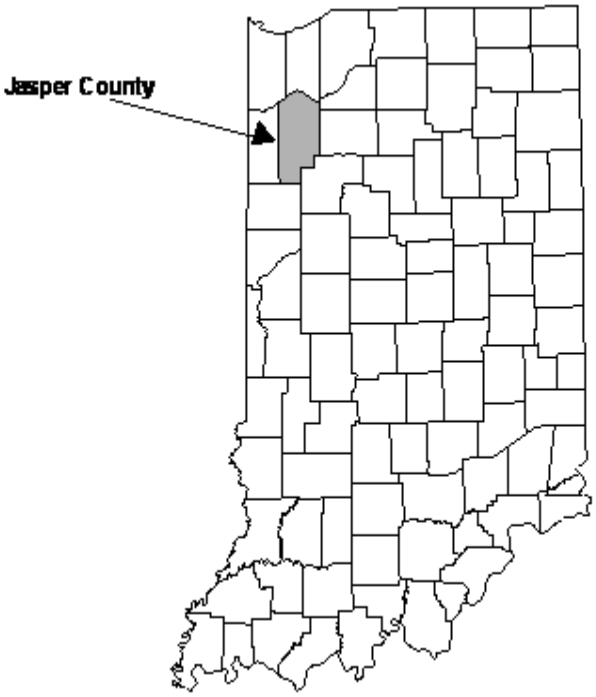
FLOOD INSURANCE STUDY

JASPER COUNTY, INDIANA
AND INCORPORATED AREAS



COMMUNITY NAME	COMMUNITY NUMBER
DEMOTTE, TOWN OF	180100
JASPER COUNTY (Unincorporated Areas)	180439
REMINGTON, TOWN OF	180101
RENSSELAER, CITY OF	180102
WHEATFIELD, TOWN OF	180379

Revised Preliminary
April 12, 2016

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
18073CV000A

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.

Selected Flood Insurance Rate Map panels for this community contain information that was previously shown separately on the corresponding Flood Boundary and Floodway Map panels (e.g., floodways, cross sections). In addition, former flood hazard zone designations have been changed as follows:

Old Zone:	New Zone:
A1 through A30	AE
B	X (shaded)
C	X

Initial Countywide FIS Effective Date:

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EXHIBITS

Exhibit 1 - Flood Profiles Panel #s

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Hickam Lateral 05P
Kankakee River 06P
Wolf Creek 07-08P

Exhibit 2 - Flood Insurance Rate Map Index

Flood Insurance Rate Map

FLOOD INSURANCE STUDY

JASPER 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 Jasper County, Indiana, including the City of Rensselaer, the Towns of Demotte, Remington, and Wheatfield, and the unincorporated areas of Jasper County (hereinafter referred to collectively as Jasper 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 Jasper 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.

The Digital Flood Insurance Rate Map (DFIRM) and FIS report for this countywide study have been produced in digital format. Flood hazard information was converted to meet the Federal Emergency Management Agency (FEMA) DFIRM database specifications and Geographic Information System (GIS) format requirements. The flood hazard information was created and is provided in a digital format so that it can be incorporated into local GIS and be accessed more easily by the community.

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 Jasper County was compiled and is shown below:

Pre-Countywide Analyses: The hydrologic and hydraulic analyses for this study were performed by the U.S. Department of Agriculture, for the Federal Insurance Administration, under Contract No. H-4013. This work, which was completed in September 1986, covered all significant flooding sources affecting the incorporated areas of Demotte, Remington, Rensselaer and Wheatfield in Jasper County.

Countywide FIS Report: The hydrologic and hydraulic analyses for approximate stream reaches of Jasper County were performed by Lawson-Fisher Associates, on behalf of the Indiana Department of Natural Resources, under Indiana Public Works Project No. E060022. The Indiana Department of Natural Resources (IDNR) managed the production of this study as part of their Cooperating Technical Partner (CTP) agreement with the FEMA dated April 29, 2004, which was defined by the Indiana DNR Mapping Activity Statement 08-01 dated July 7, 2008 and funded under agreement number EMC-2006-GR-7016.

Redelineation of the previously effective flood hazard information for this FIS report, correction to the North American Vertical Datum of 1988 (NAVD88), and conversion of the unincorporated and incorporated areas of Jasper County into the Countywide format was performed by Lawson-Fisher Associates, on behalf of the IDNR, under Indiana Public Works Project Number E060022. The IDNR managed the production of this study as part of their CTP agreement with FEMA dated April 29, 2004, which was defined by the Indiana DNR Mapping Activity Statement 08-01 dated July 7, 2008 and funded under agreement number EMC-2006-GR-7016.

1.3 Coordination

The purpose of an initial Consultation Coordinated Officer's (CCOs) 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 Jasper County, Indiana are shown in Table 1 (Reference 1). The initial and final CCO meetings were attended by the study contractor, United Stated Soil Conservation Service (SCS) the IDNR, and the affected communities.

Table 1: CCO Meeting Dates for Pre-Countywide FIS

Community Name	Initial CCO Date	Final CCO Date
Jasper County (Unincorporated Areas)	January 21, 1982	September 1986

For this countywide FIS, an initial CCO meeting was held on November 27, 2007, and was attended by IDNR, the Jasper County Plan Commission, the Jasper County Surveyor, and the City of Rensselaer.

The results of the countywide study were reviewed at the final CCO meeting held on _____, and attended by representatives of FEMA, IDNR and representatives from Jasper County and Town of DeMotte. 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 Jasper County, Indiana, including the incorporated communities listed in Section 1.1.

