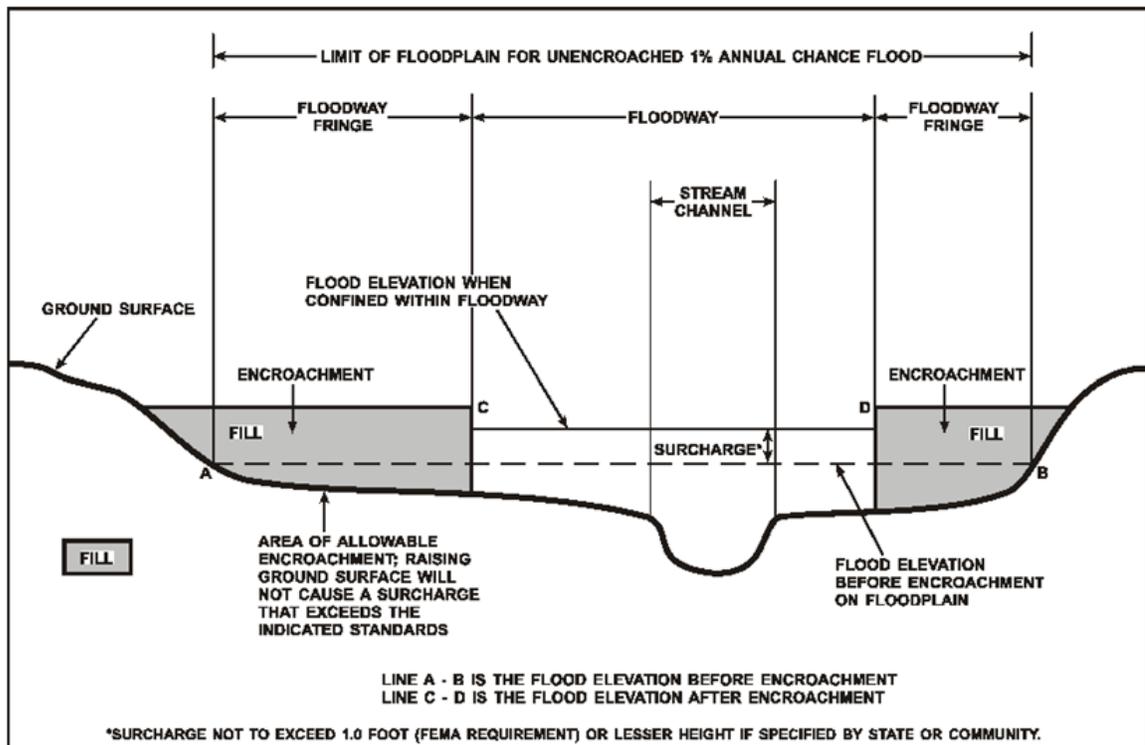
2.2 Floodways

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-percent-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-percent-annual-chance flood. The floodway fringe is the area between the floodway and the 1-percent-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-percent-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 23, "Floodway Data."

All floodways that were developed for this Flood Risk Project are shown on the FIRM using the symbology described in Figure 3. In cases where the floodway and 1-percent-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 BFE is the elevation of the 1-percent-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.

BFEs are primarily intended for flood insurance rating purposes. 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. 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. For example, the user may use the FIRM to determine the stream station of a location of interest and then use the profile to determine the 1-percent annual chance elevation at that location. Because only selected cross sections may be shown on the FIRM for riverine areas, the profile should be used to obtain the flood elevation between mapped cross sections. Additionally, for riverine areas, whole-foot elevations shown on the FIRM may not exactly reflect the elevations derived from the hydraulic analyses; therefore, elevations obtained from the profile may more accurately reflect the results of the hydraulic analysis.

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 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-percent-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-percent-annual-chance floodplain boundary corresponds to the boundary of areas of additional flood hazards.

Table 3 lists the flood insurance zones in Greene County.

Table 3: Flood Zone Designations by Community

Community	Flood Zone(s)
Delaplaine, Town of	*
Greene County, Unincorporated Areas	A, AE, AO,X
Lafe, Town of	A
Marmaduke, City of	A
Oak Grove Heights, City of	A
Paragould, City of	A, AE, AO,X
Sedgwick, Town of	A

*No Special Flood Hazard Areas Identified

SECTION 4.0 – AREA STUDIED

4.1 Basin Description

Table 4 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 4: Basin Characteristics

HUC-8 Sub-Basin Name	HUC-8 Sub-Basin Number	Primary Flooding Source	Description of Affected Area	Drainage Area (square miles)
Cache	8020302	Cache River	Cache watershed is the largest watersheds in the county. It covers the entire eastern half of the county. It lies within the White River Basin in East to Northeast Arkansas crossing into Missouri	286.0
Lower St. Francis	8020203	Lower St. Francis River	Lower St. Francis watershed one of the largest watersheds in the county. It covers the western half of Greene County. It lies within the St. Francis River Basin in Northeast Arkansas crossing into Missouri	285.3
Upper Black	11010007	Upper Black River	Upper Black watershed lies second smallest watershed in the county and is located in northeastern portion of Greene County.	7.8
Upper White-Village	11010013	Upper White-Village River	Upper White-Village watershed is the smallest watershed in the county and is located in northeastern portion of Greene County.	0.3

4.2 Principal Flood Problems

Table 5 contains a description of the principal flood problems that have been noted for Greene County by flooding source.

Table 5: Principal Flood Problems

Flooding Source	Description of Flood Problems
Eight Mile Creek	The City of Paragould has a history of frequent damaging floods. In the past, floods have cost property owners millions of dollars in flood damages.

Table 6 contains information about historic flood elevations in the communities within Greene County.

Table 6: Historic Flooding Elevations

Flooding Source	Location	Historic Peak (Feet NAVD88)	Event Date	Approximate Recurrence Interval (years)	Source of Data
Eight Mile Creek	Paragould, City of	N/A	6/18/1945	N/A	*
Eight Mile Creek	Paragould, City of	N/A	2/18/1956	N/A	*
Eight Mile Creek	Paragould, City of	N/A	8/14/1957	N/A	*
Eight Mile Creek	Paragould, City of	N/A	9/17/1962	N/A	*
Eight Mile Creek	Paragould, City of	N/A	1/30/1969	N/A	*
Eight Mile Creek	Paragould, City of	N/A	4/19/1973	N/A	Paragould Daily Press, US Weather Service, Radio KHIG
Eight Mile Creek	Paragould, City of	N/A	12/17/2001	N/A	NOAA-NCDC

*Unknown

4.3 Non-Levee Flood Protection Measures

Table 7 contains information about non-levee flood protection measures within Greene County such as dams, jetties, and or dikes. Levees are addressed in Section 4.4 of this FIS Report.

Table 7: Non-Levee Flood Protection Measures

Flooding Source	Structure Name	Type of Measure	Location	Description of Measure
Reynolds Creek	Reynolds Lake	Reservoir	Above Reynolds Creek	Reservoir provides some flood storage

4.4 Levees

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

Levee systems that are determined to reduce the risk from the 1-percent-annual-chance flood are accredited by FEMA. FEMA can also grant provisional accreditation to a levee system that was previously accredited on an effective FIRM and for which FEMA is awaiting data and/or documentation to demonstrate compliance with Section 65.10. These levee systems are referred to as Provisionally Accredited Levees, or PALs. Provisional accreditation provides communities and levee owners with a specified timeframe to obtain the necessary data to confirm the levee's certification status. Accredited levee systems and PALs are shown on the FIRM using the symbology shown in Figure 3 and in Table 8. If the required information for a PAL is not submitted within the required timeframe, or if information indicates that a levee system no longer meets Section 65.10, FEMA will de-accredit the levee system and issue an effective FIRM showing the levee-impacted area as a SFHA.

