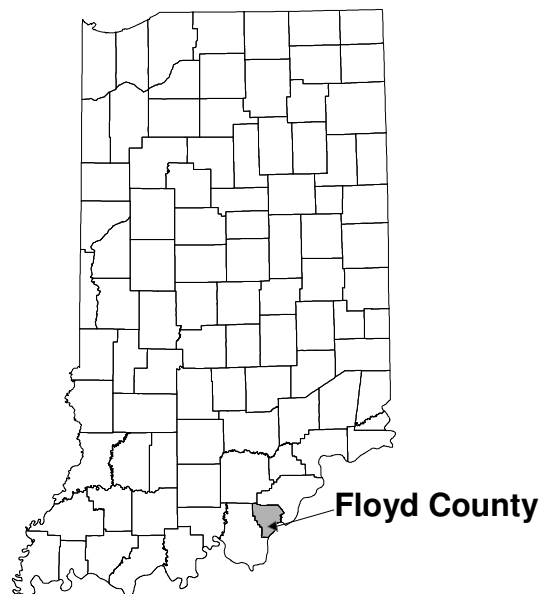


FLOOD INSURANCE STUDY



FLOYD COUNTY, INDIANA AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
FLOYD COUNTY	180432
GEORGETOWN, TOWN OF	180063
GREENVILLE, TOWN OF	180365
NEW ALBANY, CITY OF	180062



REVISED:
January 6, 2009



Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
18043C V001

NOTICE TO FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) report may not contain all data available within the Community Map Repository. Please contact the Community Map Repository for any additional data.

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

Effective Date:

Revised Dates:

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FLOOD INSURANCE STUDY
FLOYD COUNTY, INDIANA AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and supersedes the FIS reports and Flood Insurance Rate Maps (FIRMs) in the geographic area of Floyd County, Indiana, including the City of New Albany, the Town of Georgetown, and the unincorporated areas of Floyd County (hereinafter referred to collectively as Floyd County), and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood risk data for various areas of the community that will be used to establish actuarial flood insurance rates and to assist the community in its efforts to promote sound floodplain management. This information will also be used by Floyd County to update existing floodplain regulations as part of the Regular Phase of the National Flood Insurance Program (NFIP), and by local and regional planners to further promote sound land use and floodplain development. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

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

1.2 Authority and Acknowledgments

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

Information of the authority and acknowledgements for each of the new studies and previously printed FIS reports and Flood Insurance Rate Maps (FIRMs) for communities within Floyd County was compiled and is shown below:

Floyd County
(Unincorporated Areas): The hydrologic and hydraulic analyses for the July 1980 FIS were performed by Howard Needles Tammen & Bergendoff for the Federal Insurance Administration,

under Contract No. H-4565. This study was completed in December 1978.

Georgetown, Town of: The hydrologic and hydraulic analyses for the September 1979 FIS were performed by Howard Needles, Tammen & Bergendoff for the Federal Insurance Administration, under Contract No. H-4565. This work, which was completed in June 1978, covered all significant flooding sources affecting the Town of Georgetown.

New Albany, City of: For the January 29, 1982 FIS, the hydrologic and hydraulic analyses were prepared by the U.S. Army Corps of Engineers (USACE) for the Federal Insurance Administration (FIA), under Inter-Agency Agreement No. IAA-H-15-72, Project Order No. 18. For the September 21, 2000, FIS, the hydrologic and hydraulic analyses for Falling Run, Middle Creek, and Vincennes Run were prepared by the USACE, Louisville District, for the Federal Emergency Management Agency (FEMA) under Inter-Agency Agreement No. EMW-93-E-4119, Project Order No. 11. This work was completed on April 3, 1995.

New Studies: The hydrologic and hydraulic analyses for approximate stream reaches of Floyd County were performed by Christopher B. Burke Engineering LTD., on behalf of the Indiana Department of Natural Resources, under Indiana Public Works Project Number E400201B. The Indiana Department of Natural Resources managed the production of this study as part of their Cooperating Technical Partner agreement with the Federal Emergency Management Agency dated April 29, 2004, which was defined by the Indiana DNR Mapping Activity Statement 05-06 dated June 23, 2005 and funded under agreement number EMC-2005-GR-7022.

Redelineation of the previously effective flood hazard information for this FIS report, correction to the North American Vertical Datum of 1988, and conversion of the unincorporated and incorporated areas of Floyd County into the Countywide format was performed by Morley & Associates, Inc., on behalf of the Indiana Department of Natural Resources, under Indiana Public Works Project Number E400201B. The Indiana Department of Natural Resources managed the production of this study as part of their Cooperating Technical Partner agreement with the Federal Emergency Management Agency dated April 29, 2004, which was defined by the Indiana DNR

Mapping Activity Statement 05-06 dated June 23, 2005 and funded under agreement number EMC-2005-GR-7022.

1.3 Coordination

The purpose of an initial Consultation Coordinated Officer's (CCO's) meeting is to discuss the scope of the FIS. A final CCO meeting is held to review the results of the study. The dates of the initial and final CCO meetings held for the previously effective FIS reports covering the geographic area of Floyd County, Indiana are shown in Table 1 (Reference 1). The initial and final CCO meetings were attended by the study contractor, FEMA (or the Federal Insurance Administration), the Indiana Department of Natural Resources (IDNR), and the affected communities.

Table 1: CCO Meeting Dates for Pre-Countywide FIS

<u>Community Name</u>	<u>Initial CCO Date</u>	<u>Final CCO Date</u>
Floyd County (Unincorporated Areas)	June 13, 1977	September 24, 1979
New Albany, City of	June 2, 1993	April 28, 1999
Georgetown, Town of	June 13, 1977	January 22, 1979

For this countywide FIS, an initial CCO meeting was held on January 20, 2005, and was attended by IDNR, the Natural Resources Conservation Service (NRCS), the Floyd County Soil & Water Conservation District, and representatives from the City of New Albany, the Town of Georgetown, and Floyd County.

The results of the countywide study were reviewed at the final CCO meeting, attended by representatives of FEMA, IDNR and representatives from Floyd County. All problems raised at that meeting have been addressed.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS covers the geographic area of Floyd County, Indiana, including the incorporated communities listed in Section 1.1

All FIRM panels for Floyd County have been revised, updated, and republished in countywide format as a part of this FIS. The FIRM panel index, provided as Exhibit 2, illustrates the revised FIRM panel layout.

Approximate methods of analysis were used to study those areas having a low development potential or minimal flood hazards as identified during the initial CCO meeting. For this study, one new stream reach was studied using approximate methods. The scope and methods of new approximate studies were proposed and agreed upon by FEMA, the IDNR, and Floyd County.

This FIS update also incorporates the determination of letters issued by FEMA resulting in map changes (Letters of Map Change, or LOMC's). All Letters of Map Revision (LOMR's) are summarized in Table 2. Letters of Map Amendment (LOMA's) incorporated for this study are summarized in the Summary of Map Actions (SOMA) included in the Technical Support Data Notebook (TSDN) associated with this FIS update. Copies of the TSDN may be obtained from the Community Map Repository.

Table 2: Incorporated Letters of Map Change

<u>Flooding Source</u>	<u>Community and Project Id</u>	<u>Date Issued</u>	<u>Type</u>
Bald Knob Creek	180432	*	LOMR-F
New Albany	180062	*	LOMR-F

Table 3: Streams Studied by Detailed Methods

Ohio River

Table 4: Streams Studied by Redelineation Methods

Bald Knob Creek	Georgetown Creek
Falling Run	Indian Creek
Jacobs Creek	Jersey Park Creek
Lewis Branch	Silver Creek

Table 5: Streams Studied by Approximate Methods

County Run	Middle Fork Indian Creek
Fall Run	Slate Run
Flat Run Trib 1	Flat Run
Indian Creek	Bannamon Creek

Table 6: Scope of Study

<u>Stream</u>	<u>Limits of Detailed Study</u>
Ohio River	County Line to County Line
<u>Stream</u>	<u>Limits of Redelineation Study</u>
Bald Knob Creek	Mouth to Carver St.
Falling Run	Mouth to Jane Dr.
Jacobs Creek	Mouth to Confluence w/ Jay Run
Lewis Branch	Mouth to Chapel Lane
Georgetown Creek	Mouth to RR
Indian Creek	County Line to County Line
Jersey Park Creek	Mouth to Borden Rd.
Silver Creek	Mouth to Carter Hold Rd.
<u>Stream</u>	<u>Limits of Approximate Study</u>
County Run	Mouth to Lake
Fall Run	Mouth to SR 111
Flat Run Trib 1	Mouth to Headwaters
Indian Creek	County Boundary to County Boundary
Middle Fork Indian Creek	Mouth to Headwaters
Slate Run	Mouth to I-265
Flat Run	Mouth to Confluence w/ Trib 1
Bannamon Creek	Mouth to County Boundary

2.2 Community Description

Floyd County is located in south-central Indiana along the Ohio River. It is bordered by Clark County on the north and east, the Ohio River and Jefferson County, KY, to the southeast, Washington County to the northwest, and Harrison County to the west and southwest. New Albany, the county seat, is located on the Ohio River in the eastern part of Floyd County and across the river from Louisville, KY. Other communities within the county include Georgetown in the west-central part of Floyd County, Galena in the north-central, and Greenville in the northwest. Floyd County is located approximately 103 miles southeast of Indianapolis and approximately 7 miles northwest of Louisville, KY. Floyd County is served by Interstates 64, 65, and 265, US route 150, and State Routes 62 and 131.

According to U.S. Census Data from the year 2000, Floyd County is estimated to have a population size of approximately 70,896. The City of New Albany has a population size equal to a little over half of the county at 37,835, whereas the Town of Georgetown's estimated size comes out around 2,253.

The climate in Floyd County is temperate with warm summers and moderately cold winters. During summer months, the average monthly high is 86.8 degrees Fahrenheit (°F) and the average monthly low is 61 degrees °F. The highest temperatures are usually recorded during the month of July. During winter months, the average monthly high is 44.5 degrees °F and the average monthly low is 23.6 degrees °F. The lowest temperatures are usually recorded during the month of January. The annual rainfall in Floyd County is 40 to 45 inches. Rainfall is distributed over the year with more rain usually occurring during the spring months than during the rest of the year (Reference 5).

One main drainage system of the county is Indian Creek and its tributaries. The tributaries within the study reach include Middle Fork Indian Creek, Little Indian Creek, and Jersey Park Creek, all located in the north-central part of the county. Yellow Fork is also part of this drainage system and is tributary to Little Indian Creek. Indian Creek discharges to the Ohio River to the west in Harrison County. In the southern portion of the county, the land drains directly to the Ohio River. The far eastern portion of the county is drained by the Silver Creek stream system. Jacobs Creek is tributary to Silver Creek, and Lewis Branch and Bald Knob Creek are tributaries to Jacobs Creek. Silver Creek joins the Ohio River just upstream from New Albany.

There are four soil associations found in the county. They are Huntington-Wheeling-Markland, Cincinnati-Rossmoyne-Hickory, Crider-Hagerstown-Frederick, and Berks-Gilpin-Weikert. These soils are well-drained with slow to moderate infiltration and transmission rates. The Huntington-Wheeling-Markland Association is found in a band bordering the Ohio River. The Cincinnati-Rossmoyne-Hickory soils are located in a relatively small area in the northeastern part of Floyd County. The Berks-Gilpin-Weikert Association occupies the remainder of the eastern half of the county, and the Crider-Hagerstown-Frederick Association covers the entire western half of the county (Reference 1). The topography of Floyd County is gently rolling, hilly terrain, with well defined streams and valleys. Elevations are primarily in the range of 700 to 900 feet NGVD (Reference 1).

2.3 Principal Flood Problems

Major floods occur primarily during the winter and spring months, but can occur during any season. Two types of storm events cause flooding. During the winter and spring, storms of moderate intensity and long duration, coupled with frozen ground, cause flooding. During the summer, thunder-storms which have high intensities and

relatively short durations can cause floods. The principal flooding sources studied in Floyd County are the Ohio River, Silver Creek, and Indian Creek.

The six greatest floods along the Ohio River, in descending order of magnitude, occurred in 1937, 1945, 1884, 1964, 1913, and 1883. The flood of 1937 is considered to be greater than a 0.2 percent annual chance flood, and the floods of 1945 and 1884 are both considered to be greater than 1 percent annual chance flood. Elevations for historic floods of the Ohio River were obtained from the Flood Plain Information Report on the Ohio River, prepared by the COE. Since the location of the USGS gage at Louisville has changed several times since it first began recording, all elevations were adjusted to the elevation of the present gage, which is the McAlpine Dam lower gage. The dates of major flood crests and their elevations and discharges are shown in the following table (Reference #1).

Table 7: Flood Crest Elevations
USGS gage for Ohio River

<u>Date</u>	<u>Peak Discharge(cfs)</u>	<u>Elevation (feet, NGVD 1929)</u>
1937	1110000	458.6
1945	843000	447.6
1884	825000	447.6
1964	785000	446.6
(April) 1913	769000	445.9
1883	750000	445.4
1907	713000	442.3
1948	687000	441.2
(January) 1913	Undetermined	440.4
1933	704000	439.3

The 1937 flood of the Ohio River devastated the City of New Albany, causing buildings to be lost and homes destroyed. Gas, water, and telephone services were cut off, and the town operated under emergency conditions (Reference #). The extent of flooding in April 1948 was indicated in a photograph which was published in The Courier-Journal, Louisville, KY, May 9, 1948 (Reference #1).

Major flooding occurred on Silver Creek in January 1959, March 1964, June 1960, and May 1961. Data is unavailable on dates of flooding on Jacobs Creek and its two tributaries, Bald Knob Creek and Lewis Branch. However, due to the relationship between the four streams, flooding is also assumed to have occurred on these study reaches. The 1959 flood is the largest on record for the Silver Creek-Muddy Fork basin and is approximately a 21-year frequency flood. Dates of major floods on Silver Creek and their respective elevations and discharges are presented in the following table (Reference 1-3).

Table 8: Flood Crest Elevations
USGS gage for Silver Creek

<u>Date</u>	<u>Peak Discharge(cfs)</u>	<u>Elevation</u> (feet, NGVD 1929)
January 22, 1959	19600	460.68
March 10, 1964	15600	460.18
June 24, 1960	16400	458.88
May 9, 1961	14800	457.96

Descriptions of the 1959 and 1964 floods appear in the Silver Creek Flood Plain Information study prepared by the Louisville District COE (Reference 1-3). Both floods resulted from intense rainfall and caused extensive damage to the lower drainage basin. Schools and roads were closed, and families were evacuated from their homes. In 1964, Floyd County received \$20,133 in Federal aid to repair damage to roads and bridges caused by flooding of all county streams (Reference 1). The extent of flooding from this flood was indicated in photographs from The Courier-Journal and The Louisville Times (Reference 1-3).