All FIRM panels for Jasper 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, five (5) new stream reaches were studied using approximate methods. The scope and methods of new approximate studies were proposed and agreed upon by FEMA, the IDNR, and Jasper County.

This FIS update also incorporates the determination of letters issued by FEMA resulting in map changes (Letters of Map Change, or LOMC's). No Letters of Map Revision (LOMR's) have been issued for Jasper County. 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: Streams Studied by Pre-Countywide Analyses

Approximate Studies	
Bice Ditch	Bruner Ditch
Carpenter Creek	Cook Ditch
Curtis Creek	Dehaan Ditch
Hodge Ditch	Iroquois River
James Ditch	Kankakee River
Oliver Ditch	Ryan Ditch
Slough Creek	Tyler Ditch

Table 3: Scope of Study

Stream	Limits of Redelineation Study
Iroquois River	Newton County Line to Oliver Ditch
Kankakee River	W. Porter Co. Line to E. Porter Co. Line

Stream	Limits of Approximate Study
Curtis Creek	Iroquois River to Benton County Line
Davisson Ditch	Iroquois River to Louisville-Nashville RR
Evers Ditch	Dehaan Ditch to CR 1100N
Oliver Ditch	Iroquois River to Folger Ditch
Prouty Ditch	Iroquois River to County Road
Ryan Ditch	Iroquois River to Makever Huff Drain
Slough Creek	Iroquois River to Tyler Ditch
Tyler Ditch	CR 1000 W to CR 700 W

Stream	Limits of Detailed Study
Carpenter Creek	Iroquois River to Benton County Line
Hickam Lateral	Wolf Creek to CR 1100 N
Wolf Creek	CR 1450 N to CR 200 W

2.2 Community Description

Jasper County is located in north-central Indiana and is bordered by Porter County to the north, Starke, Pulaski, and White Counties to the east, Benton and White Counties to the south, and Newton County to the west. Jasper County is located approximately 90 miles northwest of Indianapolis. Jasper County is served by Interstate 65, US route 231, and State Routes 10, 14, 16, 49, 110, and 114.

The climate in Jasper County ranges from hot and humid in the summertime to cold during the winter season. Average daytime temperatures during the summer fall around 72.1 ºF, while winter temperatures average at approximately 25.9 ºF. Precipitation for Jasper County totals an annual amount of 38.37 inches.

According to U.S. Census Data from the year 2000, the population of Jasper County was reported to be 30,043. Table 4 lists the population of the incorporated areas in Jasper County.

Table 4: Population of incorporated cities and towns in Jasper County (2000 Census)

Community	Population
DeMotte, Town of	3,234
Remington, Town of	1,323
Rensselaer, City Of	5,294
Wheatfield, Town Of	772

2.3 Principal Flood Problems

Major flooding in Jasper County primarily occurs along the Iroquois River and Kankakee River, and the tributaries to those rivers. Major floods principally occur during the winter and spring months, but can occur during any season. Generally, 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 to occur. During the summer, thunderstorms which have high intensities and relatively short durations can cause floods. Localized flood problems in the incorporated areas are summarized below:

Rensselaer, City of: The discharges and frequencies of floods on the Iroquois River at Rensselaer are as follows:

Table 5: Flood Crest Elevations USGS gage for Iroquois River at Rensselaer

Year	Discharge Cubic Feet Per Second (CFS)	Elevation (feet, gage datum)
1958	2,550	16.54
1974	1,840	13.94
1979	2,100	15.15
1982	2,010	14.88
1985	1,930	14.40
1990	1,890	14.24
1991	2,390	15.79
1994	2,520	15.52
1996	1,940	13.60
1997	1,830	13.19
2003	2,620	16.59
2005	2,020	14.65
2008	2,490	15.64
2009	2,660	16.13

Kouts, Town of: The discharges and frequencies of floods on the Kankakee River near Kouts are as follows:

Table 6: Flood Crest Elevations USGS gage for Kankakee River near Kouts

Year	Discharge Cubic Feet Per Second (CFS)	Elevation (feet, gage datum)
1978	4,590	12.66
1979	4,610	12.69
1981	4,630	13.59
1982	6,420	14.52
1985	5,360	13.98
1991	4,520	13.73
1993	4,990	13.74
1996	4,640	13.81
1997	4,480	13.48
2005	4,400	13.32
2008	5,470	14.18
2009	5,360	14.02

2.4 Flood Protection Measures

There are no recognized flood control structures in Jasper County.

3.0 ENGINEERING METHODS

For the flooding sources studied by detailed methods in Jasper 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 Jasper County. Table 7 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 Jasper County. Peak discharges in the table were compiled from previously effective FIS reports for Jasper County and incorporated areas.