FEMA coordinates its programs with USACE, who may inspect, maintain, and repair levee systems. The USACE has authority under Public Law 84-99 to supplement local efforts to repair flood control projects that are damaged by floods. Like FEMA, the USACE provides a program to allow public sponsors or operators to address levee system maintenance deficiencies. Failure to do so within the required timeframe results in the levee system being placed in an inactive status in the USACE Rehabilitation and Inspection Program. Levee systems in an inactive status are ineligible for rehabilitation assistance under Public Law 84-99.

FEMA coordinated with the USACE, the local communities, and other organizations to compile a list of levees that exist within Greene County. Table 8, "Levees," lists all accredited levees, PALs, and de-accredited levees shown on the FIRM for this FIS Report. Other categories of levees may also be included in the table. The Levee ID shown in this table may not match numbers based on other identification systems that were listed in previous FIS Reports. Levees identified as PALs in the table are labeled on the FIRM to indicate their provisional status.

Please note that the information presented in Table 8 is subject to change at any time. For that reason, the latest information regarding any USACE structure presented in the table should be obtained by contacting USACE and accessing the USACE National Levee Database. For levees owned and/or operated by someone other than the USACE, contact the local community shown in Table 30.

Please note that FEMA has identified levees in this jurisdiction that have not been demonstrated by the community or levee owner to meet the requirements of 44 CFR 65.10 of the NFIP regulations as it relates to the levee's capacity to provide 1-percent-annual-chance flood protection. As such, the existing flood hazard analysis in the affected areas has been carried forward from the previously-printed effective FIRM panel(s) and the area has been clearly identified on the FIRM panel with notes and bounding lines. This has been done to inform users that a temporary mapping action has been put in place until such time as FEMA is able to initiate a new flood risk project to apply new flood hazard mapping procedures for leveed areas. These levees occur on FIRM panel(s) 05055C0250E, 05055C0400E on the Big Slough Ditch Levee/ Big Slough Ditch, on panels 05055C0250E, 05055C0275E, 05055C0400E on the Gate Ditch Levee/ Gate Ditch, and on Panels 05055C0375F and 05055C0500F on the Eight Mile Drainage District #5 Levee/Eight Mile Ditch, and are identified on the FIRM panel(s) as potential areas of flood hazard data changes based on further review. Levees and their accreditation status are listed in Table 8 of this FIS Report.

Table 8: Levees

Community	Flooding Source	Levee Location	Levee Owner	USACE Levee	Levee ID	Covered Under PL84-99 Program?	FIRM Panel(s)
Greene County, Unincorporated Areas	Big Slough Ditch	Right Descending	*	No	05055000038	*	05055C0250E, 05055C0400E
Greene County, Unincorporated Areas	Eight Mile Ditch	Right Descending	*	No	05055000020	*	05055C0500F
Greene County, Unincorporated Areas	Gate Ditch	Right Descending	*	No	05055000051	*	05055C0250E, 05055C0275E, 05055C0400E
Greene County, Unincorporated Areas	Lake Ditch	Right Descending	*	No	05055000050	*	05055C0375F 05055C0500F

*Unknown

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-percent-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 12. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

A summary of the discharges is provided in Table 9. Stream gage information is provided in Table 11.

Table 9: 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	0.2% Annual Chance
Eight Mile Creek	At confluence of Lake Ditch Creek (Craighead County)	169.20	13,858	*	20,021	22,774	29,481
Eight Mile Creek	Approximately 170 feet upstream of Village Creek Ditch	53.21	9,517	*	12,215	13,547	16,730
Eight Mile Creek	Approximately 40 feet downstream of Highway 135	26.80	7,691	*	10,011	11,051	13,745
Eight Mile Creek	Approximately 40 feet downstream of Highway 49	16.30	5,438	*	7,088	7,807	9,264
Eight Mile Creek	Approximately 358 feet downstream of Carroll Boulevard	12.75	5,574	*	6,562	7,214	8,769
Eight Mile Creek	Approximately 545 feet upstream of Rocking Chair Road	8.80	3,523	*	4,690	5,206	6,602
Eight Mile Creek	Approximately 300 feet downstream from Spring Grove Road	5.10	2,194	*	2,964	3,322	4,232
Loggy Creek	At cross section A	10.30	3,800	*	4,940	5,350	6,400
Loggy Creek	At Reynolds Road	7.90	3,400	*	4,440	4,800	5,730
Loggy Creek	At cross section E	2.30	2,800	*	3,650	2,950	4,720
Loggy Creek Tributary 1	Approximately 600 feet upstream of Devon Road	0.41	*	*	*	611	*

Table 9: Summary of Discharges [Continued]

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	0.2% Annual Chance
Loggy Creek Tributary 2	Approximately 470 feet upstream of Devon Road	0.54	*	*	*	740	*
Loggy Creek Tributary 3	Approximately 350 feet upstream of Ranch Road	0.59	*	*	*	790	*
Loggy Creek Tributary 4	Approximately 275 feet downstream of Ranch Road	0.92	*	*	*	1,070	*
Loggy Creek Tributary 5	Approximately 1300 feet downstream of Country Club Road	1.08	*	*	*	1,200	*
Loggy Creek Tributary 6	At Mouth	1.55	*	*	*	1,540	*
Reynolds Creek	At confluence of Loggy Creek	1.30	760	*	990	1,090	1,290
Tributary No. 1	At confluence with Eight Mile Creek	0.40	*	*	*	611	*
Tributary No. 2	At confluence with Eight Mile Creek	0.20	*	*	*	347	*
Tributary No. 3	At confluence with Eight Mile Creek	0.60	*	*	*	495	*

*Not calculated for this Flood Risk Project

Figure 7: Frequency Discharge-Drainage Area Curves

[Not applicable to this Flood Risk Project]

Table 10: Summary of Non-Coastal Stillwater Elevations

[Not applicable to this Flood Risk Project]

Table 11: 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
Sugar Creek Tributary	07077340	USGS	Sugar Creek Tributary near Walcott	*	03/04/1963	11/27/1985
Lick Creek	030534	NWS Cooperative Rainfall Station	In Beech Grove	*	08/01/1946	05/14/1975
Various	035562	NWS Cooperative Rainfall Station	In City of Paragould	*	08/01/1946	Present
Various	035563	NWS Cooperative Rainfall Station	In City of Paragould	*	08/01/1946	Present

*Unknown

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 in Table 23, "Floodway Data."

A summary of the methods used in hydraulic analyses performed for this project is provided in Table 12. Roughness coefficients are provided in Table 13. 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 12: Summary of Hydrologic and Hydraulic Analyses