Within the 33 years that discharges have been recorded for Indian Creek, major flooding has occurred in March 1964, July 1973, January 1959, and April 1975. Data is not available on dates, elevations, or extent of damages for floods on most of these streams. USGS records from the stream gage station near Galena indicate flooding did occur on Little Indian Creek in July 1973, April 1975, May 1976, and April 1970. The July 1973 discharge of 5500 cubic feet per second on Little Indian Creek appears to be approximately equal to a 25-year flood. The 1943 profile developed for Indian Creek is available, but, due to the uncertainty of the data, is not presented for comparative purposes. The USGS gaging station at Corydon, Indiana, recorded the following discharges and elevations for the four largest floods on Indian Creek. Data are not available for Jersey Park Creek, but it is subject to backwater flooding from Indian Creek. The following table shows Indian Creek flood crest elevations.

Table 9: Flood Crest Elevations
USGS gage for Indian Creek

<u>Date</u>	<u>Peak Discharge(cfs)</u>	<u>Elevation</u> (feet, NGVD 1929)
March 5, 1964	26700	599.76
July 22, 1973	24400	599.43
January 21, 1959	23800	599.34
April 24, 1975	13400	597.06

The primary flooding source in Georgetown is Georgetown Creek, along the southern part of the town. Although very little historic data is available, it is assumed that flooding of Georgetown Creek occurred in March 1964, July 1973, and January 1959, concurrent with flooding of other streams in Floyd County. Local testimony indicates that significant flooding did occur in 1964 (Reference 1-3). Local testimony indicates that the March 1964 flood may have reached an elevation of about 697.5 feet, NGVD

at a business located just upstream of the old Georgetown-Lanesville Road bridge. The frequencies of the above 3 floods are difficult to estimate due to lack of records on flood elevations and streamflow. However, Indian Creek, of which Georgetown Creek is a tributary, has experienced floods of greater than a 50-year frequency on the indicated dates. The gaging station for Indian Creek is located at Corydon, approximately ten miles Southwest of Georgetown.

2.4 Flood Protection Measures

Although there have been some floodwalls and levees constructed near the confluence of Silver Creek and the Ohio River, there are no structural measures for flood damage reduction on any of the study reaches (Reference 1-3). County ordinances which prohibit construction within the flood plains are enforced by the County Commissioners. These ordinances are the Floyd County Zoning Ordinance, adopted August 7, 1967, and the Floyd County Subdivision Ordinance, adopted August 25, 1968. In addition, the Indiana Flood Control Act of 1945 requires that proposed construction within flood plains be approved by the Indiana Natural Resources Commission (Reference 8).

The City of New Albany is protected from flood waters of the Ohio River by 2.8 miles of earth levee, 0.69 mile of concrete levees, six pumping plants, and other necessary appurtenances. The top elevation of the protective works varies from 461.67 NAVD to 463.57 feet NAVD. The project affords protection to New Albany against a flood equal to the maximum on record, elevation 458.57 feet NAVD in January 1937, with a freeboard of three feet. Construction by the USACE began in 1948 and was completed in 1954.

3.0 ENGINEERING METHODS

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

of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analysis

Hydrologic analyses were carried out to establish peak discharge-frequency relationships for each flooding source studied by detailed methods affecting Floyd County. Table 8 contains a summary of peak discharges for the 10-, 2-, 1-, and 0.2-percent annual chance floods, where applicable, for each flooding source studied in detail in Floyd County. Peak discharges in the table were compiled from previously effective FIS reports for Floyd County and incorporated areas. Source citations refer to the source of the detailed study.

Table 10. Summary of Discharges

Flooding Source And Location(Square Miles)	Drainage Area	Peak Discharge (cfs)			
		10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
BALD KNOB CREEK					
At mouth	1.5	1100	1575	1825	2350
INDIAN CREEK					
Below Little Indian Creek	62.9	9900	14000	16200	20800
Above Little Indian Creek	36.6	7200	10100	11800	15000
Above Jersey Park Creek	25.3	5800	8200	9500	12100
JACOBS CREEK					
At mouth	5.7	2450	3400	4000	5100
Above Bald Knob Creek	3.9	1950	2750	3200	4100
Above Lewis Branch	1.33	1050	1500	1700	2200
JERSEY PARK CREEK					
At mouth	9.5	3300	4600	5350	6900
At Greenville-Borden Road	7.4	2850	4000	4600	5900
LEWIS BRANCH					
At mouth	1.83	1250	1800	2050	2650
LITTLE INDIAN CREEK					
At mouth	26.3	6000	8400	9800	12500
Below Yellow Fork	21.05	5200	7300	8500	11000
Below Luther Road	13.31	4000	5600	6500	8400
At Spickert Knob Road	6.49	2650	3700	4300	5500

Table 10. Summary of Discharges (continued)

Flooding Source And Location Chance	Drainage Area (Square Miles)	Peak Discharge (cfs)			
		10% Annual	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
LITTLE INDIAN CREEK (continued)					
At Atkins Road	1.83	1250	1750	2050	2650
MIDDLE CREEK					
At State Route 111	4.8	2000	***	3400	***
At confluence of Vincennes Run	4.58	550**	***	1300****	***
Above South Hollow Fork	2.73	1380	***	2330	***
50 feet downstream of railroad bridge no. 1	2.55	1340	***	2250	***
50 feet upstream of Parks and Recreation Road	2.45	1300	***	2230	***
At railroad bridge no. 2	***	1275**	***	1630**	***
75 feet upstream of railroad bridge no. 3	2.33	1290	***	2190	***
OHIO RIVER					
At Louisville USGS gage	91970	600000	750000	812000	952000
SILVER CREEK					
Below Blackiston Mill Road	209	16250	23000	25500	33000
YELLOW FORK					
At mouth	3.95	1950	2750	3250	4100
GEORGETOWN CREEK					
At Wissman Road	6.76	2700	3800	4300	5600
At Wolfe Cemetary Road-Jasper Road	9.51	3300	4600	5300	6800
At Baylor-Wissman Road	5.4	2350	3300	3800	4900
FALLING RUN					
At mouth	10.4	2200*	2950*	3180*	***
Above Valley View Creek	8.22	2030*	2730*	2950*	***
At State Street	8.10	2020*	2710*	2930*	***
Approximately 650 feet downstream of Fall Run	6.75	2460	3580	4060	***

Table 10. Summary of Discharges (continued)

Flooding Source And Location(Square Miles)	Drainage Area	Peak Discharge (cfs)			
		10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
FALLING RUN (continued)					
Above Fall Run	4.40	2200	3350	3880	***
50 feet downstream of County Club Lane	4.00	2050	3140	3620	***
Above Trinity Run	2.77	1580	2450	2800	***
Above Green Run	1.94	1190	1840	2120	***
Above Lost Knob Brook	1.24	840	1270	1480	***
VINCENNES RUN					
At mouth	1.27	1350****	***	2100****	***
100 feet downstream of railroad culvert	1.18	540	***	920	***
100 feet downstream of mobile home park road	1.10	520	***	890	***
Above Corydon Run	0.75	430	***	730	***
At private drive (mile 0.891)	0.62	390	***	660	***

* Flows reduced downstream of State Street because of storage routing performed at State Street due to an undersized culvert

**Flow reduced due to diverted flow at Highwater Road

***Data not available

****Flows adjusted at confluence of Vincennes Run to produce equal water-surface elevations on both streams

The USGS Circular 710 was applied to Floyd County streams to develop flood discharges. Circular 710 describes a multiple-regression analysis which uses the relationships between floods and drainage basin characteristics to develop frequency discharges (Reference 11). Other procedures applied to Floyd County streams to obtain discharges were Indiana Department of Natural Resources regression procedure, the USGS regression procedure which used different aerial skew and standard deviation values, and a SCS procedure for relating discharges to small drainage areas. The discharges obtained from each method were then plotted by frequency against drainage areas and a "best fit" line was drawn through the data. In developing the frequency curves, consideration was given to the relative locations of the stream gages to each study reach, the basin characteristics, and other hydrologic parameters.

Frequency-discharge plots for the Clark County Flood Insurance Study and the Switzerland County Flood Insurance Study were obtained and compared to the prepared plots for each detailed study (References 1-3). These studies were examined because both counties contain streams that are tributaries to the Ohio River and, therefore, may have similar basin characteristics. The Clark County Flood Insurance Study was also specifically used for obtaining the frequency-discharge plot for Silver Creek since it had been developed in that study. The frequency-discharge plot for the Ohio River was obtained from [REDACTED]. The Floyd County discharge plots for the remaining streams were adjusted based upon the data from the two previously mentioned studies relative to the location of the two counties and the similarity of drainage areas. The adjusted discharges were then coordinated with the IDNR and the resulting frequency-discharge versus drainage area plots were selected as the final values for use in the Floyd County Flood Insurance Study. Discharge values for those stream reaches identified for approximate study were included in the previously described coordination and determination efforts.

Standard and accepted hydrologic methods were used to develop discharge data on the study streams in Floyd County. These data were coordinated with the Indiana Department of Natural Resources, the Natural Resources Conservation Service (formally the Soil Conservation Service), the U. S. Geological Survey and the Louisville District of the U. S. Army Corps of Engineers, through a Memorandum Of Understanding dated May 6, 1976. Discharge curves for the 10%, 2%, 1%, and 0.2% annual chance floods were developed for each study stream using several different procedures and compared for consistency.

3.2 Hydraulic Analysis

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

Cross sections for the backwater analyses were obtained from a variety of sources including: physical survey data, IDNR contour mapping, USGS topographic mapping and local contour mapping.

Pre-countywide Analyses

Profiles were developed where appropriate to show the impact of backwater flooding on the tributary streams. The resulting elevations are shown on the maps. Streams affected by backwater flooding are Silver Creek, Jacobs Creek, Bald Knob Creek, and

Lewis Branch. The final frequency profiles that are being recommended have been plotted to reflect these combinations of backwater effects. Profiles and flood elevations for Silver Creek were developed by Cole Associates, Inc., in preparation of the Flood Insurance Study for Clark County, Indiana (Reference 12). The data from both studies were reviewed and used in the Floyd County Flood Insurance Study. Flood elevations for the approximate study reaches were estimated using data from the detailed studies and the existing Flood Hazard Boundary Map (Reference 1-3). Flood depths at the beginning and ending reaches of the detailed study reaches were assumed to be representative of the expected depths within the approximate study reaches. The Flood Hazard Boundary Map was reviewed and adjustments were made where necessary giving consideration to the results of the detailed studies. Contours from topographic maps were noted, and USGS flood prone area maps were also reviewed to estimate the extent of flooding (Reference #1).

Recorded high water information was used to help establish channel and overbank roughness data. Field observation was also used in conjunction with local testimony to determine the locations where bridges may be undersized, and flood backwater could be expected. Little information on past floods was available through local testimony, but an estimated elevation at one location was established for the 1937 flood on the Ohio River. An elevation of approximately 460.78 feet, NGVD was reached at a local residence along Payne-Koehler Road near Jacobs Creek. Some information was available on the Ohio River and Silver Creek through newspaper accounts, and several photographs of flood conditions were obtained (Reference 1-3).

Countywide Analyses

Water-surface elevations for floods of the selected recurrence intervals were computed through use of the USACE HEC-2 step-backwater computer program, and the USGS E431 step-backwater computer program for streams originally studied in the Unincorporated Areas of Floyd County Flood Insurance Study and the City of New Albany Flood Insurance Study. For the new approximate study reaches, the USACE HEC-RAS program was used. HEC-RAS is an updated version of the HEC-2 program used to perform step-backwater analyses.

Flood profiles were prepared for all streams studied by detailed methods and show computed water-surface elevations to an accuracy of 0.5 feet for floods of the selected recurrence intervals. For this countywide FIS, flood profiles and approved LOMRs have been consolidated into continuous stream reaches and adjusted to reflect the current vertical datum as described in Section 3.3. New profiles have been prepared for the new detailed studies and for the purposes of incorporating the LOMRs described in Section 2.1 above.

The estimated starting water-surface elevation for the beginning cross section of each study was specified as part of the input for the HEC-2 computer program. A cross section was rated some distance downstream from the starting point of the detailed study or at the stream mouth. The model was then run using the slope-area

procedure, and profiles were computed to the beginning point of the detailed study reach for an initial water-surface elevation (Reference #1).

Channel and overbank roughness factors (Manning's "n" values) used in the hydraulic computations were chosen by engineering judgment and were based on field observations of the stream and floodplain areas. Channel and overbank roughness factors used in the detailed studies are summarized by stream in Table 11.

Table 11. Channel and Overbank Roughness Factors
(ohio river)

<u>Stream</u>	Roughness Coefficients	
	<u>Main Channel</u>	<u>Overbanks</u>

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

3.3 Vertical Datum

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

All flood elevations shown in this FIS report and on the FIRM are referenced to NAVD88. Structure and ground elevations in the community must, therefore, be referenced to NAVD88. It is important to note that adjacent communities may be referenced to NGVD29. This may result in differences in Base Flood Elevations (BFEs) across the corporate limits between the communities.

In this revision, a vertical datum conversion of -0.43 feet was calculated at the centroid of the county and used to convert all elevations in Floyd county from NGVD29 to NAVD88 using the National Geologic Survey's VERTCON online utility (VERTCON, 2005).

For more information on NAVD88, see the FEMA publication entitled *Converting the National Flood Insurance Program to the North American Vertical Datum of 1988* (FEMA, June 1992), or contact the Vertical Network Branch, National Geodetic Survey, Coast and Geodetic Survey, National Oceanic and Atmospheric Administration, Rockville, Maryland 20910 (Internet address <http://www.ngs.noaa.gov>).

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

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. Therefore, each FIS provides 1-percent-annual-chance flood elevations and delineations of the 1- and 0.2-percent-annual-chance floodplain boundaries and 1-percent-annual-chance floodway to assist communities in developing floodplain management measures. This information is presented on the FIRM and in many components of the FIS report, including Flood Profiles, and the Floodway Data table. Users should reference the data presented in the FIS report as well as additional information that may be available at the local map repository before making flood elevation and/or floodplain boundary determinations.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent-annual-chance flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent-annual-chance flood is employed to indicate additional areas of flood risk in the community. For each stream studied by detailed methods, the 1- and 0.2-percent-annual-chance floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps. This topographic mapping has a 2-contour interval and was derived from an aerial survey performed in 2005.