Table 7: Summary of Discharges

Flooding Source And Location	Drainage Area (Square Miles)	Peak Discharge (cfs) 10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
CARPENTER CREEK					
Downstream of CR 850 S	53.7	2,300	3,700	5,760	7,950
Downstream of I-65	50.4	2,180	3,510	5,470	7,550
Downstream of SR 16	46.9	2,090	3,360	5,170	7,130
Downstream of CR 870 W	45.1	2,010	3,240	4,990	6,880
At CR 1200 S	40.2	1,960	3,150	4,500	6,210
Downstream of Confluence With Claude May Ditch	39.2	1,780	2,860	4,410	6,080
At Confluence with Unnamed Tributary Downstream of CR 1400 S	32.2	1,640	2,640	3,650	5,020
At CR 1600 S	28.6	1,470	2,370	3,290	4,520
At US 24 / US 231	22.2	1,440	2,320	2,680	3,670
At Confluence with Charles May Ditch	21.6	1,360	2,200	2,580	3,550
Upstream of South Kentucky Street	20.0	1,330	2,160	2,380	3,270
At CR 1800 S	18.7	1,310	2,120	2,210	3,030
Downstream of Confluence With Biddle Ditch	16.7	1,100	1,790	1,940	2,650
HICKAM LATERAL					
Downstream of CR 1300 N	10.7	340	690	820	930
Upstream of Conrail	10.1	255	520	620	690
Upstream of SR 10	8.6	220	450	530	590
Upstream of CR 1100 N	6.1	175	365	440	480
KANKAKEE RIVER					
At Dunns Bridge	1,160	4,500	5,500	6,100	N/A
WOLF CREEK					
Downstream of CR 1450 N	31.1	500	1,000	1,200	1,330
Downstream of CR 1300 N	17.5	350	700	830	930
Downstream of SR 49	17.3	340	690	820	920
Upstream of SR 10	15.5	320	650	770	860
Upstream of CR 1100 N	14.4	310	620	740	820

Pre-Countywide Analyses

For various streams, the discharges for a stream have been coordinated with the IDNR, the Natural Resources Conservation Service (formally the Soil Conservation Service), the U.S. Geological Survey (USGS) and the U.S. Army Corps of Engineers (USACE), through a Memorandum of Understanding dated May 6, 1976.

The hydrology for Wolf Creek and Hickam Lateral are based on Coordinated Discharge Curves for Jasper County dated 1984. A discharge curve for the 10%, 4%, 2% and 1% annual chance floods were used for the studies as part of the 1986 SCS Jasper County Floodplain Management Study.

Initial Countywide Analyses

The equations used to determine the discharges in the majority of the cases are taken from Estimation of Peak Discharges of Indiana Streams by using log Pearson Type III distribution. The equations presented in the report are also included in the latest version of the National Flood Frequency (NFF) program by the USGS, and are included in the USGS StreamStats application. In some cases, the discharges for a stream have been coordinated with the IDNR, the Natural Resources Conservation Service, the USGS and the USACE, through a Memorandum of Understanding dated May 6, 1976.

The hydrology for Carpenter Creek was revised based on a hydrologic study developed by the IDNR. A Hydrologic Engineering Center Hydrologic Modeling System (HEC-HMS) model was developed based on rainfall data from the 2008 flood event. A coordinated curve was proposed and approved by the IDNR.

These data were coordinated with the IDNR, the Natural Resources Conservation Service (formally the Soil Conservation Service), the U. S. Geological Survey and the Louisville District of the USACE, through a Memorandum Of Understanding dated May 6, 1976. Discharge curves for the 10-, 2-, 1-, and 0.2- percent annual chance floods were developed for each study stream using several different procedures and compared for consistency.

Hydrologic analysis was not performed for the Kankakee River by the contractor. The study for the Kankakee River was based on the neighboring Porter County Flood Insurance Study. For Porter County, stream gage readings along the river were analyzed and the discharge-frequency relations were determined using the log-Pearson Type III distribution by the INDR.

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 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 us the flood elevation data presented in this FIS report in conjunction with the data shown on the FIRM.

Pre-Countywide Analyses

Profiles for Wolf Creek, and Hickam Lateral were started at known water surface elevations of the Kankakee River at the confluences.

Initial Countywide Analyses

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.

Water-surface elevations for floods of the selected recurrence intervals were computed through use of the WSP2 computer program. For the new approximate study reaches, the USACE Hydrologic Engineering Center River Analysis System (HEC-RAS) step-backwater analyses program was used.

The study for the Kankakee River was based on the neighboring Porter County Flood Insurance Study. The selected flood elevations on the Kankakee River were computed using the SCS WSP2 computer program. The starting water-surface elevation on the Kankakee River was obtained by the slope-area method. Roughness values for the main channel of Kankakee River range from 0.036 to 0.07 with flood plain roughness values ranging from 0.08 to 0.14. No floodway was computed for this study, and therefore it is not included in Table 9.

The hydraulic analysis for Carpenter Creek was based on field inspection and modeling of the creek using HEC-RAS and was performed by the IDNR. Structural measurement and field surveying was conducted by the IDNR Surveying Section. Cross section geometry was derived from detailed 2-ft topographic mapping provided by Jasper County. All cross sections are in NAVD88. The model was started using a normal depth slope of 0.00034.

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.

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 8.

Table 8: Channel and Overbank Roughness Factors

Stream	Roughness Coefficients Main Channel	Overbanks
CARPENTER CREEK	0.045 – 0.06	0.06 – 0.1
HICKAM LATERAL	0.05 – 0.06	0.06 – 0.07
KANKAKEE RIVER	0.036 – 0.070	0.080 – 0.140
WOLF CREEK	0.05 – 0.07	0.06 – 0.07

For new approximate study areas, analyses were based on field inspection and modeling of the stream reaches using simplified HEC-RAS models. Structural measurements or field surveying was not performed. A channel survey provided by the Jasper County Surveyors office was used to create the approximate model for Slough Creek. Cross section geometry was derived from topographic mapping provided by the USGS digital elevation model. Starting elevations were assumed to be normal depth.

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 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 -0.29 feet was calculated at the centroid of the county and used to convert all elevations in Jasper county from NGVD29 to NAVD88 using the National Geologic Survey's VERTCON online utility (VERTCON, 2005).