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Eight Mile Creek	Confluence with Eight Mile Ditch	Approximately 360 feet upstream from Spring Grove Road	HEC-1 4.0.1 and up 1 (May 1991)	HEC-RAS 3.1.1 and up	3/1/2011	AE w/ Floodway, AO	
Eight Mile Ditch	Greene County Boundary (with Craighead County)	Approximately 2,500 feet downstream from Greene 919 Road	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 5.0 and up	4/30/2020	AE	
Eight Mile Ditch	Approximately 2,500 feet downstream from Greene 919 Road	Approximately 1,200 feet downstream from County Road 135	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 5.0 and up	4/30/2020	A	
Loggy Creek	Confluence with Eight Mile Creek	Approximately 5,800 feet upstream of Reynolds Road	HEC-1 4.0.1 and up 1 (May 1991)	HEC-2 4.6.2 (May 1991)	8/1/2007	AE w/ Floodway	
Loggy Creek Tributary 1	Confluence with Loggy Creek	Approximately 600 feet upstream of Devon Road	Regression Equations	HEC-RAS 3.1.1 and up	3/1/2011	AE	
Reynolds Creek	Confluence with Loggy Creek	Reynolds Park Road	HEC-1 4.0.1 and up 1 (May 1991)	HEC-2 4.6.2 (May 1991)	8/1/2007	AE w/ Floodway	
St. Francis River Tributary 6	Greene County Boundary (with Craighead County)	Approximately 290 feet downstream from Greene 919 Road	HEC-1 4.0.1 and up 1 (May 1991)	HEC-2 4.6.2 (May 1991)	4/30/2020	AE	
Tributary No. 1	Confluence with Eight Mile Creek	Honeysuckle Road	HEC-1 4.0.1 and up 1 (May 1991)	HEC-2 4.6.2 (May 1991)	8/1/2007	AE	
Tributary No. 2	Confluence with Eight Mile Creek	Approximately 30 feet upstream of Maxwell Street	HEC-1 4.0.1 and up 1 (May 1991)	HEC-2 4.6.2 (May 1991)	8/1/2007	AE	
Tributary No. 3	Confluence with Eight Mile Creek	Approximately 1.2 miles upstream of Bogil Road	HEC-1 4.0.1 and up 1 (May 1991)	HEC-2 4.6.2 (May 1991)	8/1/2007	AE	
Zone A areas	Various	Various	HEC-1 4.0.1 and up 1 (May 1991)	HEC-2 4.6.2 (May 1991)	8/1/2007	A	

Table 13: Roughness Coefficients

Flooding Source	Channel "n"	Overbank "n"
Eight Mile Creek	0.015 - 0.060	0.090 - 0.120*
Eight Mile Ditch	0.035	0.035
Loggy Creek	0.050	0.090
Loggy Creek Tributary 1	0.060 - 0.075	0.060 - 0.130
Reynolds Creek	0.050	0.090
St. Francis River Tributary 6	0.035 - 0.090	0.035 - 0.090
Tributary No. 1	0.020 - 0.070	0.030 - 0.100
Tributary No. 2	0.020 - 0.070	0.030 - 0.100
Tributary No. 3	0.020 - 0.070	0.030 - 0.100

* n-values of 500 used in lieu of ineffective.

5.3 Coastal Analyses

This section is not applicable to this Flood Risk Project.

Table 14: 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 15: 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 16: 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 17: Summary of Alluvial Fan Analyses

[Not applicable to this Flood Risk Project]

Table 18: 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 NAVD88. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between NGVD29 and NAVD88 or other datum conversion, visit the National Geodetic Survey website at www.ngs.noaa.gov.

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 visit the NGS website at www.ngs.noaa.gov.

The datum conversion locations and values that were calculated for Greene County are provided in Table 19.

Table 19: Countywide Vertical Datum Conversion

Quadrangle Name	Quadrangle Corner	Latitude	Longitude	Conversion from NGVD29 to NAVD88 (feet)
Greene County, Unincorporated Areas	*	*	*	+0.08
Average Conversion from NGVD29 to NAVD88 = +0.08 feet				

*Data not available

Table 20: Stream-Based 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/media-library/resources-documents/collections/361.

Base map information shown on the FIRM was derived from the sources described in Table 21.

Table 21: Base Map Sources

Data Type	Data Provider	Data Date	Data Scale	Data Description
Base Map Files, Political and Transportation Features	Federal Emergency Management Agency	2013	24,000	Spatial and attribute information for political boundaries, transportation features, effective FIRM features, and rivers for Greene County, Arkansas and Incorporated Areas.
Hydro Features	RAMPP	2020	24,000	Spatial and attribute information for levees, rivers, lakes, streams.
National Hydrography Dataset (NHD) - High-resolution	United States Geological Survey	2008	100,000	Spatial and attribute information for Greene County hydrography boundaries.
Digital Orthophoto	United States Geological Survey	2004	12,000	Digital Ortho imagery for FIRM base map

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 22.

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

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 23, "Floodway Data."

Table 22: Summary of Topographic Elevation Data used in Mapping

Community	Flooding Source	Source for Topographic Elevation Data			
		Description	Vertical Accuracy	Horizontal Accuracy	Citation
Greene County, Unincorporated Areas	Eight Mile Ditch; St. Francis River Tributary 6	Light Detection and Ranging data (LiDAR)	9.25 cm RMSEz	18.13 cm	USGS 2008B
Greene County, Unincorporated Areas	All with Greene County	National Elevation Dataset 10 meter DEM and survey	*	*	USGS 1999

*Data not available

BFEs shown at cross sections on the FIRM represent the 1-percent-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 areas of ponding, and other areas with static base flood elevations.

Table 23: Floodway Data

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	11.18	1,900	3,731	3.0	262.6	262.6	263.2	0.6
B	12.02	1,398	2,150	5.1	267.2	267.2	267.4	0.2
C	12.57	161	1,632	6.8	270.4	270.4	271.3	0.9
D	13.59	160	1,530	7.2	277.4	277.4	277.5	0.1
E	15.10	124	868	8.3	288.9	288.9	288.9	0.0
F	16.88	90	710	9.3	304.5	304.5	304.5	0.0
G	18.18	84	757	6.6	320.7	320.7	321.4	0.7

¹ Miles above confluence with St. Francis River

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	FLOODWAY DATA
	GREENE COUNTY, ARKANSAS	FLOODING SOURCE: EIGHT MILE CREEK
	AND INCORPORATED AREAS	

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1.025	980	3,647	1.5	288.5	288.5	289.5	1.0
B	1.525	490	2,309	2.1	292.8	292.8	293.5	0.7
C	1.98	910	2,970	1.3	296.9	296.9	297.9	1.0
D	2.33	590	2,661	1.5	300.9	300.9	301.8	0.9
E	2.675	570	1,921	2.1	304.8	304.8	305.8	1.0

¹ Miles above Eight Mile Creek

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY
GREENE COUNTY, ARKANSAS
 AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: LOGGY CREEK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0.21	335	1,606	0.7	296.0	296.0	297.0	1.0
B	0.34	500	2,455	0.4	296.1	296.1	297.1	1.0

¹ Miles above Loggy Creek

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY
GREENE COUNTY, ARKANSAS
 AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: REYNOLDS CREEK

Table 24: 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 25: 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 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 30, “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/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.

For more information about how to apply for a LOMA, call the FEMA Mapping and Insurance 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/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 Mapping and Insurance 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.

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/media-library/assets/documents/1343 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.

Table 26: Incorporated Letters of Map Change

[Not applicable to this Flood Risk Project]

6.5.4 Physical Map Revisions

A Physical Map Revisions (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 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 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 Greene 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 27, "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 27 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 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.
- *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 Greene County FIRMs in countywide format was 06/16/2009.

Table 27: Community Map History

Community Name	Initial Identification Date	Initial FHBM Effective Date	FHBM Revision Date(s)	Initial FIRM Effective Date	FIRM Revision Date(s)
Delaplaine, Town of ¹	6/16/2009	N/A	N/A	6/16/2009	N/A
Greene County, Unincorporated Areas	12/13/1977	12/13/1977	N/A	6/16/2009	9/15/2022 5/16/2013
Lafe, Town of	7/10/1979	7/10/1979	N/A	6/16/2009	N/A
Marmaduke, City of	4/11/1975	4/11/1975	N/A	6/1/1987	6/16/2009
Oak Grove Heights, City of ²	12/13/1977	12/13/1977	N/A	6/16/2009	N/A
Paragould, City of	9/7/1973	9/7/1973	8/22/1975	6/15/1978	5/16/2013 6/16/2009 5/4/1992
Sedgewick, Town of ²	12/13/1977	12/13/1977	N/A	6/16/2009	N/A

¹ No Special Flood Hazard Areas Identified

² Dates for this community were taken from Greene County, Unincorporated Areas

SECTION 7.0 – CONTRACTED STUDIES AND COMMUNITY COORDINATION

7.1 Contracted Studies

Table 28 provides a summary of the contracted studies, by flooding source, that are included in this FIS Report.