The 1- and 0.2-percent-annual-chance floodplain boundaries are shown on the FIRM (Exhibit 2). On this map, the 1-percent-annual-chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A, AE, V, and VE); and the 0.2-percent-annual-chance floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 1- and 0.2-percent-annual-chance floodplain boundaries are close together, only the 1-percent-annual-chance floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

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

4.2 Floodways

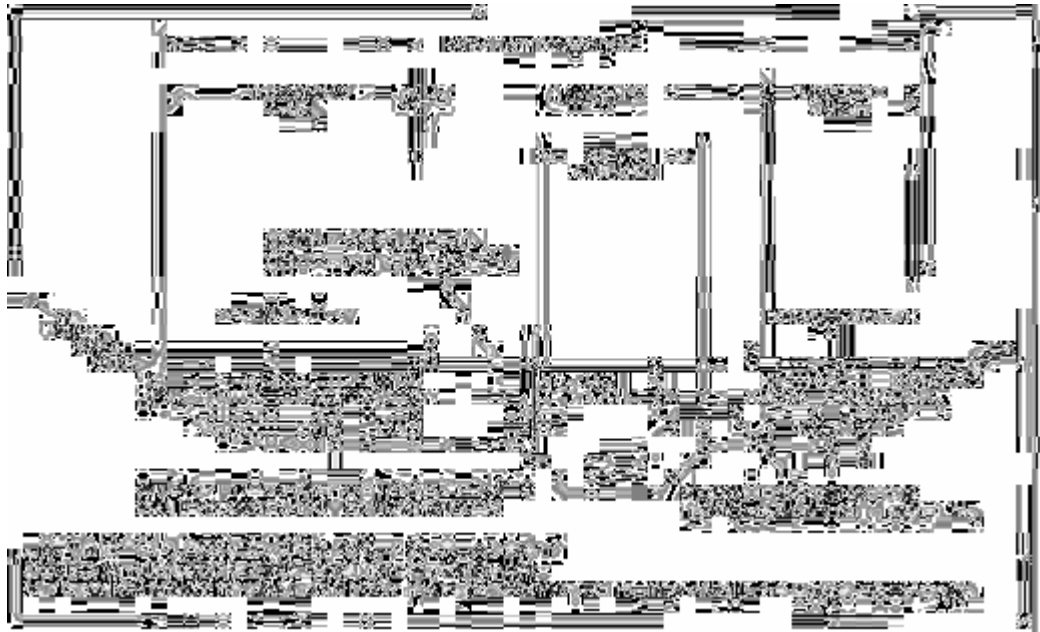
Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 1-percent-annual-chance floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 1-percent-annual-chance flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The State of Indiana, however, per Indiana Code IC 14-28-1 and Indiana Administrative Code 312 IAC 10, has designated that encroachment in the floodplain is limited to that which will cause no significant increase in flood height. As a result, floodways for this study are delineated based on a flood surcharge of less than 0.15 feet. The floodways in this study were approved by the IDNR, and are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodway presented in this FIS report and on the FIRM was computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations have been tabulated for selected cross sections (Table 6). 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.

The area between the floodway and 1-percent-annual-chance floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 1-percent-annual-chance flood more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 2.

Figure 1: Floodway Schematic



FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FT/SEC)	REGULATORY (FEET, NAVD)	WITHOUT FLOODWAY (FEET, NAVD)	WITH FLOODWAY (FEET, NAVD)	INCREASE (FEET)
BALD KNOB CREEK								
A	0.047	483	668	2.7	448.1	444.3 ⁴	444.4	0.1
B	0.355	248	523	3.5	452.0	452.0	452.1	0.1
C	0.654	235	1,243	1.5	461.9	461.9	462.0	0.1
D	0.798	140	243	4.6	463.4	463.4	463.5	0.1
E	0.887	344	1,177	1.6	470.2	470.2	470.3	0.1
F	0.978	303	901	2.0	471.6	471.6	471.7	0.1
G	1.168	95	238	7.7	476.9	476.9	477.0	0.1
H	1.488	195	474	3.9	490.4	490.4	490.4	0.0
FALLING RUN								
A	0.095 ²	214 ³	4,391	0.7	437.6	437.6	437.7	0.1
B	0.136 ²	80 ³	1,699	1.9	437.9	437.9	438.0	0.1
C	0.283 ²	493 ³	5995	0.5	438.0	438.0	438.1	0.1
D	0.382 ²	150 ³	3616	0.9	438.0	438.0	438.1	0.1
E	0.445 ²	371 ³	6924	0.5	438.9	438.9	439.0	0.1
F	0.615 ²	150 ³	3596	0.9	438.9	438.9	439.0	0.1
G	0.679 ²	350 ³	7,724	0.4	439.9	439.9	440.0	0.1
H	0.731	620 ²	12634	0.3	439.9	439.9	440.0	0.1
I	0.929	38 ²	1098	2.7	440.5	440.5	440.6	0.1
J	0.947	150 ²	3516	0.8	440.7	440.7	440.8	0.1
K	1.122	450 ²	5145	0.6	440.7	440.7	440.8	0.1
L	1.270	75	1211	2.4	442.5	442.5	442.6	0.1

¹ MILES ABOVE CONFLUENCE WITH JACOBS CREEK

² MILES ABOVE OHIO RIVER LEVEE

³ THE FLOODWAY SHOWN ON THE FIRM HAS BEEN WIDENED BEYOND THIS VALUE FOR ADMINISTRATIVE PURPOSES

⁴ ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM OHIO RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY
**COUNTY OF FLOYD, IN
(AND INCORPORATED AREAS)**

FLOODWAY DATA

BALD KNOB CREEK - FALL RUN - FALLING RUN

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FT/SEC)	REGULATORY (FEET, NAVD)	WITHOUT FLOODWAY (FEET, NAVD)	WITH FLOODWAY (FEET, NAVD)	INCREASE (FEET)
FALLING RUN (CONTINUED)								
M	1.341	111	1230	2.4	442.6	442.6	442.7	0.1
N	1.419	94	1369	2.1	442.7	442.7	442.8	0.1
O	1.582	406	1306	2.2	442.8	442.8	442.9	0.1
P	2.149	652	6276	0.8	443.0	443.0	443.1	0.1
Q	2.467	599	3677	1.0	443.0	443.0	443.1	0.1
R	2.620	579	2980	1.3	443.1	443.1	443.2	0.1
S	2.713	401	1848	2.1	443.2	443.2	443.3	0.1
T	2.927	534	2843	1.3	443.3	443.3	443.4	0.1
U	3.096	192	684	5.6	443.9	443.9	444.0	0.1
V	3.242	105	522	6.8	446.8	446.8	446.8	0.0
W	3.323	240	624	5.7	448.3	448.3	448.3	0.0
X	3.410	163	912	3.9	449.4	449.4	449.4	0.0
Y	3.570	406	2479	1.4	449.9	449.9	449.9	0.0
Z	3.831	316	1148	2.4	450.8	450.8	450.9	0.1
AA	3.926	490	1309	2.1	452.0	452.0	452.1	0.1
AB	4.224	144	610	3.6	457.4	457.4	457.4	0.0
AC	4.436	90	453	4.8	459.9	459.9	460.0	0.1
AD	4.884	233	498	3.2	467.2	467.2	467.3	0.1
AE	5.077	155	514	3.1	473.5	473.5	473.6	0.1

¹ MILES ABOVE OHIO RIVER LEVEL

² THE FLOODWAY SHOWN ON THE FIRM HAS BEEN WIDENED BEYOND THIS VALUE FOR ADMINISTRATIVE PURPOSES

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

**COUNTY OF FLOYD, IN
(AND INCORPORATED AREAS)**

FLOODWAY DATA

FALLING RUN

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH ² (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FT/SEC)	REGULATORY (FEET, NAVD)	WITHOUT FLOODWAY (FEET, NAVD)	WITH FLOODWAY (FEET, NAVD)	INCREASE (FEET)
GEORGETOWN CREEK								
A	1.527	199/ 60	820	6.5	683.6	683.6	683.6	0.0
B	1.614	205 ³	711	7.5	687.9	687.9	687.9	0.0
C	1.648	196 ³	1531	3.5	689.1	689.1	689.1	0.0
D	1.781	200/130	1125	4.7	689.9	689.9	689.9	0.0
E	1.891	200/140	905	5.9	691.7	691.7	691.8	0.1
F	1.928	210/110	1030	5.1	693.0	693.0	693.0	0.0
G	1.963	150/ 55	653	8.1	694.2	694.2	694.2	0.0
H	2.000	150/ 60	674	7.9	695.1	695.1	695.1	0.0
I	2.153	201 ³	687	6.3	699.8	699.8	699.8	0.0
J	2.184	330 ³	463	9.3	700.5	700.5	700.5	0.0
K	2.248	200/155	828	5.2	703.0	703.0	703.0	0.0
L	2.339	200/120	758	5.7	705.2	705.2	705.2	0.0
M	2.416	390/165	1646	2.6	708.5	708.5	708.6	0.1
N	2.455	240/125	1079	4.0	708.6	708.6	708.7	0.1
O	2.506	209/160	761	5.7	709.0	709.0	709.1	0.1
P	2.600	194/170	673	6.4	711.8	711.8	711.8	0.0
Q	2.785	208/180	841	5.1	716.5	716.5	716.5	0.0
R	2.900	207 ³	780	5.5	718.8	718.8	718.8	0.0
S	3.037	207 ³	780	5.5	721.9	721.9	721.9	0.0
T	3.188	216/155	1039	4.1	724.6	724.6	724.6	0.0
U	3.279	190/180	953	4.5	727.7	727.7	727.7	0.0
V	3.309	230/200	785	4.8	728.4	728.4	728.4	0.0
W	3.373	230/150	733	5.2	730.0	730.0	730.1	0.1
X	3.456	230/190	831	4.6	732.4	732.4	732.5	0.1
Y	3.572	210 ³	610	6.2	735.7	735.7	735.8	0.1

¹ MILES ABOVE MOUTH

² TOTAL WIDTH / WIDTH CORPORATE LIMITS

³ THIS WIDTH IS WITHIN CORPORATE LIMITS

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

**COUNTY OF FLOYD, IN
(AND INCORPORATED AREAS)**

FLOODWAY DATA

GEORGETOWN CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FT/SEC)	REGULATORY (FEET, NAVD)	WITHOUT FLOODWAY (FEET, NAVD)	WITH FLOODWAY (FEET, NAVD)	INCREASE (FEET)
INDIAN CREEK								
A	55.490	1685	8,649	1.9	677.2	677.2	677.3	0.1
B	53.960	1690	8,776	1.3	678.5	678.5	678.6	0.1
C	54.173	1614	5,201	2.3	679.2	679.2	679.3	0.1
D	54.711	1130	6,091	1.9	683.6	683.6	683.7	0.1
E	55.030	845	4,127	2.9	684.0	684.0	684.1	0.1
F	55.275	1230 ²	5,011	2.4	688.5	688.5	688.6	0.1
G	55.526	2215 ²	1,308	7.0	692.0	692.0	692.1	0.1
H	55.709	865	4,620	2.0	694.0	694.0	694.0	0.0
I	56.019	1032	3,932	2.3	695.2	695.2	695.2	0.0
JACOBS CREEK								
A	0.426	570	630	6.3	448.1	437.5 ³	437.5	0.0
B	0.502	380	499	8.0	448.1	439.9 ³	440.0	0.1
C	0.597	426	1,688	2.4	448.1	442.4 ³	442.5	0.1
D	0.686	500	2,939	1.4	448.1	444.1 ³	444.2	0.1
E	0.854	496	1,979	2.0	448.1	444.8 ³	444.9	0.1
F	1.159	428	1,356	2.4	448.1	447.2 ³	447.3	0.1
G	1.451	500	2,969	1.1	454.1	454.1	454.1	0.0
H	1.574	511	1,490	1.1	454.4	454.4	454.4	0.0
I	1.785	200	282	6.0	456.4	456.4	456.4	0.0
J	2.195	418	907	1.9	472.2	472.2	472.3	0.1

¹ MILES ABOVE MOUTH

² COMBINED FLOODWAY WIDTH OF INDIAN CREEK AND JERSEY PARK CREEK

³ ELEVATIONS WITHOUT CONSIDERING BACKWATER EFFECT FROM OHIO RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

**COUNTY OF FLOYD, IN
(AND INCORPORATED AREAS)**

FLOODWAY DATA

INDIAN CREEK - JACOBS CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FT/SEC)	REGULATORY (FEET, NAVD)	WITHOUT FLOODWAY (FEET, NAVD)	WITH FLOODWAY (FEET, NAVD)	INCREASE (FEET)
JERSEY PARK CREEK								
A	0.402	470	1,217	4.4	693.1	693.1	693.2	0.1
B	0.715	363	2,070	2.6	697.7	697.7	697.8	0.1
C	1.087	390	1,445	3.7	705.8	705.8	705.9	0.1
D	1.497	375	1,961	2.7	715.2	715.2	715.3	0.1
E	1.612	527	1,412	3.3	717.1	717.1	717.2	0.1
F	1.907	496	2,061	2.2	723.0	723.0	723.1	0.1
LEWIS BRANCH								
A	0.083 ²	154	608	3.4	455.0	454.3 ³	454.4	0.1
B	0.158 ²	256	572	3.6	456.6	456.6	456.7	0.1
C	0.375 ²	146	628	3.3	462.7	462.7	462.8	0.1
D	0.583 ²	238	694	3.0	466.7	466.7	466.8	0.1

¹ MILES ABOVE CONFLUENCE WITH INDIAN CREEK

² MILES ABOVE CONFLUENCE WITH JACOBS CREEK

³ ELEVATIONS WITHOUT CONSIDERING BACKWATER EFFECT FROM JACOBS CREEK

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

**COUNTY OF FLOYD, IN
(AND INCORPORATED AREAS)**

FLOODWAY DATA

JERSEY PARK CREEK - LEWIS BRANCH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FT/SEC)	REGULATORY (FEET, NAVD)	WITHOUT FLOODWAY (FEET, NAVD)	WITH FLOODWAY (FEET, NAVD)	INCREASE (FEET)
LITTLE INDIAN CREEK								
A	0.398	670	3229	3.0	677.2	676.8 ²	676.9	0.1
B	0.684	722	2886	3.4	679.1	679.1	679.2	0.1
C	0.975	551	2191	3.9	682.5	682.5	682.6	0.1
D	1.102	632	2990	2.8	683.8	683.8	683.8	0.0
E	1.561	447	1829	4.6	688.1	688.1	688.2	0.1
F	1.964	580	2513	3.4	693.4	693.4	693.4	0.0
G	2.082	950	2536	3.4	694.5	694.5	694.5	0.0
H	2.180	822	3243	2.6	695.9	695.9	696.0	0.1
I	2.293	425	1897	4.5	679.5	679.5	679.6	0.1
J	2.450	400	1640	5.2	701.1	701.1	701.2	0.1
K	2.803	560	3243	2.3	705.4	705.4	705.5	0.1
L	3.153	580	2264	3.3	708.1	708.1	708.2	0.1
M	3.352	575	2330	3.2	710.4	710.4	710.5	0.1
N	3.533	629	3368	2.2	712.2	712.2	712.3	0.1
O	3.664	231	1024	7.1	713.6	713.6	713.7	0.1
P	5.282	650	2221	2.9	734.3	734.3	734.4	0.1
Q	5.380	798	2614	2.5	736.3	736.3	736.4	0.1
R	5.518	450	1889	3.4	737.1	737.1	737.2	0.1
S	5.719	1160	2725	2.4	739.1	739.1	739.2	0.1
T	5.974	335	1200	5.4	742.2	742.2	742.3	0.1
U	6.286	445	1858	3.5	748.4	748.4	748.5	0.1
V	6.374	450	820	7.9	750.5	750.5	750.5	0.0
W	6.722	485	2374	2.7	755.6	755.6	755.6	0.0
X	7.213	287	1,156	4.5	760.1	760.1	760.2	0.1
Y	7.720	396	1742	3.0	767.5	767.5	767.6	0.1
Z	7.971	400	718	7.2	772.1	772.1	772.2	0.1