(NGVD29 – 0.29 = NAVD88)

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.

The coordinate system used for the production of the digital FIRMs is the Transverse Mercator projection, Indiana State Plane coordinate system, East Zone, referenced to the North American Datum of 1983 (NAD83) and the Geodetic Reference System (GRS) 1980 spheroid.

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 mapping and from the 2005 statewide orthophotography flight. The floodplain for Carpenter Creek was delineated using the Jasper County 2-ft Contours.

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, and AE); and the 0.2-percent-annual-chance floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 1- and 0.2-percent-annual-chance floodplain boundaries are close together, 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

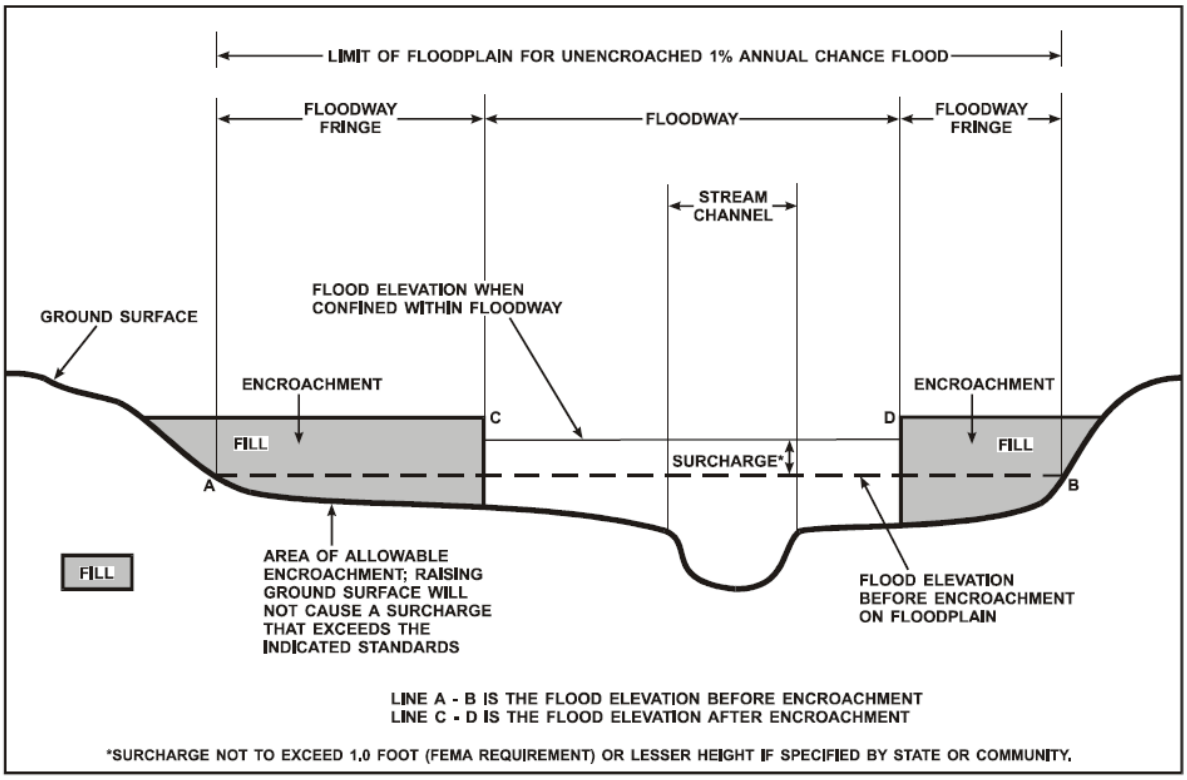
Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development 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 9: Floodway Data Table). 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. A floodway was not computed for the Kankakee River and therefore it is not included in Table 9.

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 0.14 feet at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 1.

Figure 1: Floodway Schematic



FLOODING SOURCE		FLOODWAY			1- PERCENT ANNUAL CHANCE 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)
CARPENTER CREEK								
A	30	653	4,819	1.2	650.2	647.7 [2]	647.7	0.0
B	1,773	484	3,270	1.8	650.2	649.4 [2]	649.5	0.1
C	2,947	667	5,216	1.1	650.2	649.9 [2]	650.0	0.1
D	4,015	522	3,644	1.6	650.2	650.2	650.3	0.1
E	4,963	606	5,725	1.0	652.0	652.0	652.0	0.0
F	5,536	592	7,034	0.8	652.0	652.0	652.1	0.1
G	6,734	745	7,503	0.8	652.4	652.4	652.4	0.0
H	7,656	720	7,048	0.8	652.5	652.5	652.5	0.0
I	8,858	683	5,439	1.1	652.6	652.6	652.7	0.1
J	10,541	675	5,004	1.2	653.0	653.0	653.0	0.0
K	11,270	1,052	6,718	0.9	653.1	653.1	653.1	0.0
L	14,817	1,130	7,256	0.8	654.3	654.3	654.3	0.0
M	16,465	932	5,522	1.0	654.5	654.5	654.5	0.0
N	18,775	1,520	6,924	0.8	654.8	654.8	654.9	0.1
O	20,251	861	4,754	1.1	655.1	655.1	655.2	0.1
P	24,409	1,257	4,858	1.1	656.5	656.5	656.5	0.0
Q	29,528	1,050	4,889	1.0	658.6	658.6	658.6	0.0
R	32,154	635	2,773	1.8	660.0	660.0	660.0	0.0
S	33,891	452	2,442	2.0	662.0	662.0	662.0	0.0
T	35,054	524	2,878	1.7	663.1	663.1	663.1	0.0
U	36,138	840	4,552	1.1	663.5	663.5	663.5	0.0
V	37,460	1,542	6,238	0.8	663.7	663.7	663.8	0.1
W	40,047	1,199	3,248	1.4	665.4	665.4	665.4	0.0
X	41,417	774	2,500	1.8	666.7	666.7	666.8	0.1
Y	43,527	657	2,356	1.9	668.7	668.7	668.8	0.1
Z	44,592	742	1,970	2.2	670.0	670.0	670.1	0.1