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Eight Mile Creek (USACE, Memphis District Study)	5/16/2013	RAMPP	HSFEHQ-09-D-0369	March 2011	Greene County, Unincorporated Areas; Paragould, City of (FEMA, 2009)
Eight Mile Ditch	9/15/2022	RAMPP	HSFE60-15-D-0003	4/30/2020	Greene County, Unincorporated Areas
Loggy Creek	6/16/2009	CF3R JV	EMT2002-CO-0049	August 2007	Paragould, City of (FEMA, 2009)

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Loggy Creek Tributary 1	5/16/2013	RAMPP	HSFEHQ-09-D-0369	March 2011	Greene County, Unincorporated Areas; Paragould, City of (FEMA, 2009)
Reynolds Creek	6/16/2009	CF3R JV	EMT2002-CO-0049	August 2007	Paragould, City of (FEMA, 2009)
St. Francis River Tributary 6	9/15/2022	RAMPP	HSFE60-15-D-0003	4/30/2020	Greene County, Unincorporated Areas
Tributary No.1	6/16/2009	CF3R JV	EMT2002-CO-0049	August 2007	Paragould, City of (FEMA, 2009)
Tributary No.2	6/16/2009	CF3R JV	EMT2002-CO-0049	August 2007	Paragould, City of (FEMA, 2009)
Tributary No.3	6/16/2009	CF3R JV	EMT2002-CO-0049	August 2007	Paragould, City of (FEMA, 2009)
Zone A Areas	6/16/2009	CF3R JV	EMT2002-CO-0049	August 2007	Greene County, Unincorporated Areas

7.2 Community Meetings

The dates of the community meetings held for this Flood Risk Project and previous Flood Risk Projects are shown in Table 29. 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 29: Community Meetings

Community	FIS Report Dated	Date of Meeting	Meeting Type	Attended By
Delaplaine, Town of	5/13/2013	10/30/2009	CCO	Local officials, USACE, FEMA, RAMPP
		11/29/2011	Final CCO	Community, County, FEMA, study contractor
Greene County, Unincorporated Areas	9/15/2022	6/16/2016	Flood Risk Review	Local officials, USACE, RAMPP, and FEMA
		7/30/2020	Final CCO	County, FEMA, study contractor
Lafe, Town of	5/13/2013	10/30/2009	CCO	Local officials, USACE, FEMA, RAMPP
		11/29/2011	Final CCO	Community, County, FEMA, study contractor
Marmaduke, City of	5/13/2013	10/30/2009	CCO	Local officials, USACE, FEMA, RAMPP
		11/29/2011	Final CCO	Community, County, FEMA, study contractor
Oak Grove Heights, City of	5/13/2013	10/30/2009	CCO	Local officials, USACE, FEMA, RAMPP
		11/29/2011	Final CCO	Community, County, FEMA, study contractor
Paragould, City of	5/13/2013	10/30/2009	CCO	Local officials, USACE, FEMA, RAMPP
		11/29/2011	Final CCO	Community, County, FEMA, study contractor
Sedgwick, Town of	5/13/2013	10/30/2009	CCO	Local officials, USACE, FEMA, RAMPP
		11/29/2011	Final CCO	Community, County, FEMA, study contractor

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 www.fema.gov.

The additional data that was used for this project includes the FIS Report and FIRM that were previously prepared for Greene County and Incorporated Areas, (FEMA 2009).

Table 30 is a list of the locations where FIRMs for Greene 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 30: Map Repositories

Community	Address	City	State	Zip Code
Delaplaine, Town of ¹	Office of Emergency Management, 320 West Court Street, Suite 107	Paragould	AR	72450
Greene County, Unincorporated Areas	Office of Emergency Management, 320 West Court Street, Suite 107	Paragould	AR	72450
Lafe, Town of	Office of Emergency Management, 320 West Court Street, Suite 107	Paragould	AR	72450
Marmaduke, City of	Office of Emergency Management, 320 West Court Street, Suite 107	Paragould	AR	72450
Oak Grove Heights, City of	City Hall, 85 Kimberly Street	Paragould	AR	72450
Paragould, City of	City Hall, 301 W. Court Sreet	Paragould	AR	72450
Sedgwick, Town of	Town of Sedgwick, 3409 Highway 228 West	Sedgwick	AR	72465

¹ No Special Flood Hazard Areas Identified

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 31.

Table 31 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 31: Additional Information

FEMA and the NFIP	
FEMA and FEMA Engineering Library website	www.fema.gov/national-flood-insurance-program-flood-hazard-mapping/engineering-library
NFIP website	www.fema.gov/national-flood-insurance-program
NFHL Dataset	msc.fema.gov
FEMA Region 6	Federal Regional Center 800 North Loop 288 Denton, TX 76209-3698 (940) 898-5399
Other Federal Agencies	
USGS website	www.usgs.gov
Hydraulic Engineering Center website	www.hec.usace.army.mil
State Agencies and Organizations	
State NFIP Coordinator	Shawn Jackson, GISP, CFM Arkansas Natural Resources Commission 10421 West Markham, Suite 310 Little Rock, AR 72205 (501) 682-3969 shawn.jackson@arkansas.gov
State GIS Coordinator	Shelby Johnson State Geographic Information Coordinator of Arkansas Arkansas Geographic Information Office 1 Capitol Mall, 3B 201 Little Rock, Arkansas 72201 (501) 682-2767 shelby.johnson@arkansas.gov

SECTION 9.0 – BIBLIOGRAPHY AND REFERENCES

Table 32 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.