¹ MILES ABOVE CONFLUENCE WITH INDIAN CREEK

² ELEVATIONS WITHOUT CONSIDERING BACKWATER EFFECT FROM INDIAN CREEK

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY
**COUNTY OF FLOYD, IN
(AND INCORPORATED AREAS)**

FLOODWAY DATA

INDIAN CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FT/SEC)	REGULATORY (FEET, NAVD)	WITHOUT FLOODWAY (FEET, NAVD)	WITH FLOODWAY (FEET, NAVD)	INCREASE (FEET)
LITTLE INDIAN CREEK								
AA	8.179	322	1934	2.7	775.2	775.2	775.3	0.1
AB	8.268	585	2058	2.5	776.8	776.8	776.9	0.1
AC	8.434	292	1151	4.5	778.6	778.6	778.7	0.1
AD	8.596	420	1525	3.4	781.3	781.3	781.4	0.1
AE	8.703	320	1288	4.0	782.3	782.3	782.4	0.1
AF	8.854	400	1120	3.8	784.7	784.7	784.8	0.1
AG	8.894	290	1242	3.5	786.3	786.3	786.4	0.1
AH	9.124	290	1290	3.3	790.1	790.1	790.2	0.1
AI	9.441	290	1235	3.5	794.0	794.0	794.1	0.1
AJ	9.758	199	803	4.7	798.5	798.5	798.6	0.1
AK	10.021	160	672	5.6	803.3	803.3	803.4	0.1
AL	10.198	340	532	7.1	808.4	808.4	808.5	0.1
AM	10.370	257	911	4.1	812.5	812.5	812.6	0.1
AN	10.884	260	786	4.1	823.1	823.1	823.2	0.1
AO	11.438	297	990	3.2	835.4	835.4	835.5	0.1
AP	11.781	320	606	3.4	844.1	844.1	844.1	0.0
AQ	11.925	170	516	4.0	847.1	847.1	847.1	0.0

¹ MILES ABOVE CONFLUENCE WITH INDIAN CREEK

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY
COUNTY OF FLOYD, IN
(AND INCORPORATED AREAS)

FLOODWAY DATA

INDIAN CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FT/SEC)	REGULATORY (FEET, NAVD)	WITHOUT FLOODWAY (FEET, NAVD)	WITH FLOODWAY (FEET, NAVD)	INCREASE (FEET)
MIDDLE CREEK								
A	0.015	151 ²	762	4.5	447.1	428.9 ³	428.9	0.0
B	0.107	354	1414	2.4	447.1	430.1 ³	430.2	0.1
C	0.267	428	1596	2.1	447.1	431.1 ³	431.2	0.1
D	0.360	777	2240	1.5	447.1	431.6 ³	431.7	0.1
E	0.629	608	899	2.6	447.1	434.9 ³	434.9	0.0
F	0.737	81	315	7.4	447.1	439.2 ³	439.3	0.1
G	0.883	187	760	3.1	447.1	443.7 ³	443.7	0.0
H	0.967	67 ²	269	8.4	447.1	445.2 ³	445.2	0.0
I	1.023	129 ²	641	3.5	448.4	448.4	448.5	0.1
J	1.087	179	591	3.8	449.2	449.2	449.3	0.1
K	1.161	188	618	3.6	451.9	451.9	451.9	0.0
L	1.287	140	364	6.1	455.1	455.1	455.2	0.1
M	1.345	48	313	7.1	459.8	459.8	459.8	0.0
N	1.412	86	312	5.2	461.7	461.7	461.7	0.0
O	1.473	87	323	5.0	463.9	463.9	464.0	0.1
P	1.619	45	294	7.5	471.7	471.7	471.8	0.1
OHIO RIVER								
A	616.5 ⁴	3452	165564	4.9	445.6	445.6	445.7	0.1
B	615.5 ⁴	3690	172750	4.7	445.8	445.8	445.9	0.1
C	615.0 ⁴	4092	181149	4.5	446.0	446.0	446.0	0.1
D	614.0 ⁴	5607	188030	4.3	446.1	446.1	446.3	0.1
E	613.5 ⁴	5472	198250	4.1	446.3	446.3	446.4	0.1
F	613.0 ⁴	5836	209485	3.9	446.4	446.4	446.5	0.1
G	612.0 ⁴	4575	192809	4.2	446.6	446.6	446.7	0.1
H	611.0 ⁴	3787	160239	5.1	446.7	446.7	446.8	0.1
I	610.0 ⁴	2317	142227	5.7	447.0	447.0	447.1	0.1
J	609.5 ⁴	3460	154967	5.2	447.1	447.1	447.3	0.1

¹ MILES ABOVE STATE ROUTE 111

² THE FLOODWAY SHOWN ON THE FIRM HAS BEEN WIDENED BEYOND THIS VALUE FOR ADMINISTRATIVE PURPOSES

³ ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM OHIO RIVER

⁴ MILES BELOW PITTSBURGH

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

**COUNTY OF FLOYD, IN
(AND INCORPORATED AREAS)**

FLOODWAY DATA

MIDDLE CREEK - OHIO RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FT/SEC)	REGULATORY (FEET, NAVD)	WITHOUT FLOODWAY (FEET, NAVD)	WITH FLOODWAY (FEET, NAVD)	INCREASE (FEET)
OHIO RIVER								
K	609.0 ¹	3758	164420	4.9	447.3	447.3	447.5	0.1
L	608.5 ¹	3079	148188	5.5	447.4	447.4	447.5	0.1
M	607.5 ¹	3008	161564	5.0	447.7	447.7	447.9	0.1
SILVER CREEK								
A	4.692 ²	58 ³	6043	4.2	448.1	439.4 ⁴	439.5	0.1
B	4.980 ²	516 ³	5154	4.9	448.1	440.6 ⁴	440.7	0.1
C	5.390 ²	1138 ³	11815	2.2	448.1	442.0 ⁴	442.1	0.1
D	5.850 ²	532 ³	6437	4.0	448.1	442.6 ⁴	442.7	0.1
E	6.120 ²	1253 ³	6931	3.7	448.1	442.8 ⁴	442.9	0.1
F	6.510 ²	1465 ³	14603	1.7	448.1	444.8 ⁴	444.8	0.0
G	7.000 ²	984 ³	5,997	4.2	448.1	445.5 ⁴	445.5	0.0
H	7.270 ²	397 ³	3524	7.2	448.1	447.7 ⁴	447.7	0.0
I	7.591 ²	559 ³	6103	4.2	451.6	451.6	451.7	0.1
J	8.000 ²	365 ³	4813	5.3	452.9	452.9	453.0	0.1

¹ MILES BELOW PITTSBURGH

² MILES ABOVE OHIO RIVER

³ THIS WIDTH EXTENDS BEYOND COUNTY BOUNDARY

⁴ ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM OHIO RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

**COUNTY OF FLOYD, IN
(AND INCORPORATED AREAS)**

FLOODWAY DATA

OHIO RIVER - SILVER CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	AREA (SQ. FEET)	VELOCITY (FT/SEC)	REGULATORY (FEET, NAVD)	FLOODWAY (FEET, NAVD)	FLOODWAY (FEET, NAVD)	INCREASE (FEET)
VINCENNES RUN								
A	0.189	89	324	2.8	447.1	433.6 ³	433.7	0.1
B	0.276	35 ²	130	6.9	447.1	435.0 ³	435.1	0.1
C	0.402	43 ²	150	5.9	447.1	438.0 ³	438.1	0.1
D	0.438	181 ²	751	1.2	447.1	443.3 ³	443.3	0.0
E	0.546	135	289	2.5	447.1	444.4 ³	444.5	0.1
F	0.607	33	110	6.6	447.1	445.7 ³	445.7	0.0
G	0.725	359	1306	0.6	454.8	454.8	454.9	0.1
H	0.777	78	213	3.4	455.9	455.9	456.0	0.1
I	0.835	154	147	5.0	458.7	458.7	458.8	0.1
J	0.905	131 ²	281	2.4	464.8	464.8	464.8	0.0
K	0.985	30	106	6.2	469.0	469.0	469.1	0.1
L	1.030	37	111	5.9	470.9	470.9	471.0	0.1
YELLOW FORK								
A	0.190 ⁴	341	1057	3.1	703.9	703.9	704.0	0.1
B	0.340 ⁴	156	955	3.4	706.1	706.1	706.2	0.1
C	0.602 ⁴	100	512	6.3	713.1	713.1	713.2	0.1
D	0.795 ⁴	211	976	3.3	719.7	719.7	719.8	0.1

¹ MILES ABOVE CONFLUENCE WITH MIDDLE CREEK

² THE FLOODWAY SHOWN ON THE FIRM HAS BEEN WIDENED BEYOND THIS VALUE FOR ADMINISTRATIVE PURPOSES

³ ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM OHIO RIVER

⁴ MILES ABOVE CONFLUENCE WITH INDIAN CREEK

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

**COUNTY OF FLOYD, IN
(AND INCORPORATED AREAS)**

FLOODWAY DATA

VINCENNES RUN - YELLOW FORK

5.0 INSURANCE APPLICATIONS

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. These zones are as follows:

Zone A

Zone A is the flood insurance risk zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no BFEs or base flood depths are shown within this zone.

Zone AE

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

Zone AH

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

Zone AO

Zone AO is the flood insurance risk zone that corresponds to the areas of 1-percent-annual-chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot base flood depths derived from the detailed hydraulic analyses are shown within this zone.

Zone AR

Zone AR is the flood insurance risk zone that corresponds to an area of special flood hazard formerly protected from the 1-percent-annual-chance flood event 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-percent-annual-chance or greater flood event.

Zone A99

Zone A99 is the flood insurance risk zone that corresponds to areas of the 1-percent-annual-chance floodplain that will be protected by a Federal flood protection system

where construction has reached specified statutory milestones. No BFEs or depths are shown within this zone.

Zone V

Zone V is the flood insurance risk zone that corresponds to the 1-percent-annual-chance coastal floodplains that have additional hazards associated with storm waves. Because approximate hydraulic analyses are performed for such areas, no BFEs are shown within this zone.

Zone VE

Zone VE is the flood insurance risk zone that corresponds to the 1-percent-annual-chance coastal floodplains that have additional hazards associated with storm waves. Whole-foot BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

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

Zone X (Future Base Flood)

Zone X (Future Base Flood) is the flood insurance risk zone that corresponds to the 1-percent-annual-chance floodplains that are determined based on future-conditions hydrology. No BFEs or base flood depths are shown within this zone.

Zone D

Zone D is the flood insurance risk zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.

6.0 FLOOD INSURANCE RATE MAP

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

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

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

The current FIRM presents flooding information for the entire geographic area of Floyd County. Previously, separate FIRMs were prepared for each identified flood prone incorporated community and for the unincorporated areas of the county. Historical data relating to the maps prepared for each community are presented in Table 8.

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
Floyd County (Unincorporated Areas)	January 27, 1978	None	January 2, 1981	January 2, 1981
Georgetown, Town of	December 21, 1973	None	March 28, 1980	March 28, 1980
Greenville, Town of	March 21, 1973	none	none	none
New Albany, City of	February 15, 1974	None	December 17, 1976	#####

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

**FLOYD COUNTY, IN
(ALL JURISDICTIONS)**

COMMUNITY MAP HISTORY

7.0 OTHER STUDIES

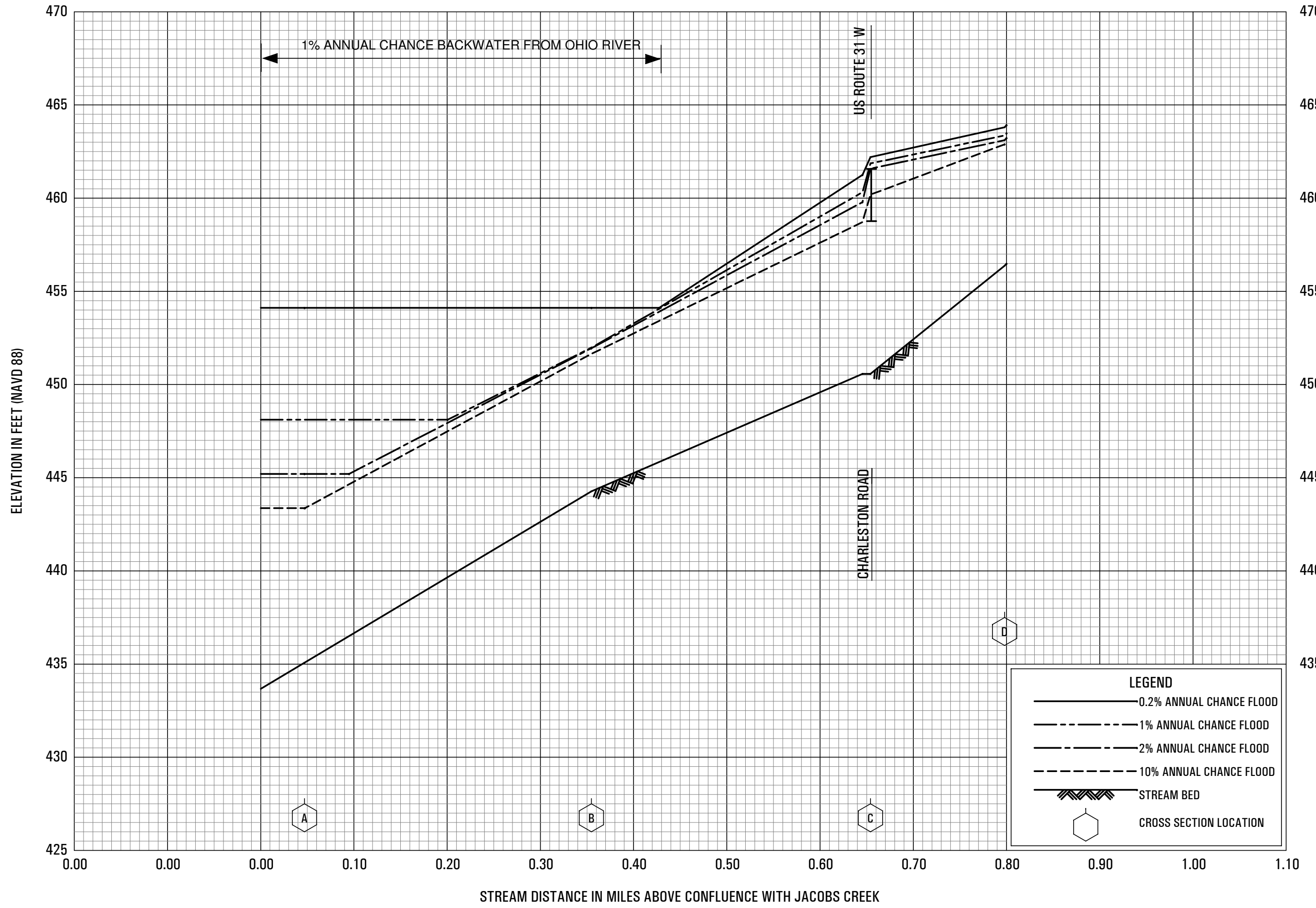
This FIS report either supersedes or is compatible with all previous studies on streams studied in this report and should be considered authoritative for purposes of the NFIP.