[1] Feet above confluence with Slough Creek

[2] Elevation Without Considering Backwater from Slough Creek and Iroquois River

FLOODING SOURCE		FLOODWAY			1- PERCENT ANNUAL CHANCE 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)
CARPENTER CREEK								
AA	47,497	1,210	3,863	1.1	673.3	673.3	673.3	0.0
AB	49,930	484	1,164	3.1	675.2	675.2	675.3	0.1
AC	51,174	386	1,626	2.2	677.8	677.8	677.9	0.1
AD	52,710	310	1,167	3.1	680.2	680.2	680.3	0.1
AE	53,620	440	1,710	2.1	682.1	682.1	682.1	0.0
AF	54,477	389	1,611	2.3	683.6	683.6	683.6	0.0
AG	56,855	382	1,708	2.1	687.6	687.6	687.6	0.0
AH	58,514	366	1,822	2.0	689.3	689.3	689.4	0.1
AI	59,847	525	2,922	1.3	692.7	692.7	692.7	0.0
AJ	61,030	835	2,896	1.3	694.1	694.1	694.1	0.0
AK	62,388	280	1,295	2.8	695.7	695.7	695.7	0.0
AL	64,261	631	2,027	1.8	699.1	699.1	699.1	0.0
AM	65,678	112	660	5.5	702.5	702.5	702.5	0.0
AN	66,752	143	930	3.5	704.7	704.7	704.8	0.1
AO	67,299	218	1,196	2.8	705.7	705.7	705.8	0.1
AP	68,718	230	1,219	2.7	708.9	708.9	709.0	0.1
AQ	70,023	259	1,335	2.5	710.6	710.6	710.7	0.1
AR	70,609	298	1,500	2.2	711.5	711.5	711.6	0.1
AS	71,488	451	2,079	1.6	712.5	712.5	712.6	0.1
AT	72,578	311	1,547	2.1	713.4	713.4	713.5	0.1
AU	73,270	251	1,109	3.0	714.3	714.3	714.4	0.1
AV	75,036	550	2,862	1.2	718.9	718.9	718.9	0.0
AW	75,485	298	1,778	1.9	719.0	719.0	719.1	0.1
AX	76,519	323	1,541	2.1	719.7	719.7	719.8	0.1
AY	77,468	453	2,178	1.5	720.4	720.4	720.5	0.1
AZ	78,825	271	1,826	1.5	722.7	722.7	722.7	0.0

[1] Feet above confluence with Slough Creek

FLOODING SOURCE		FLOODWAY			1- PERCENT ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[2]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FT/SEC)	REGULATORY (FEET, NAVD)	WITHOUT FLOODWAY (FEET, NAVD)	WITH FLOODWAY (FEET, NAVD)	INCREASE (FEET)
CARPENTER CREEK								
BA	79,618	251	1,588	1.7	723.0	723.0	723.0	0.0
BB	81,473	423	2,369	1.1	725.4	725.4	725.5	0.1
BC	82,745	404	2,484	1.0	725.8	725.8	725.9	0.1
BD	83,187	271	1,388	1.7	725.9	725.9	726.0	0.1
BE	84,023	355	1,332	1.8	726.5	726.5	726.6	0.1
BF	85,351	521	1,476	1.6	728.0	728.0	728.0	0.0
BG	87,201	750	2,363	0.9	728.9	728.9	729.0	0.1
BH	89,051	270	902	2.5	730.1	730.1	730.1	0.0
BI	90,800	305	723	2.68	733.0	733.0	733.1	0.1

[1] Feet above confluence with Slough Creek

FLOODING SOURCE		FLOODWAY			1- PERCENT ANNUAL CHANCE 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)
HICKAM LATERAL								
A	5,550	2,162	5,691	0.11	659.9	659.9	660.0	0.1
B	7,860	2,066	10,546	0.06	659.9	659.9	660.0	0.1
C	10,900	854	1,741	0.34	660.3	660.3	660.4	0.1
D	17,880	955	197	2.60	671.4	671.4	671.5	0.1
WOLF CREEK								
A	12,600	840	1,123	1.21	659.6	659.6	659.7	0.1
B	24,450	985	1,368	0.65	661.8	661.8	661.9	0.1
C	27,300	301	493	1.80	664.1	664.1	664.2	0.1
D	31,130	84	461	1.83	666.7	666.7	666.8	0.1
E	36,350	59	298	2.62	672.9	672.9	673.0	0.1

[1] Feet above mouth

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY

JASPER COUNTY, IN
AND INCORPORATED AREAS

FLOODWAY DATA

HICKAM LATERAL - WOLF CREEK

5.0 INSURANCE APPLICATIONS

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

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 Jasper 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 10: 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