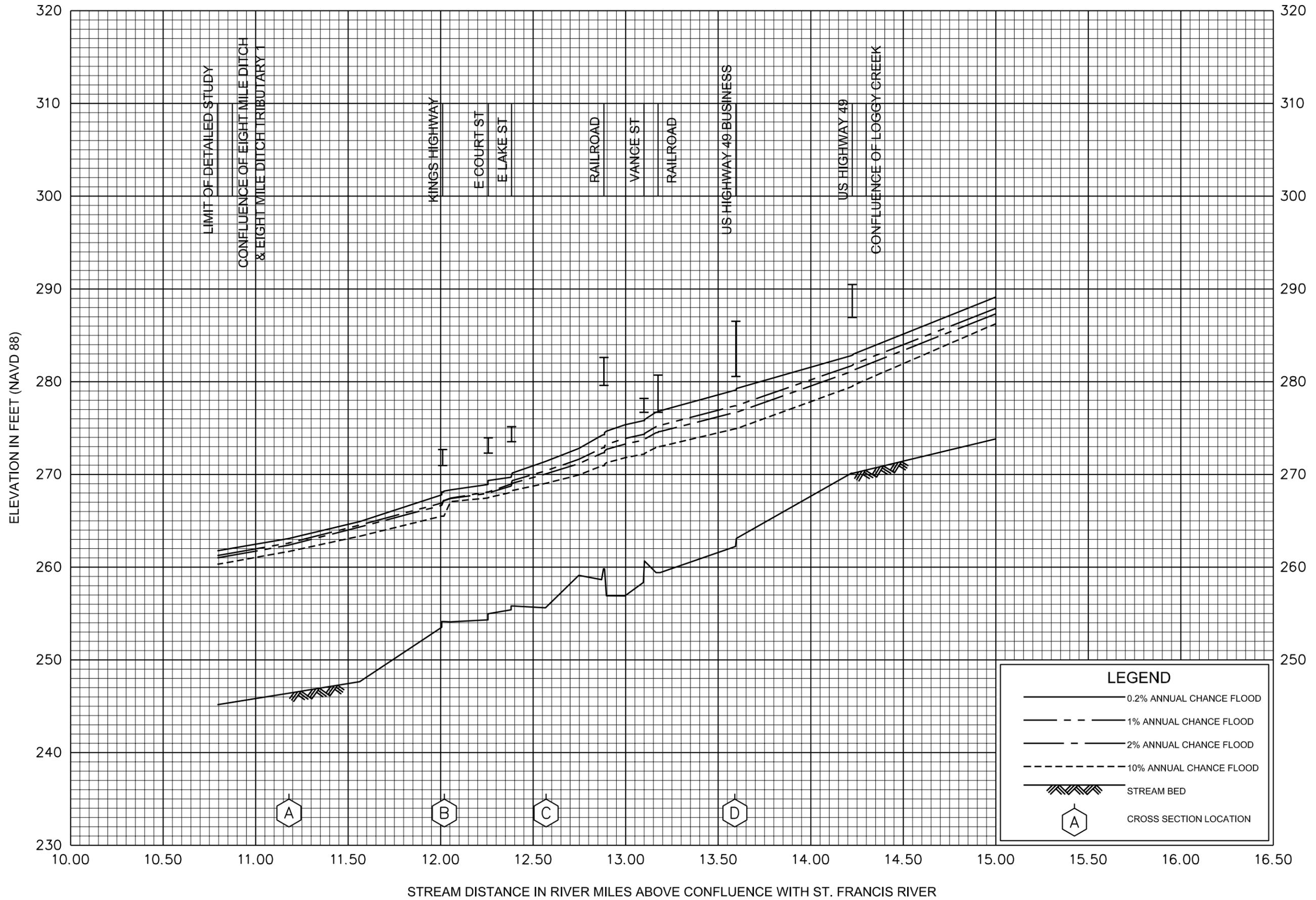
Table 32: Bibliography and References

Citation in this FIS	Publisher/ Issuer	<i>Publication Title</i> , "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
FEMA, 2009	Federal Emergency Management Agency	Greene County, AR RMP 2009	RAMPP	Washington, D.C	6/16/2009	https://msc.fema.gov/portal/home
FEMA, 2013	Federal Emergency Management Agency	Effective FIRM and FIS for Greene County, Arkansas and Incorporated Areas	FEMA	Washington, D.C.	5/16/2013	https://msc.fema.gov/portal/home
FEMA, 2020	Federal Emergency Management Agency	Greene County, AR PMR 2020	RAMPP	Washington, D.C.	N/A	https://msc.fema.gov/portal/home
Reference 1	U.S. Department of Housing and Urban Development; Federal Insurance Administration	Flood Insurance Study. City of Paragould, Greene County, AR; Flood Insurance Study report dated December 1977; Flood Insurance Rate Map dated June 15, 1978	HUD; FIA	Washington, D.C.	1977; 1978	
Reference 2	Federal Emergency Management Agency	Flood Insurance Study, City of Paragould, Greene County, AR	FEMA	Washington, D.C.	5/4/1992	https://map1.msc.fema.gov/data/05/S/PDF/050085V000.pdf?LOC=95ba32e194dc8694979fed1a6a914344
Reference 3	U.S. Department of Agriculture; Natural Resources Conservation Service	2007 Census of Agriculture, Volume 1 Chapter 2: Arkansas County Level Data	USDA; NRCS	Washington, D.C.	2007	

Citation in this FIS	Publisher/ Issuer	<i>Publication Title, "Article,"</i> Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
Reference 4	U.S. Department of Agriculture; Natural Resources Conservation Service	Soil Survey of Greene County, Arkansas	USDA; NRCS	Washington, D.C.	2006	
Reference 5	National Oceanic and Atmospheric Administration; National Environmental Satellite; Data, and Information Service, National Climatic Data Center	Divisional Normals and Standard Deviations of Temperature and Precipitation, and Heating and Cooling Degree Days 1971-2000	NOAA, NESDIS, NCDC	Asheville, N.C.	2002	
Reference 6	U.S. Census Bureau	Census 2009 Summary File 1 Arkansas	U.S. Census Bureau	Washington, D.C.	2009	
Reference 7	U.S. Department of Commerce	Rainfall Frequency Atlas of the United States, Technical Paper No. 40 (1961, revised 1963)	DOC Weather Bureau	Washington, D.C.	1963	
Reference 8	U.S. Army Corps of Engineers	Snyder's "t" vs. Weighted Stream Slope	USACE Memphis District	Memphis, TN	unpublished	
Reference 9	U.S. Army Corps of Engineers	HEC-1 Flood Hydrograph Package	USACE Hydrologic Engineering Center	Davis, CA	October 1970	
Reference 10	U.S. Army Corps of Engineers	General Design Memorandum. Eight Mile Creek. Paragould. Arkansas. Vol. 1 and 2	USACE Memphis District	Memphis, TN	August 1988	