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting the Flood Insurance and Mitigation Division, Federal Emergency Management Agency, Region V, 536 S. Clark Street, 6th Floor, Chicago, IL 60605

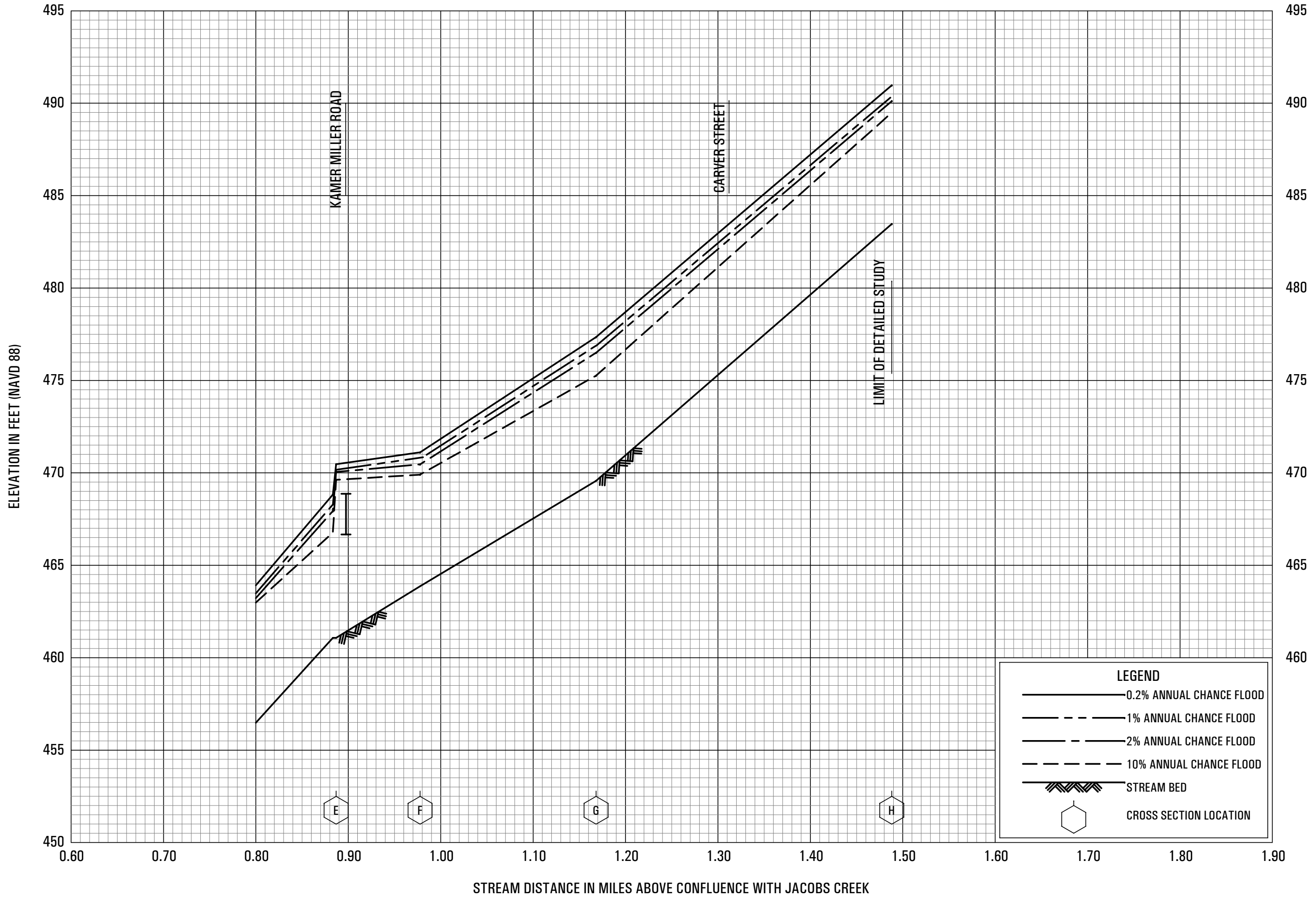
9.0 BIBLIORAPHY AND REFERENCES

1. Federal Emergency Management Agency, Flood Insurance Study, County of Floyd Indiana, Unincorporated Areas, IN, July 1980.
2. Federal Emergency Management Agency, Flood Insurance Study, City of New Albany, Indiana, September 2000.
3. Federal Emergency Management Agency, Flood Insurance Study, Town of Georgetown, Indiana, September 1979.
4. "Population Counts, Estimates and Projections", STATS Indiana, Indiana Business Research Center, Indiana University Kelley School of Business, accessed at www.stats.indiana.edu/pop_totals_topic_page.html.
5. National Oceanic and Atmospheric Administration, National Climatic Data Center, Monthly Station Normals of Temperature, Precipitation, and Heating and Cooling Days, 1971-2000, Climatography of the United States No. 81, 2002.
6. U.S. Army Corps of Engineers, *HEC-2 Water-Surface Profiles Computer Program 723-X6, L202A*, Davis, California, November 1976.
7. U.S. Department of the Interior, Geological Survey, Water Resources Investigation 35-75, Statistical Summaries of Indiana Streamflow Data, February 1976.
8. Indiana Flood Control Act of 1973, Chapter 318, Acts 1945 as found in IC-1971-13-2-22 and amended by PL 122 Act 1973 and HEA 1156 Acts of 1976.
9. Indiana Flood Plain Act of 1973, PL 123 Act 1973, Senate Bill 75, (approved April 17, 1973).
10. Geobytes City Distance Tool. <<http://www.geobytes.com/CityDistanceTool.htm>>.
11. U.S. Geological Survey, Surface-Water Data for Indiana, Peak-Flow Data for Floyd County. <http://nwis.waterdata.usgs.gov/in/nwis/peak>.
12. Federal Emergency Management Agency, Flood Insurance Study, County of Clark Indiana, Unincorporated Areas, IN,



FLOOD PROFILES
BALD KNOB CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
COUNTY OF FLOYD, IN
AND INCORPORATED AREAS

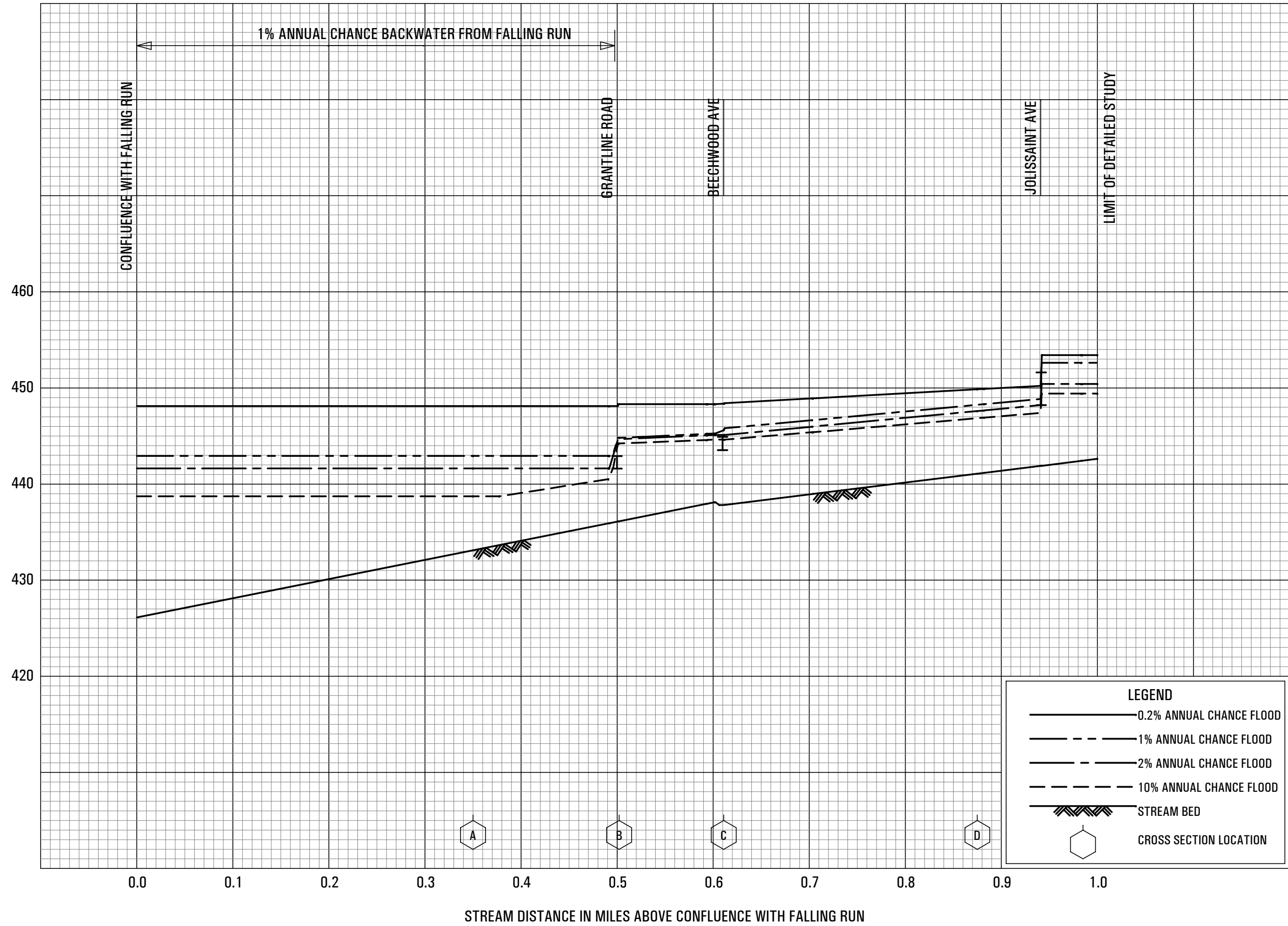


FLOOD PROFILES

BALD KNOB CREEK

**FEDERAL EMERGENCY MANAGEMENT AGENCY
COUNTY OF FLOYD, IN
AND INCORPORATED AREAS**

ELEVATION IN FEET (NAVD 88)