Table 10: Community Map History

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
Demotte, Town of	February 15, 1974	None	None	None
Jasper County (Unincorporated Areas)	May 12, 1978	None	July 1, 1994	None
Remington, Town of	May 31, 1974	March 5, 1976	November 1, 1995	None
Rensselaer, City of	February 1, 1974	June 11, 1976	February 1, 1994	None
Wheatfield, Town of	N/A	N/A	N/A	

TABLE 10	FEDERAL EMERGENCY MANAGEMENT AGENCY JASPER COUNTY, IN (AND INCORPORATED AREAS)	COMMUNITY MAP HISTORY

9.0 BIBLIOGRAPHY AND REFERENCES

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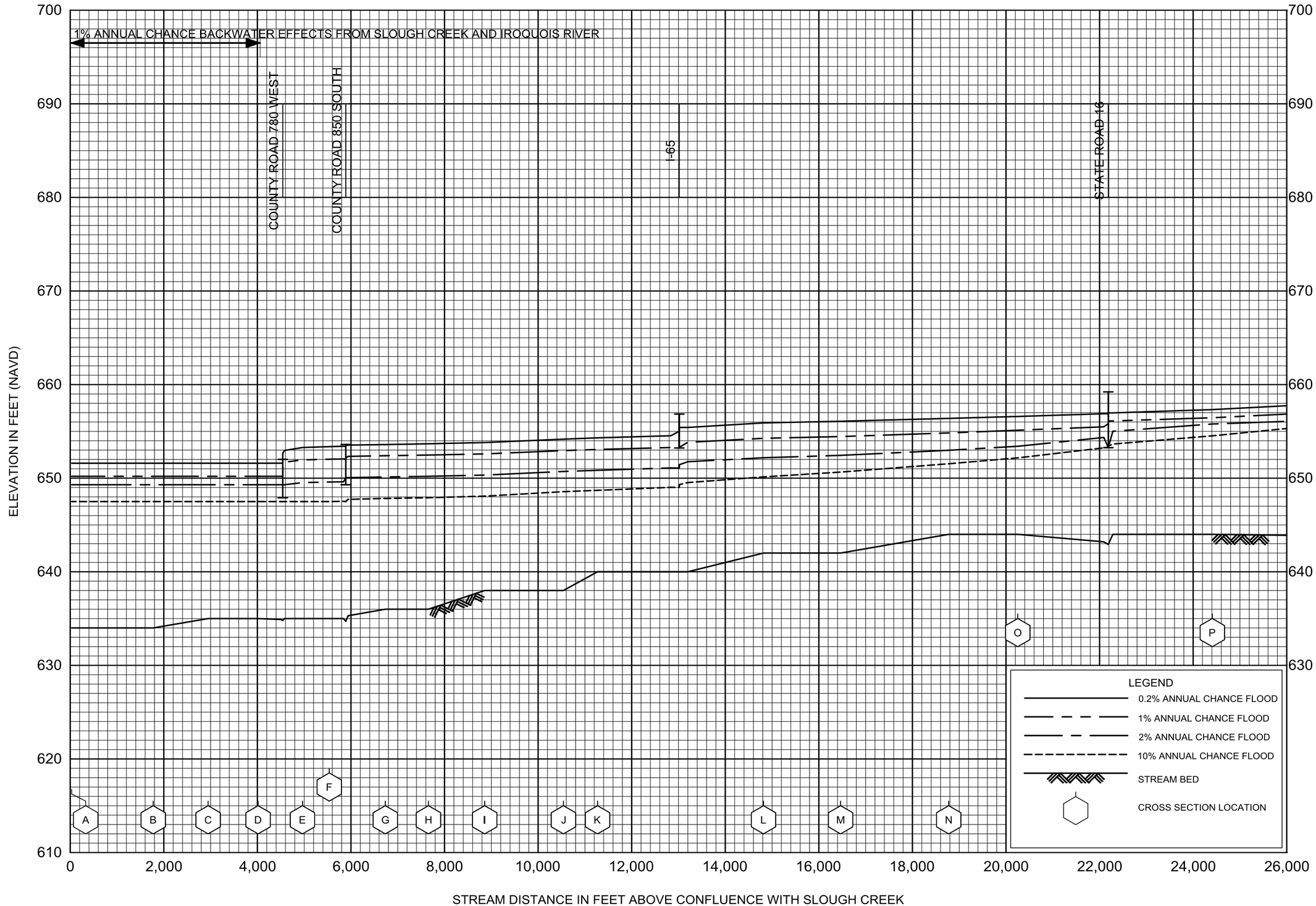