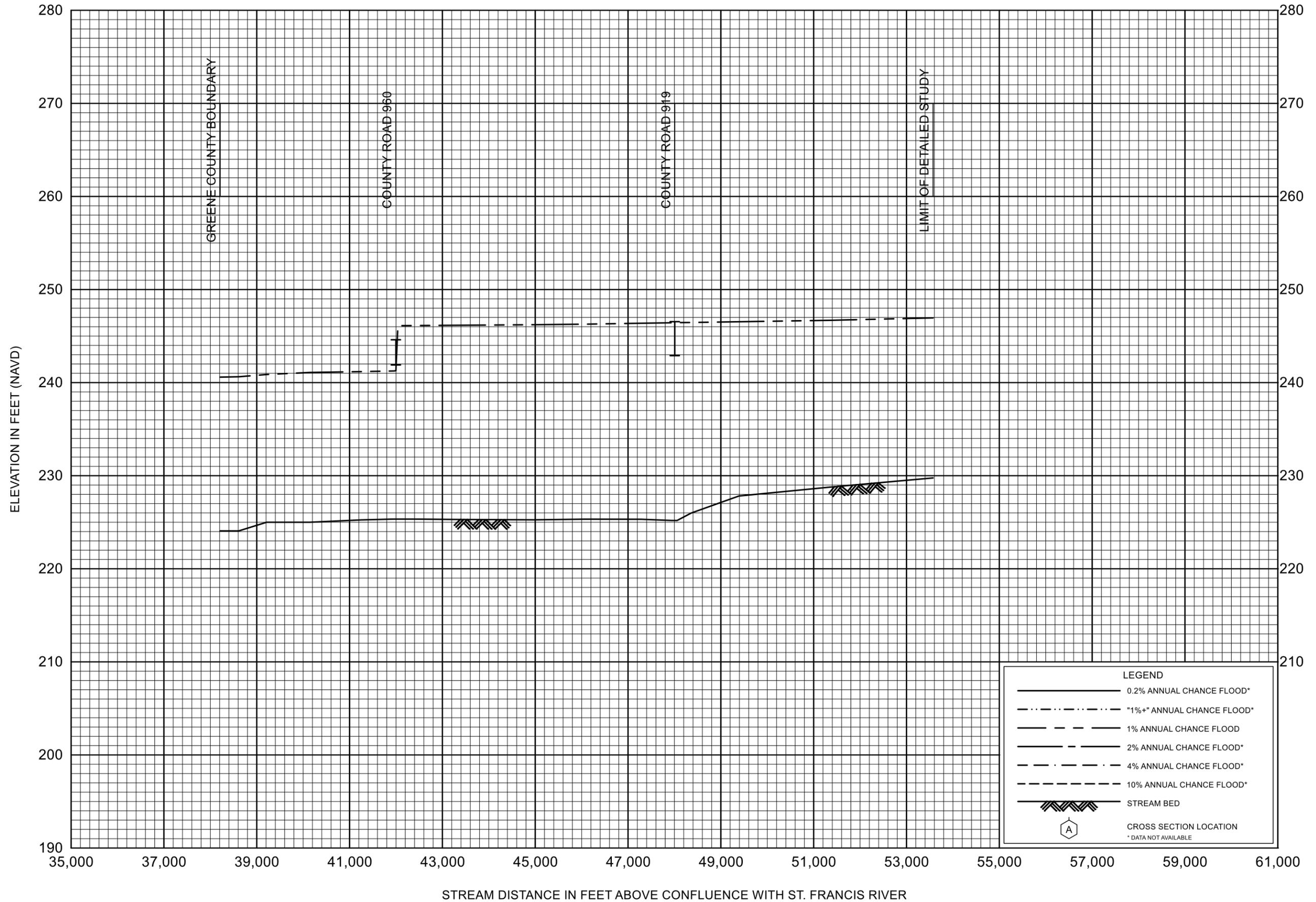
Citation in this FIS	Publisher/ Issuer	<i>Publication Title, "Article,"</i> Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
Reference 11	U.S. Army Corps of Engineers	HEC-2 Water Surface Profiles. Generalized Computer Programs	USACE Hydrologic Engineering Center	Davis, CA	April 1984	
Reference 12	U.S. Department of the Interior; U.S. Geological Survey	15-Minute Series Topographic Maps, Scale 1:62,500, Contour Interval 5 Feet and 20 Feet: Gainesville, AR, 1960; Marmaduke, Arkansas-Missouri 1959	DOI; USGS	Reston, VA	1959	
Reference 13	U.S. Department of the Interior; U.S. Geological Survey	15 Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 5 Feet and 10 Feet: Paragould East, Arkansas, Provisional Edition, 1983; Paragould West, Arkansas, Provisional Edition, 1984	DOI; USGS	Reston, VA	1983; 1984	
Reference 14	Federal Emergency Management Agency	Flood Insurance Study, Greene County, Arkansas and Incorporated Areas	FEMA	Washington, D.C.	6/16/2009	https://map1.msc.fema.gov/data/05/S/PDF/05055CV000A.pdf?LOC=029c1b2221a7c105bc93504aaf9a4fba
USGS, 2008A	U.S. Geological Survey	National Hydrography Dataset (NHD) - High-resolution	USGS	Reston, VA	12/31/2008	https://www.usgs.gov/core-science-systems/ngp/national-hydrography
USGS 2008B	U.S Geological Survey	Light Detection and Ranging Data	USGS	Reston, VA	1/1/2008	
USGS 1999	U.S Geological Survey	National Elevation Dataset 10 meter DEM and Survey	USGS	Reston, VA	1/1/1999	

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USGS 2004	U.S Geological Survey	One Meter Ortho Imagery (Natural Color)	USGS	Reston, VA	1/1/2004	



FLOOD PROFILES
EIGHT MILE CREEK

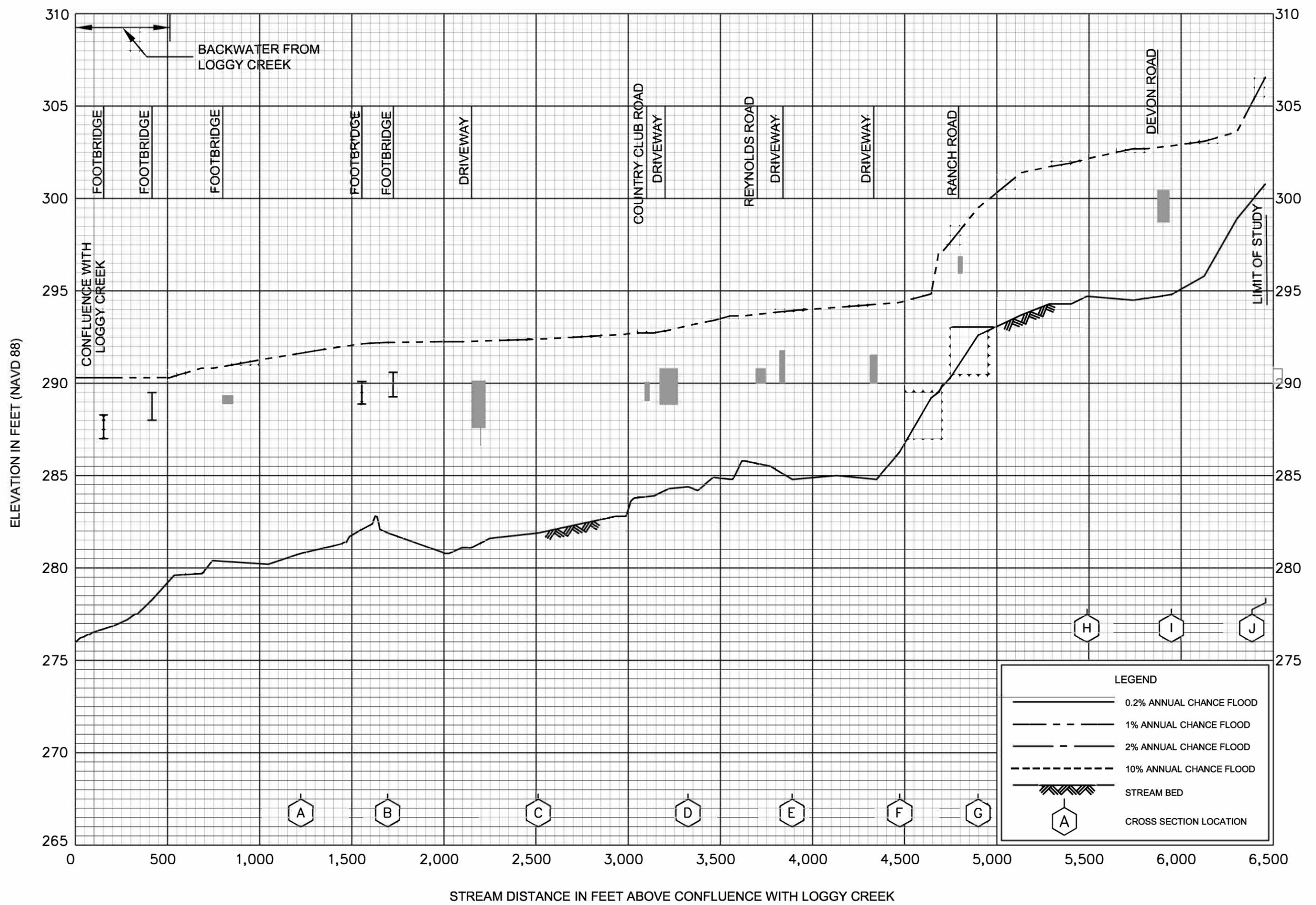
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GREENE COUNTY, AR
AND INCORPORATED AREAS