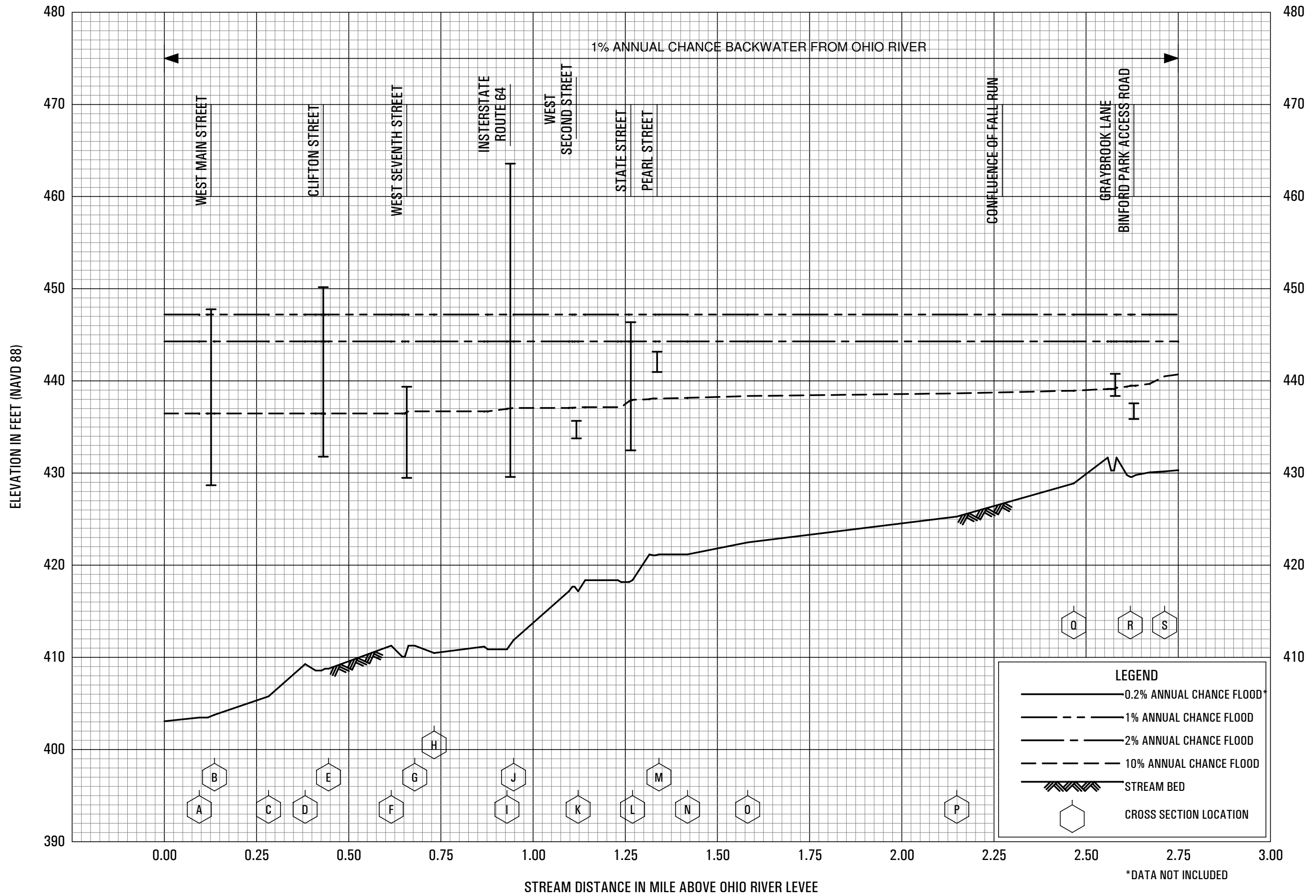


FLOOD PROFILES

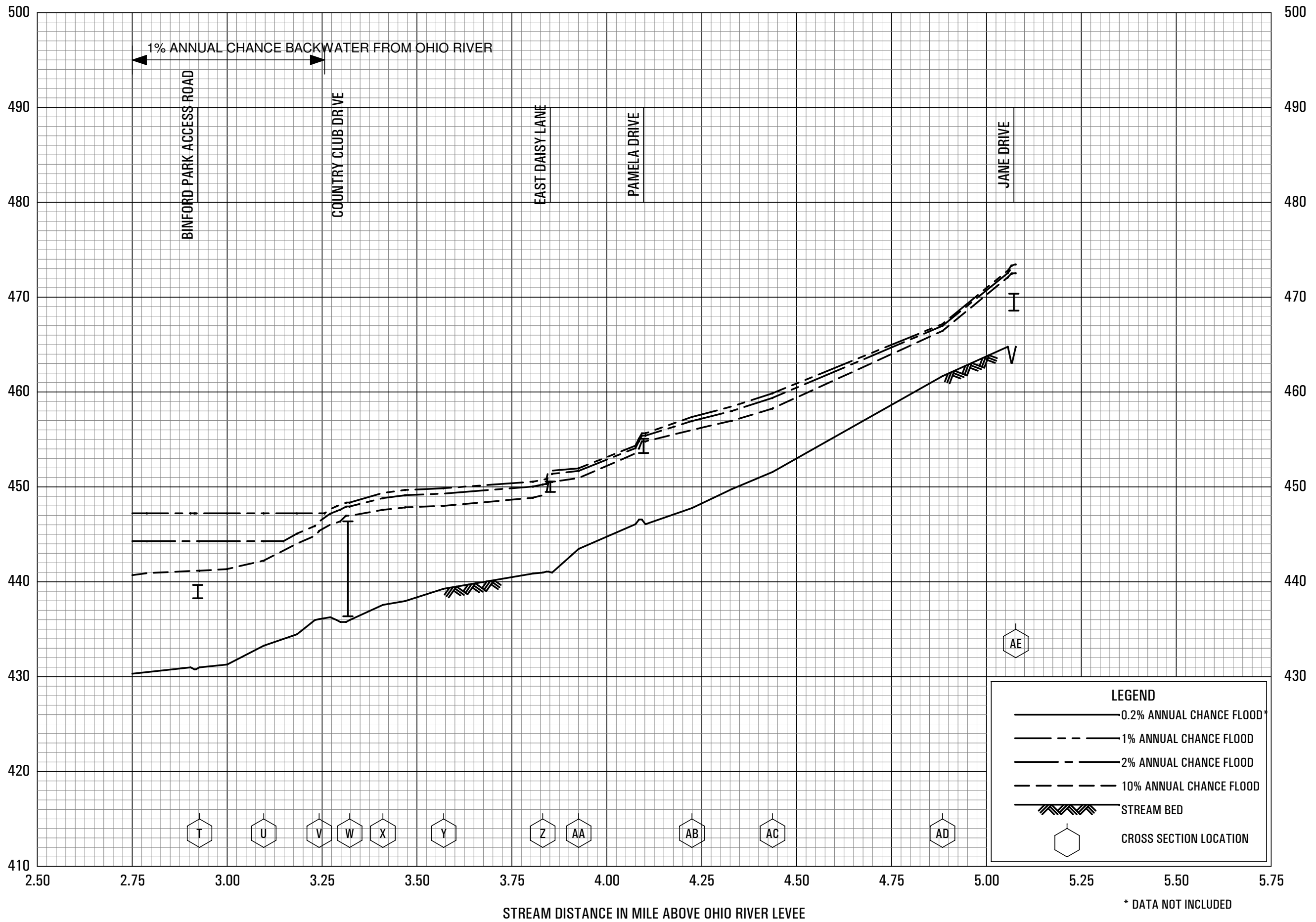
FALL RUN

FEDERAL EMERGENCY MANAGEMENT AGENCY
COUNTY OF FLOYD, IN
AND INCORPORATED AREAS

03P



ELEVATION IN FEET (NAVD 88)

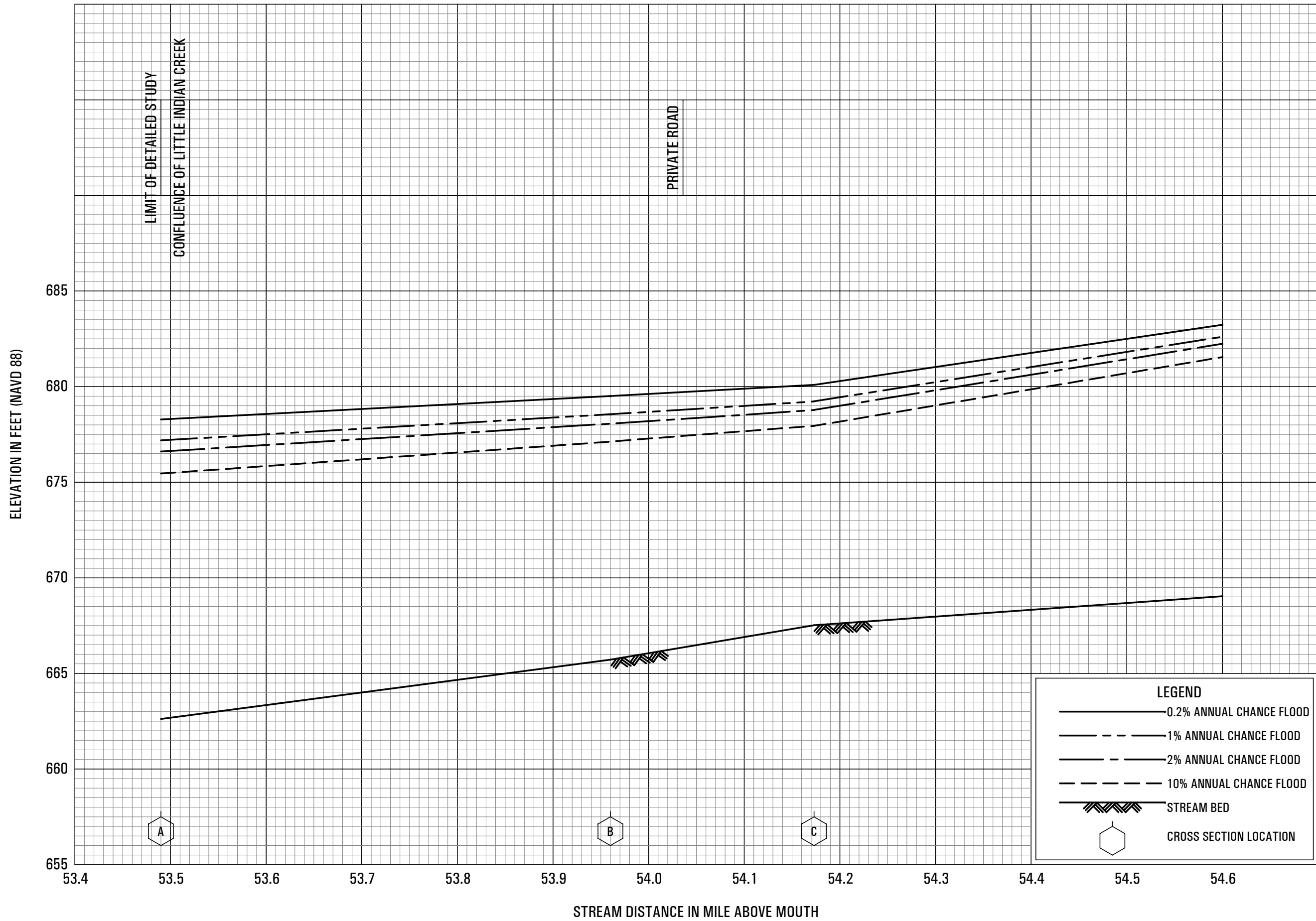


FLOOD PROFILES

FALLING RUN

FEDERAL EMERGENCY MANAGEMENT AGENCY
COUNTY OF FLOYD, IN
AND INCORPORATED AREAS

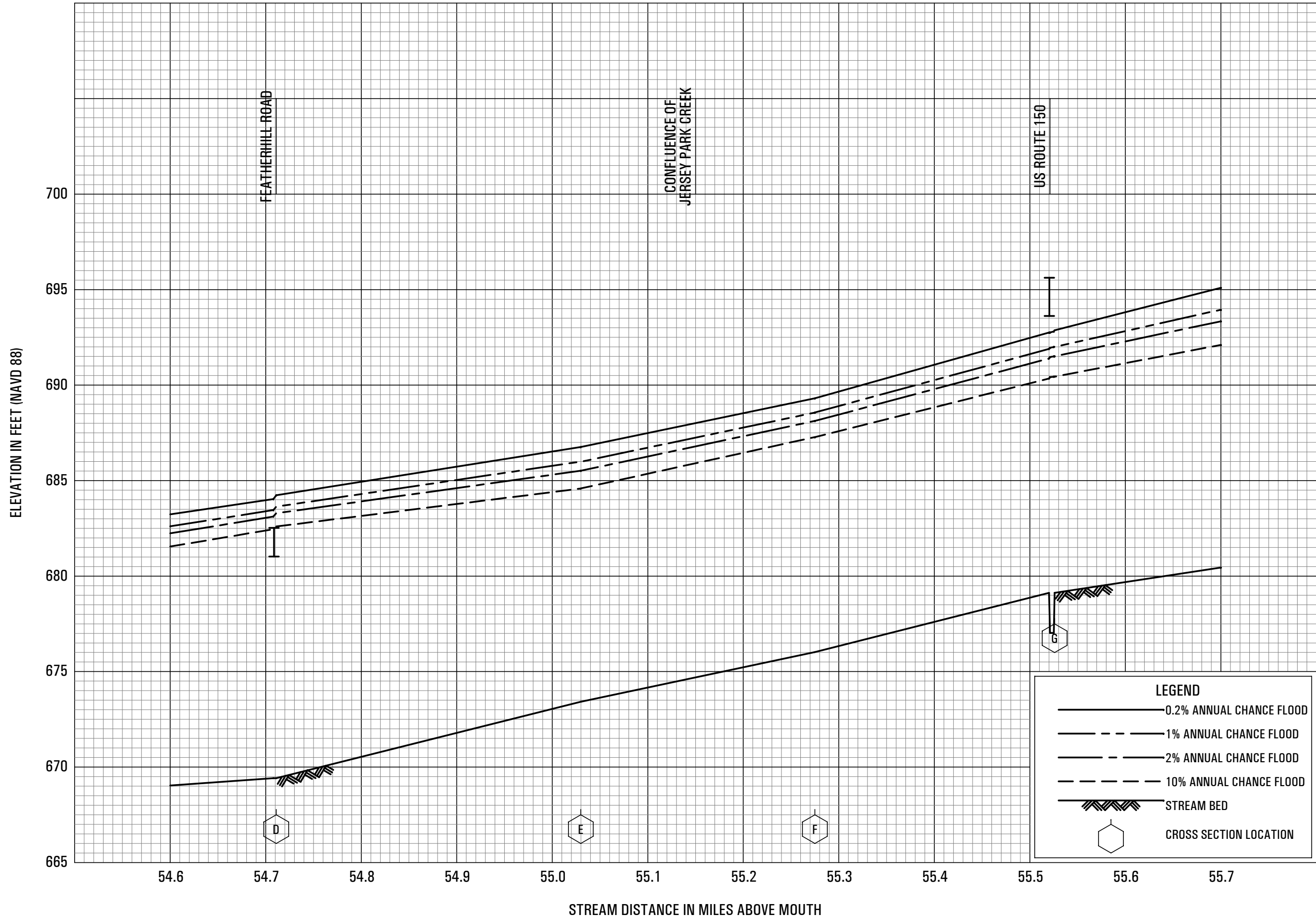
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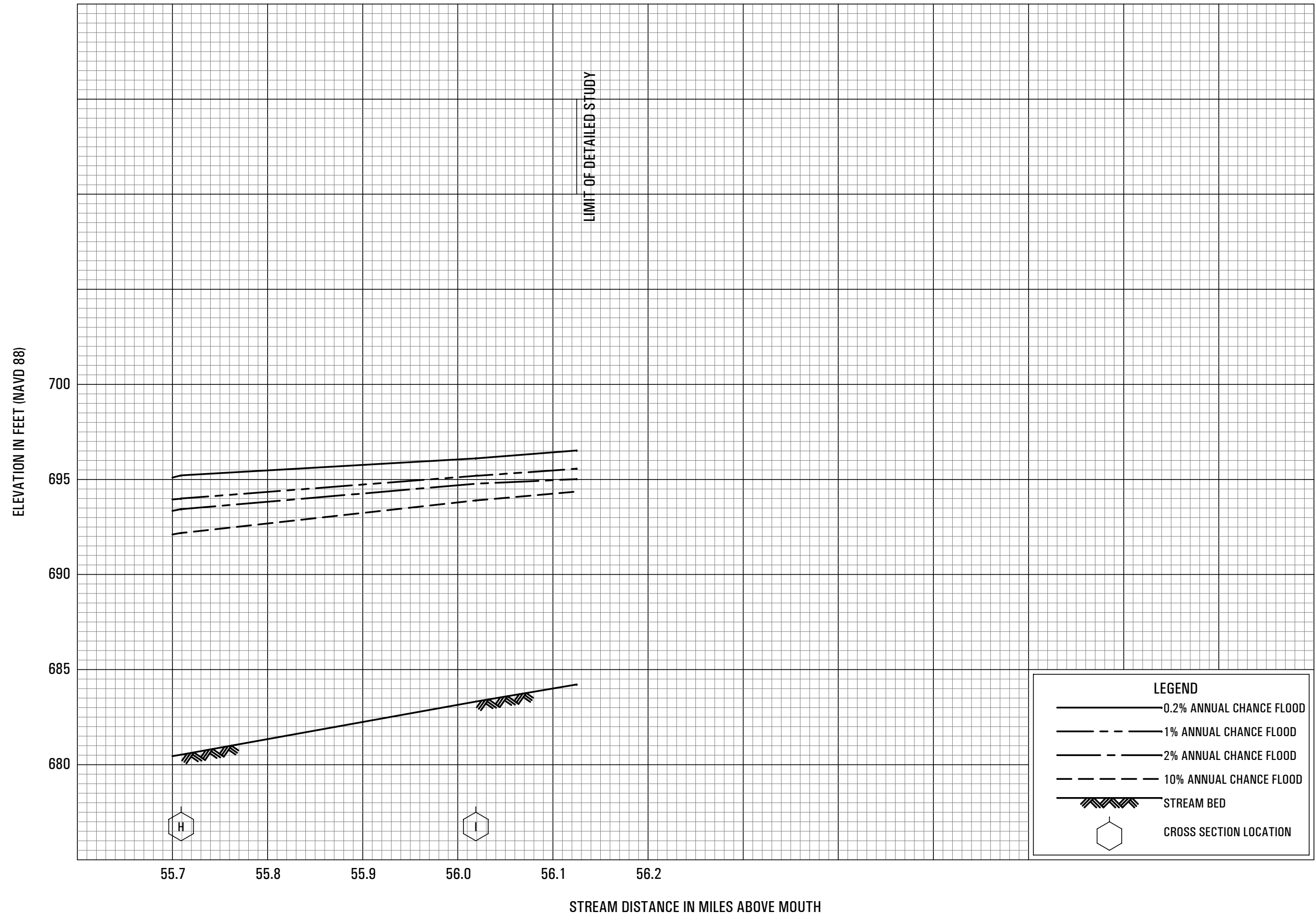