FLOOD PROFILES

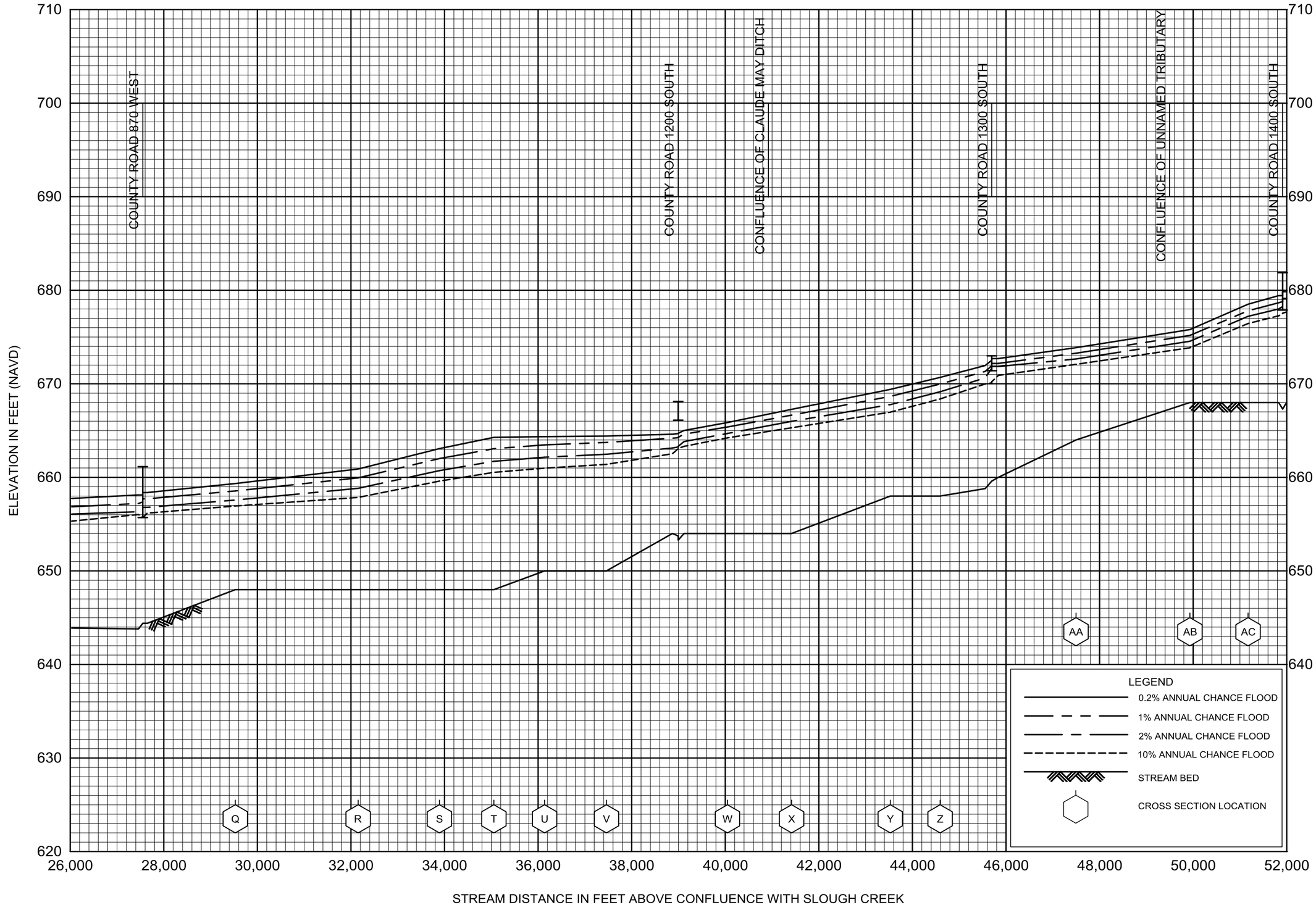
CARPENTER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

JASPER COUNTY, IN

AND INCORPORATED AREAS

01P



FLOOD PROFILES

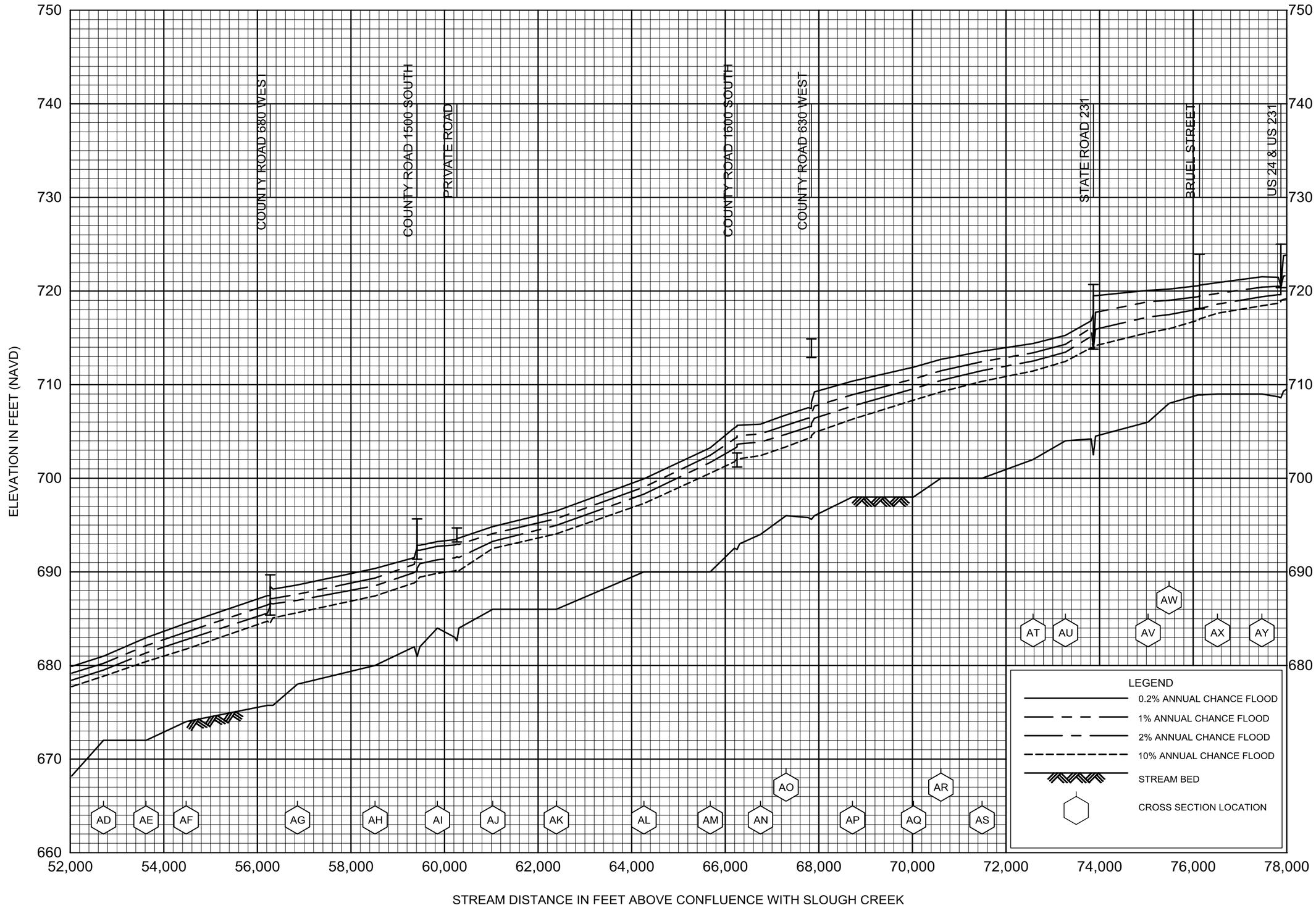
CARPENTER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