FLOOD PROFILES

EIGHT MILE DITCH

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GREENE COUNTY, ARKANSAS
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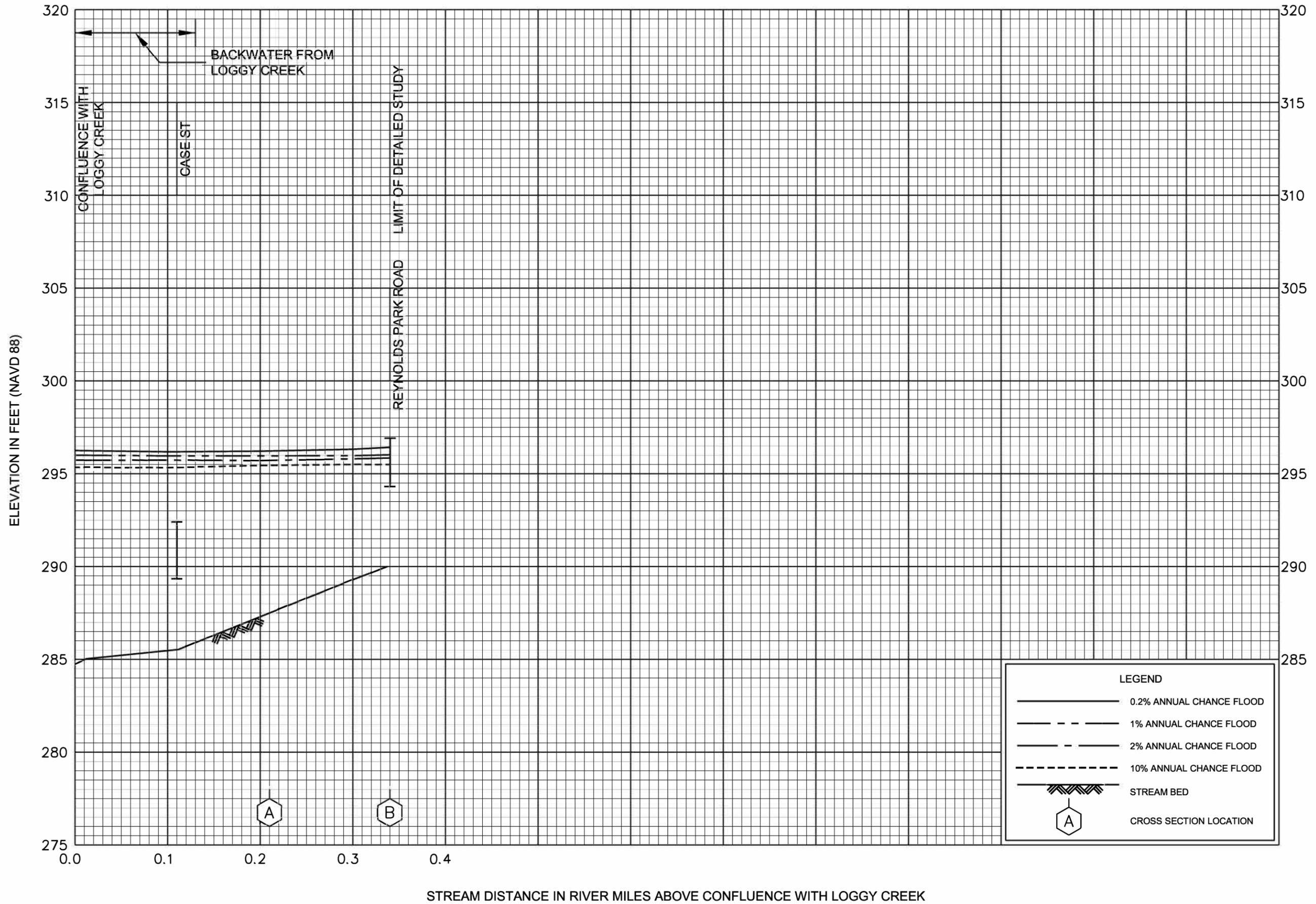


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LOGGY CREEK TRIBUTARY 1

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AND INCORPORATED AREAS



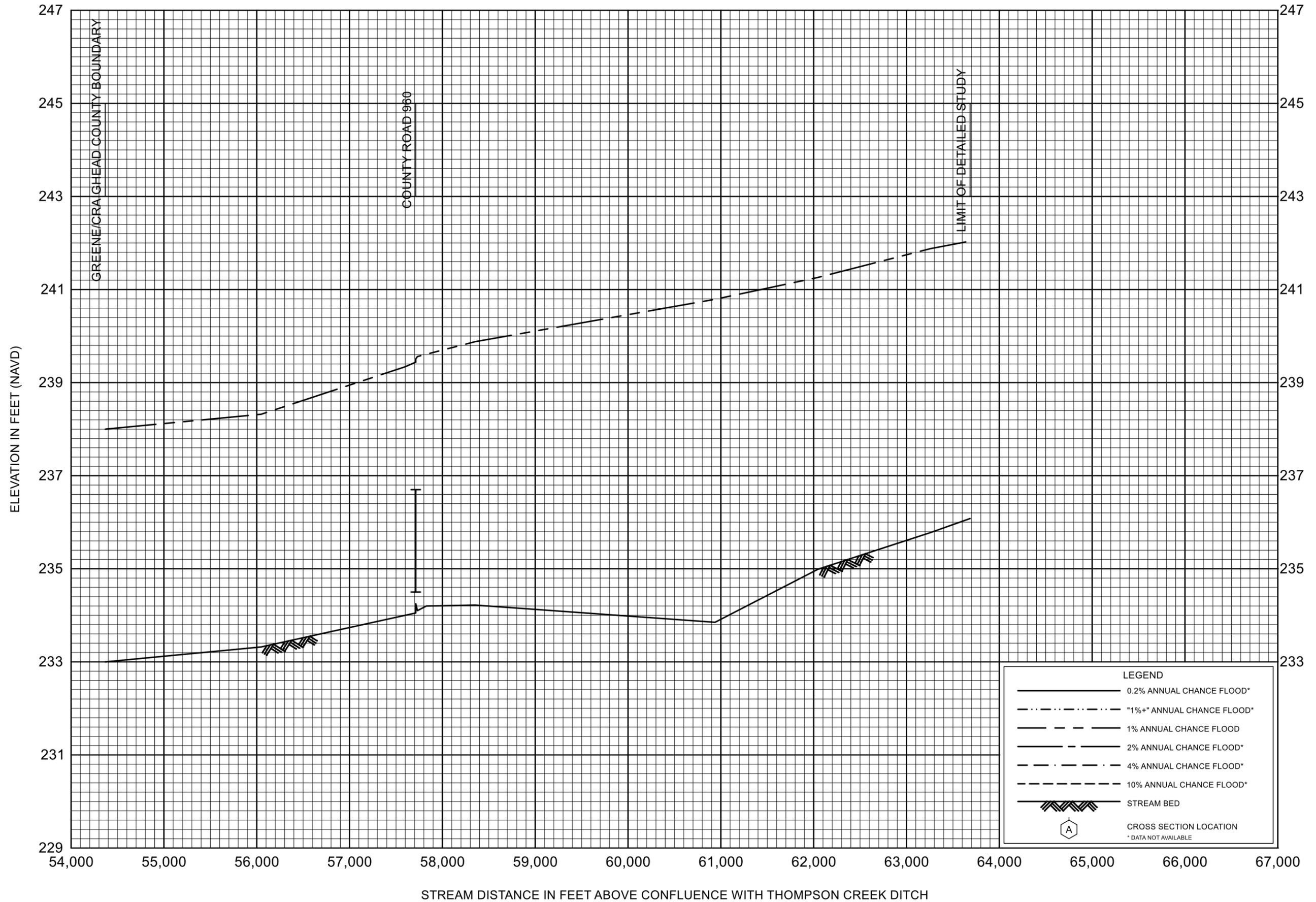
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REYNOLDS CREEK

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GREENE COUNTY, AR
AND INCORPORATED AREAS