FLOOD PROFILES

INDIAN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
COUNTY OF FLOYD, IN
 AND INCORPORATED AREAS

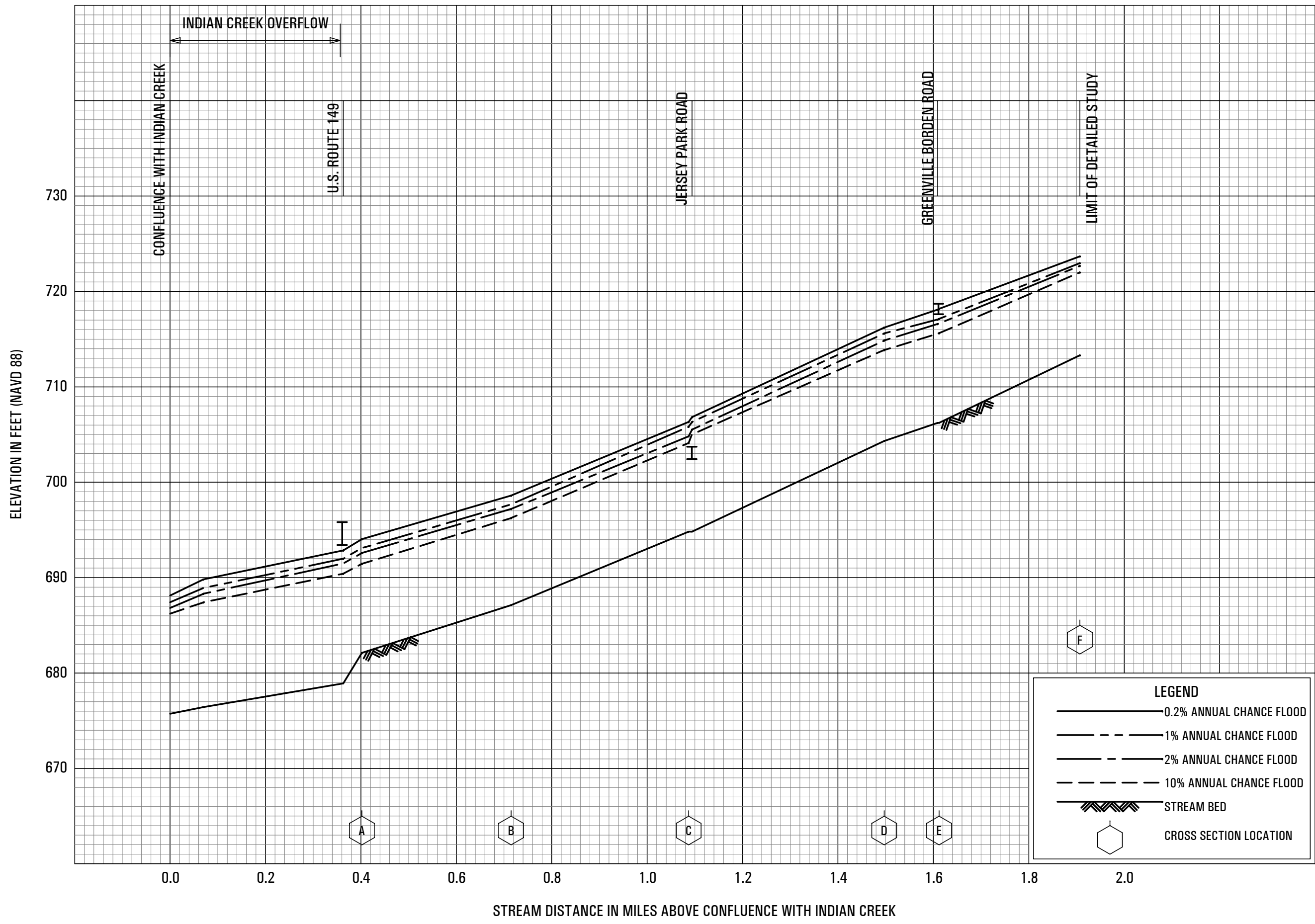




FLOOD PROFILES

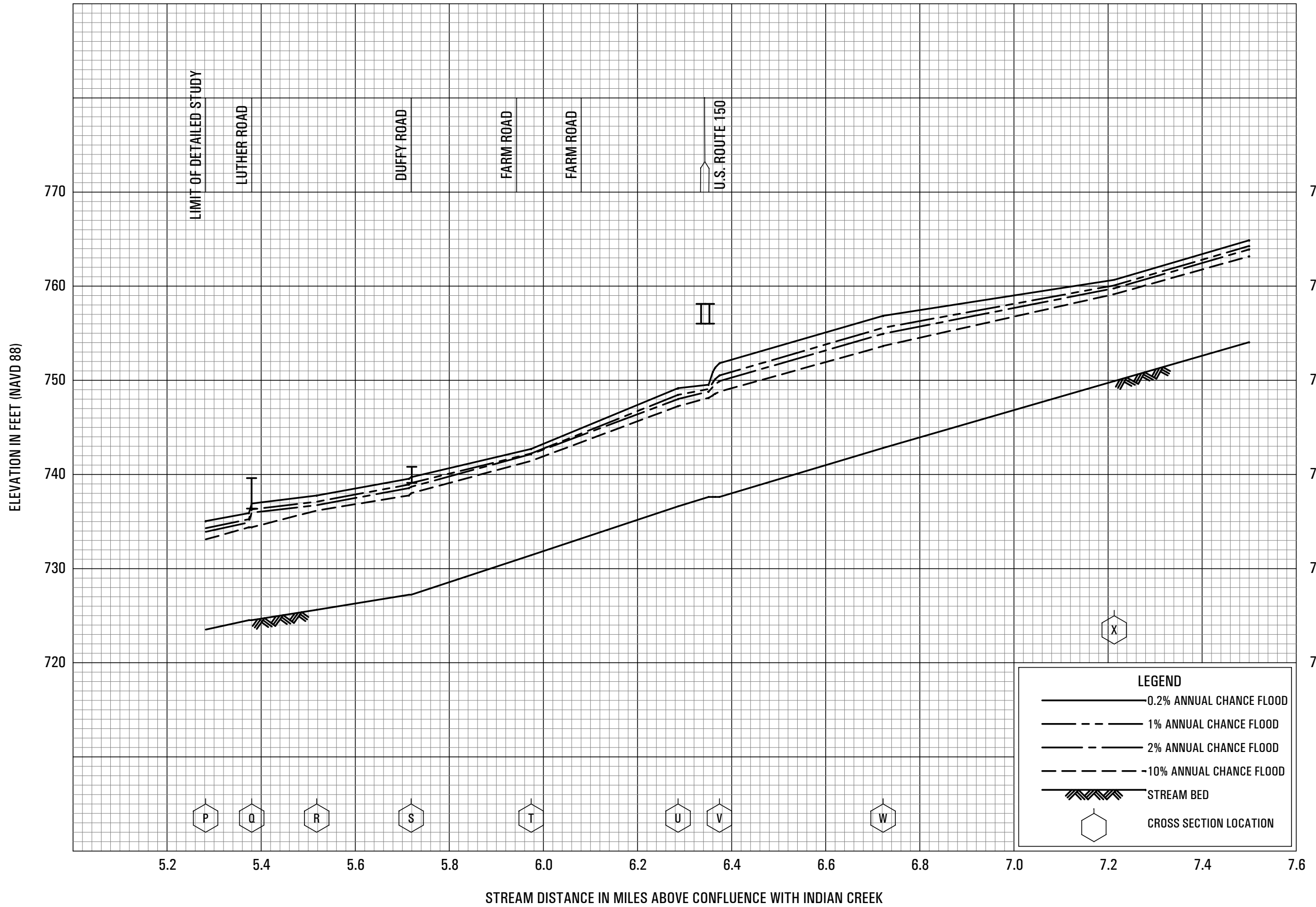
INDIAN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
COUNTY OF FLOYD, IN
 AND INCORPORATED AREAS



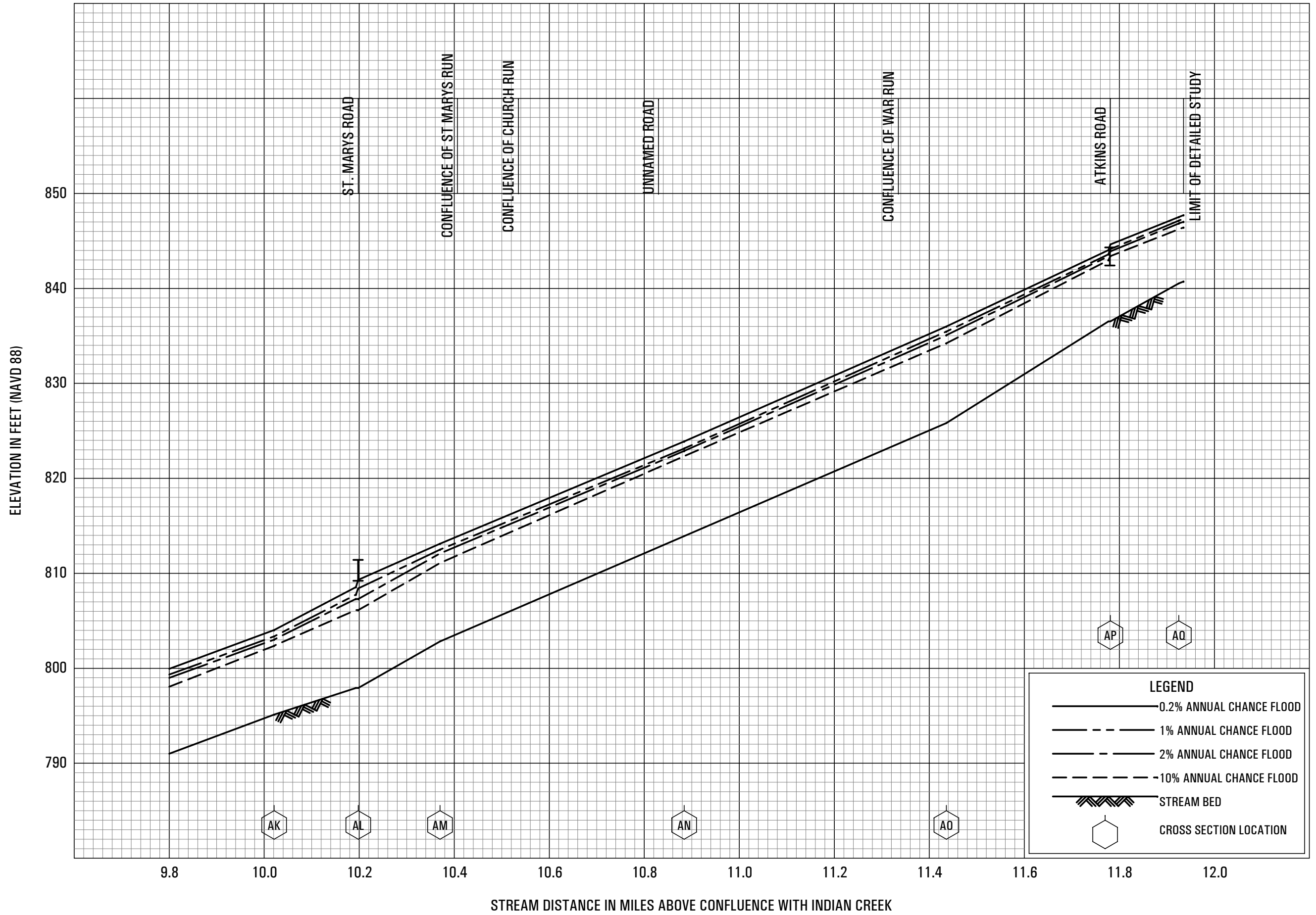
FLOOD PROFILES
JERSEY PARK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
COUNTY OF FLOYD, IN
 AND INCORPORATED AREAS



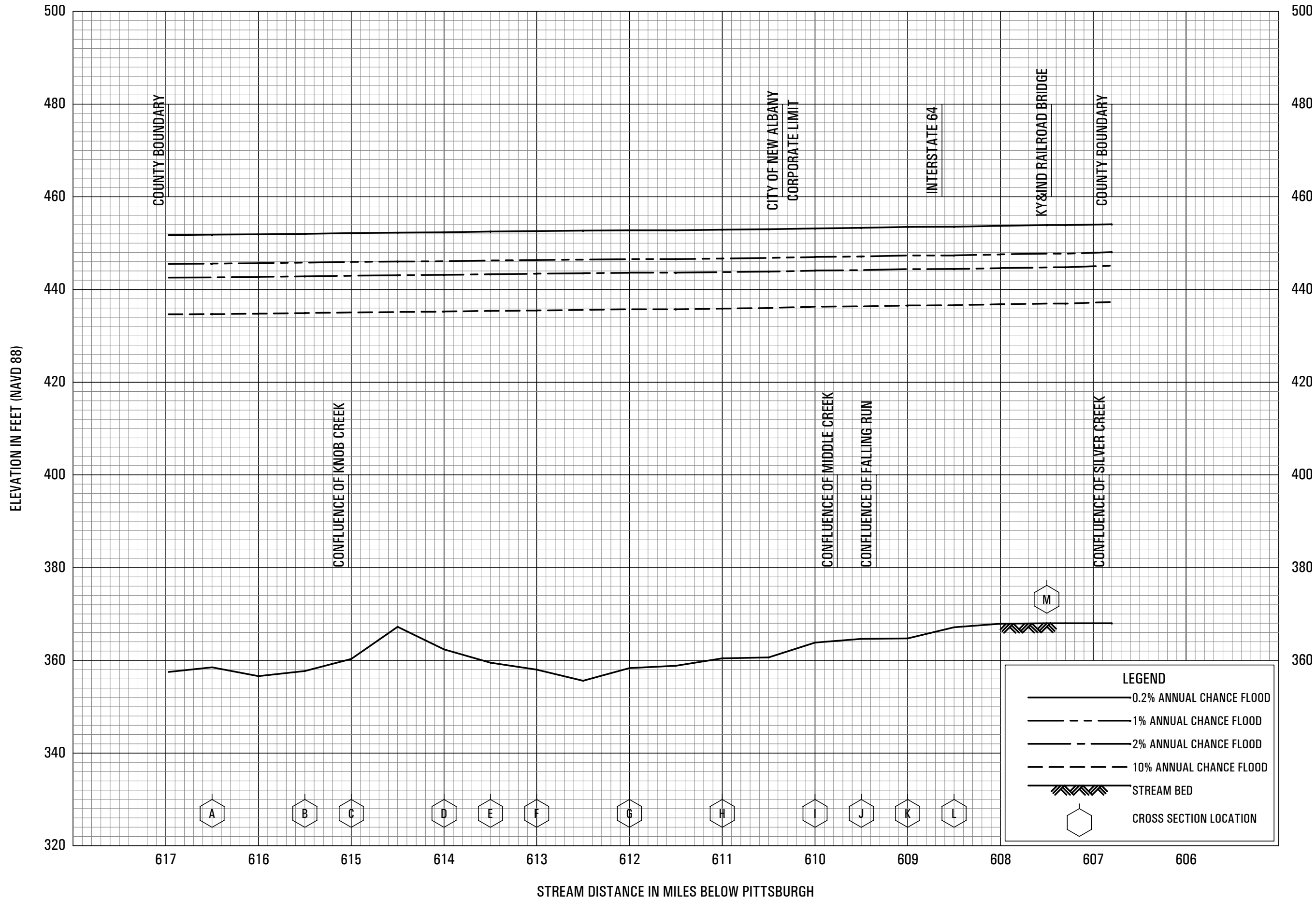
FLOOD PROFILES
LITTLE INDIAN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
COUNTY OF FLOYD, IN
AND INCORPORATED AREAS