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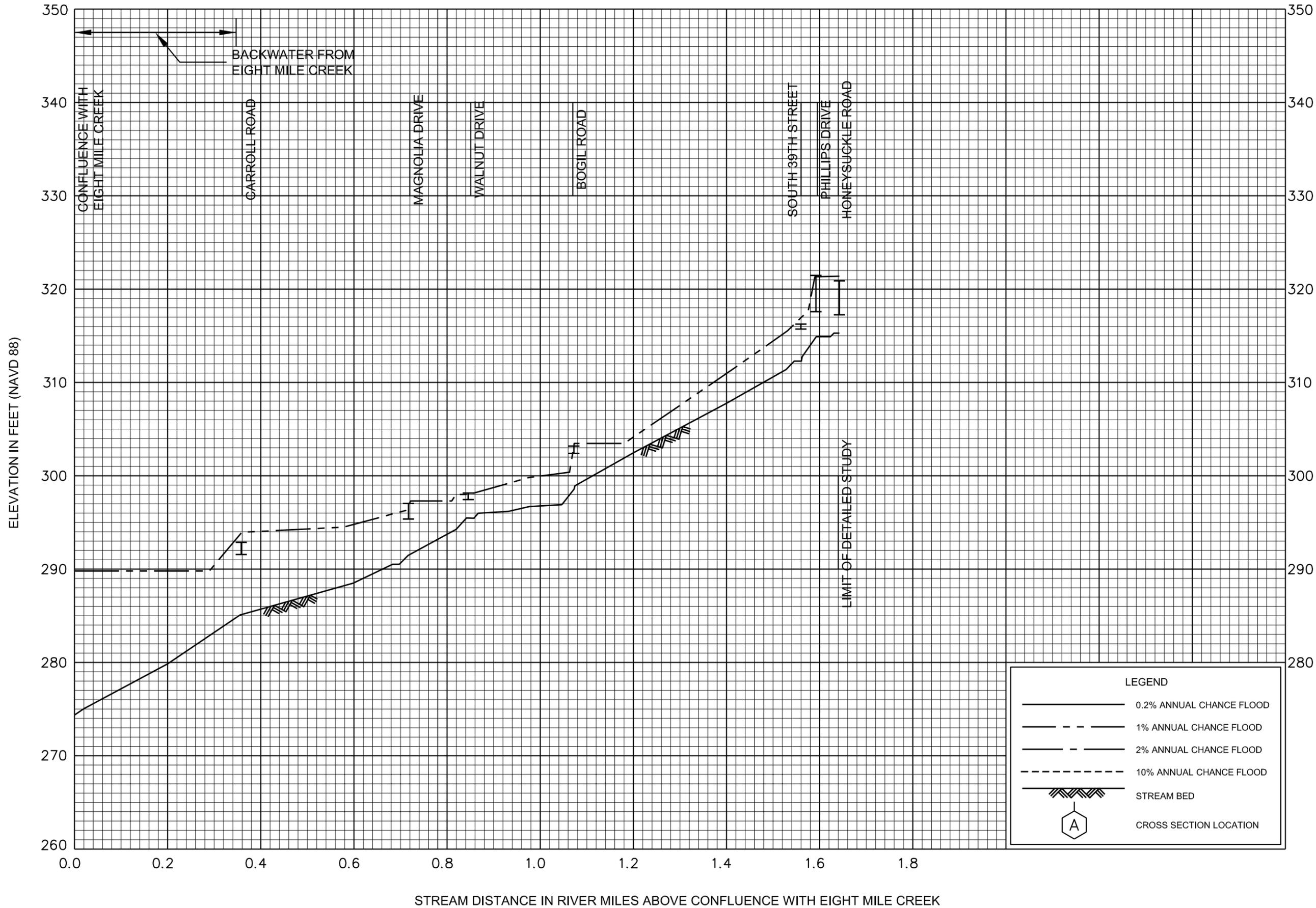


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ST. FRANCIS RIVER TRIBUTARY 6

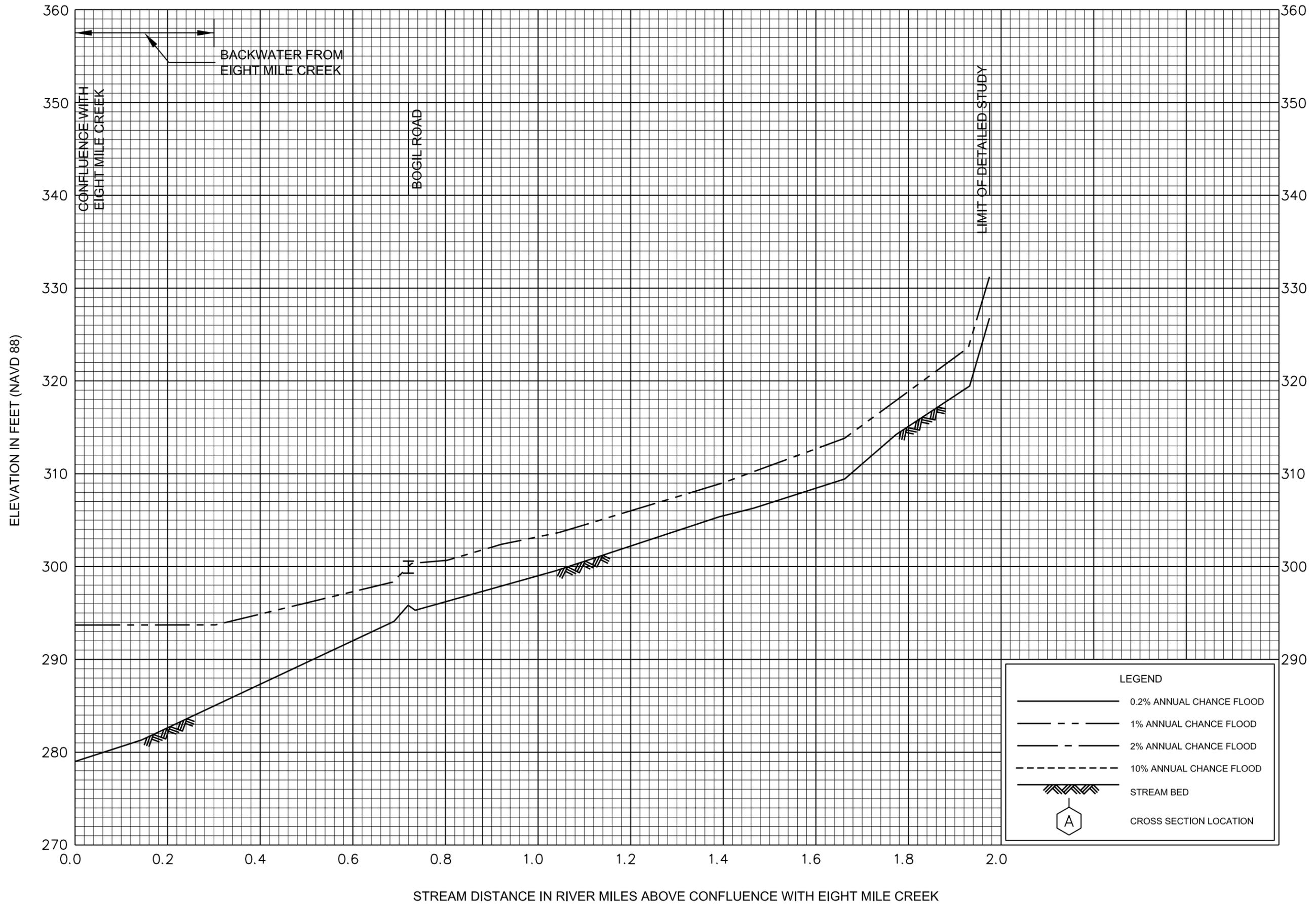
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