FLOOD PROFILES
LITTLE INDIAN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
COUNTY OF FLOYD, IN
AND INCORPORATED AREAS



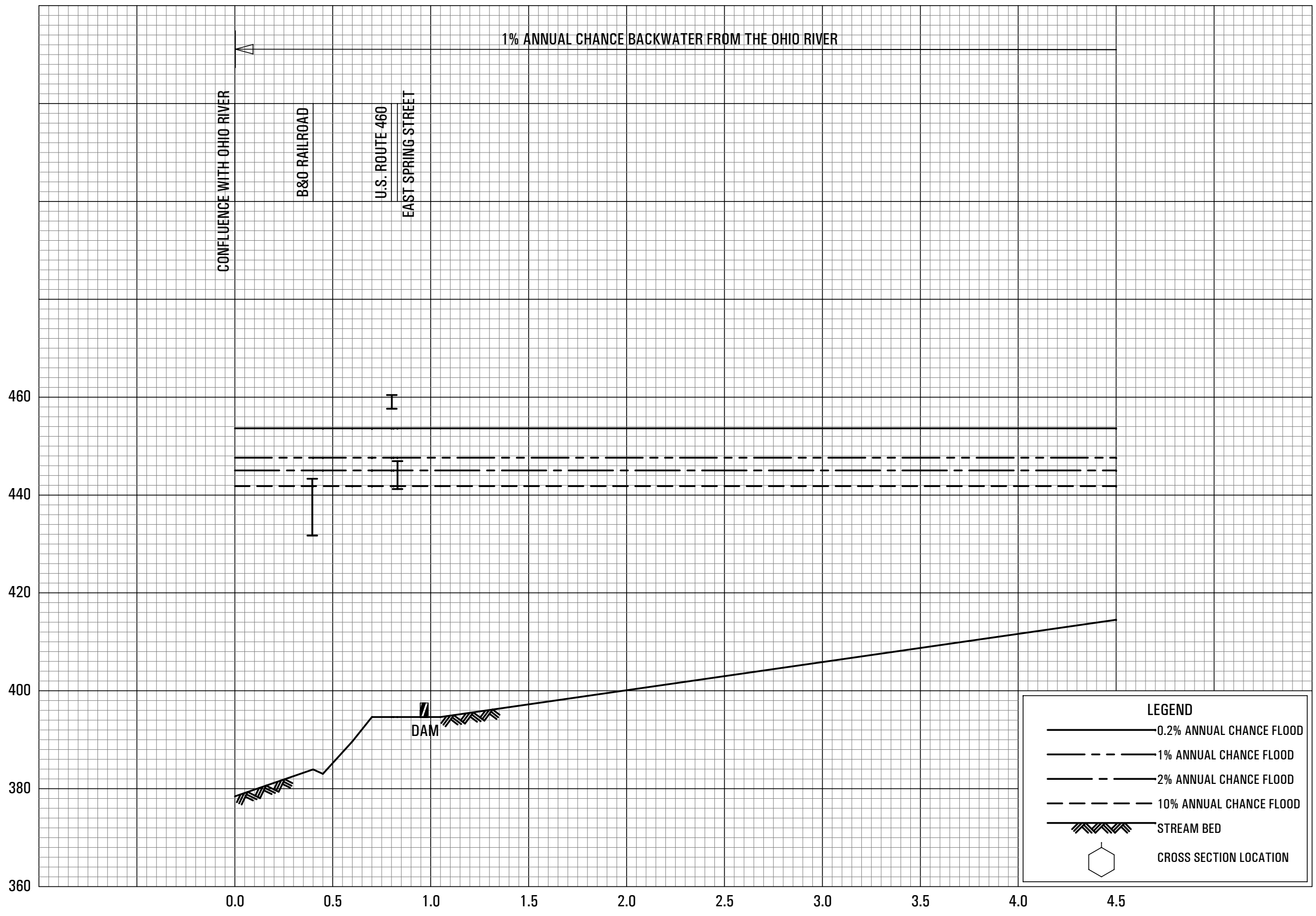
FLOOD PROFILES

OHIO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

**FLOYD COUNTY, IN
AND INCORPORATED AREAS**

ELEVATION IN FEET (NAVD 88)



STREAM DISTANCE IN MILES ABOVE MOUTH

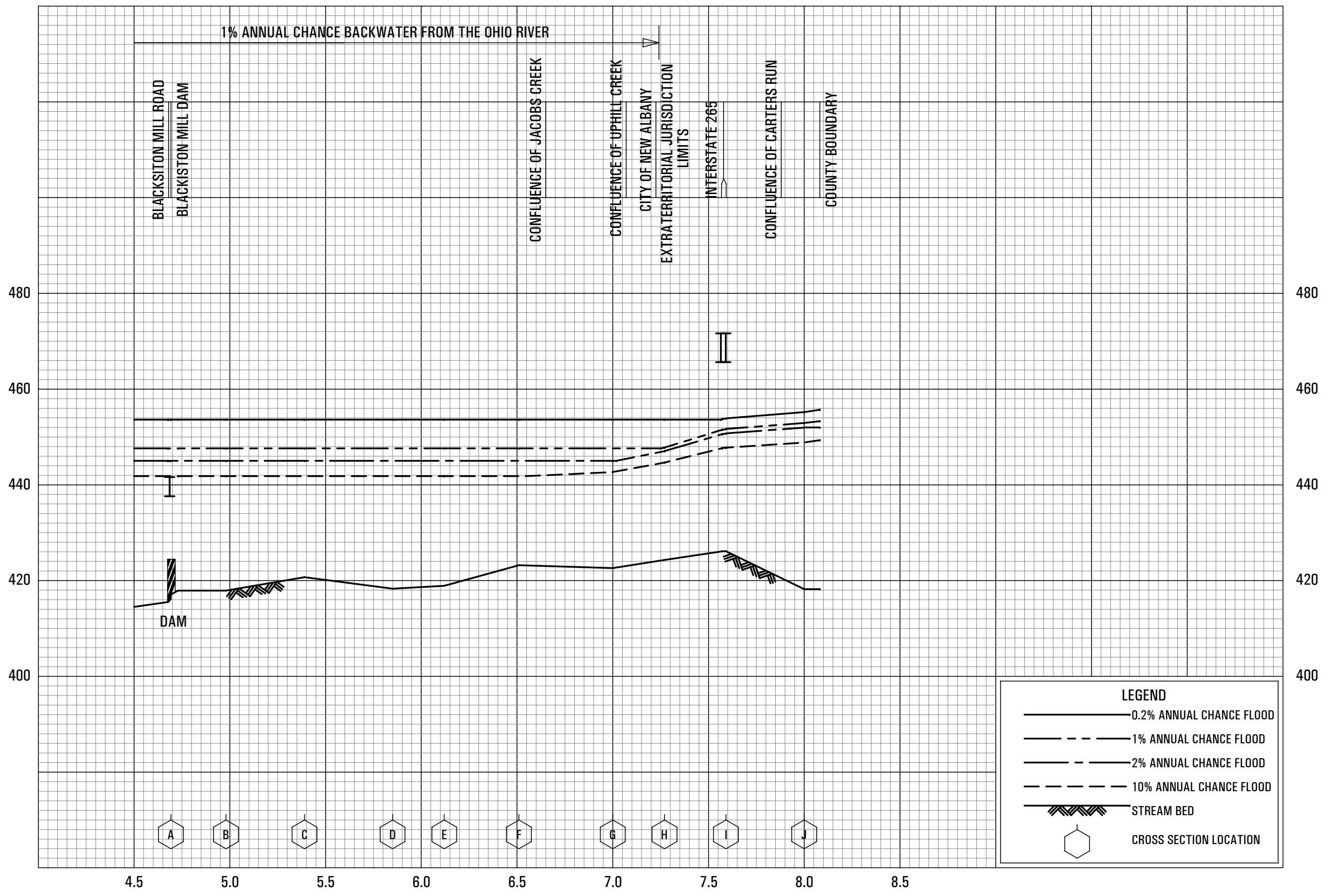
FLOOD PROFILES

SILVER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
COUNTY OF FLOYD, IN
AND INCORPORATED AREAS

22P

ELEVATION IN FEET (NAVD 88)

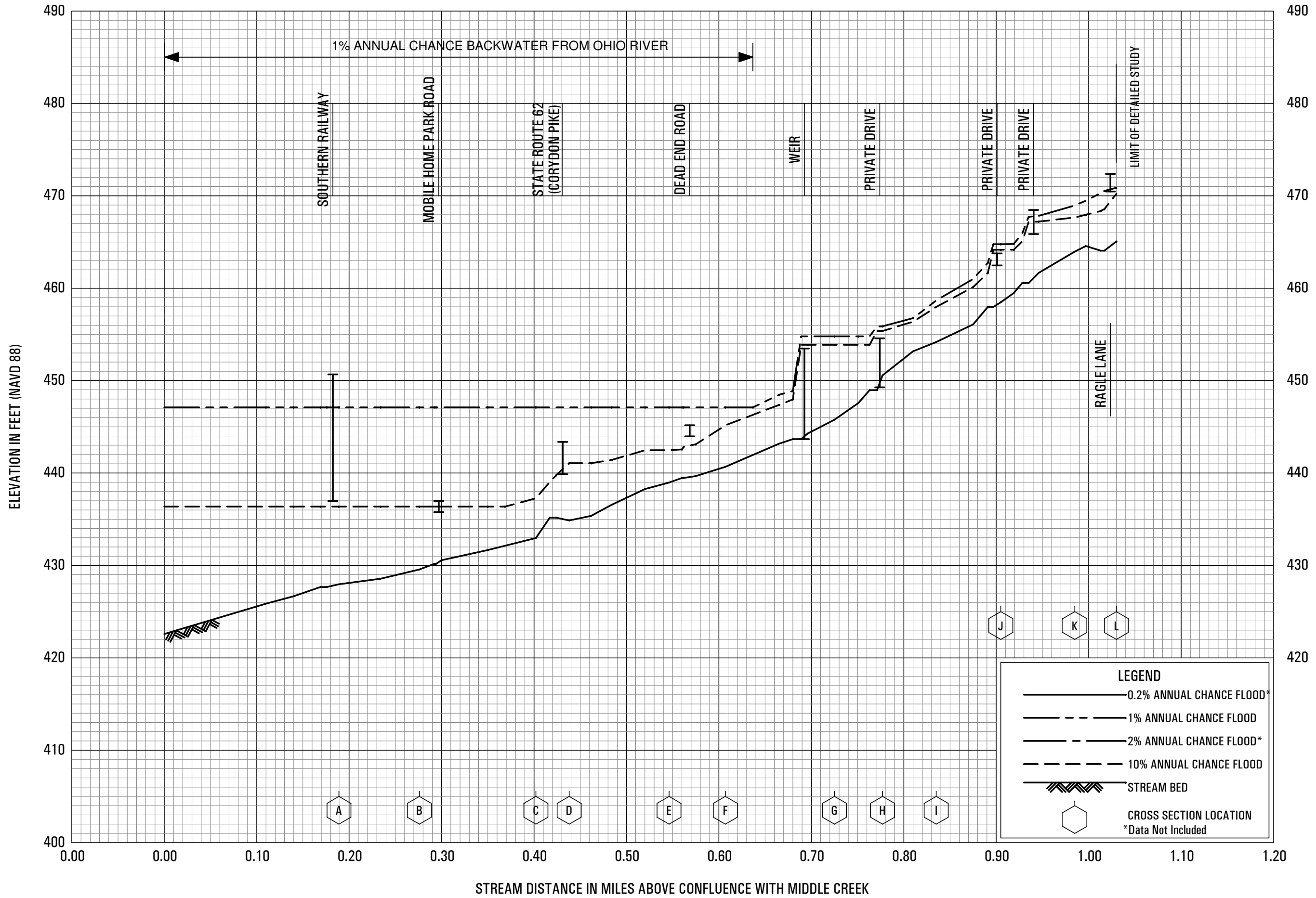


STREAM DISTANCE IN MILES ABOVE MOUTH

FLOOD PROFILES

SILVER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
COUNTY OF FLOYD, IN
AND INCORPORATED AREAS



FLOOD PROFILES
VINCENNES RUN

FEDERAL EMERGENCY MANAGEMENT AGENCY
COUNTY OF FLOYD, IN
AND INCORPORATED AREAS

ELEVATION IN FEET (NAVD 88)

725
720
715
710
705
700
695
690
685

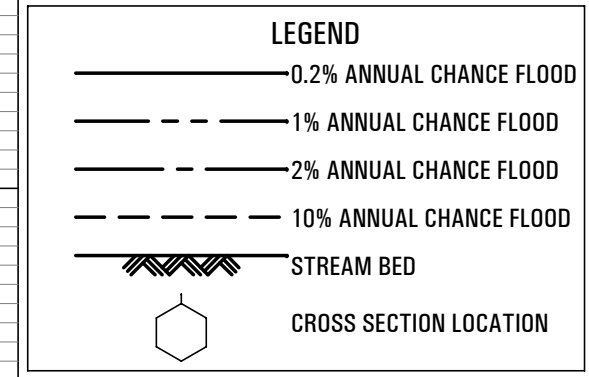
0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8

STREAM DISTANCE IN MILES ABOVE CONFLUENCE WITH LITTLE INDIAN CREEK

CONFLUENCE WITH LITTLE INDIAN CREEK

OLD VINGENNES ROAD

LIMIT OF DETAILED STUDY



725
720
715
710
705
700
695

FLOOD PROFILES
YELLOW FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY
COUNTY OF FLOYD, IN
AND INCORPORATED AREAS

25P