JASPER COUNTY, IN

AND INCORPORATED AREAS

02P



FLOOD PROFILES

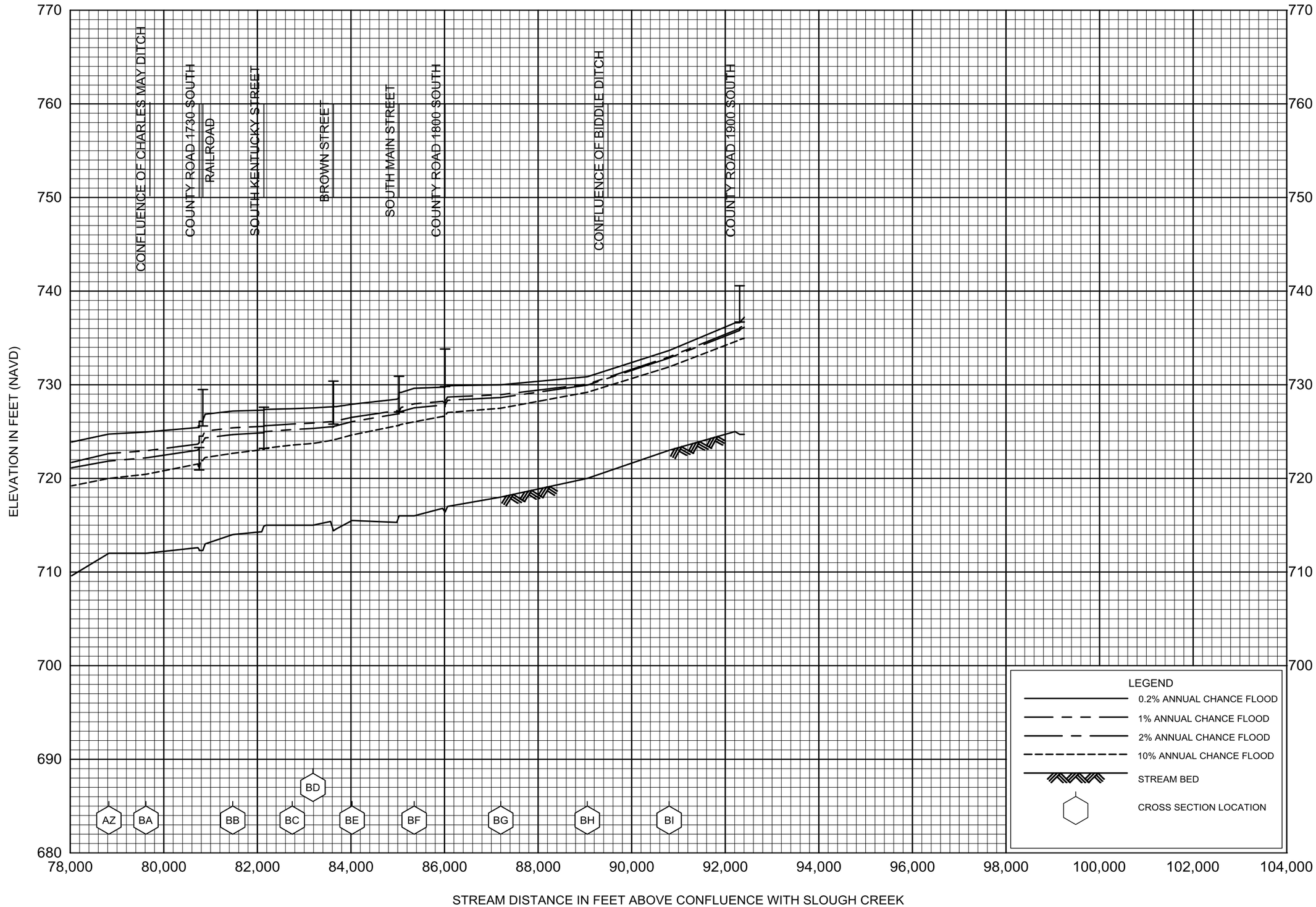
CARPENTER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

JASPER COUNTY, IN

AND INCORPORATED AREAS

03P



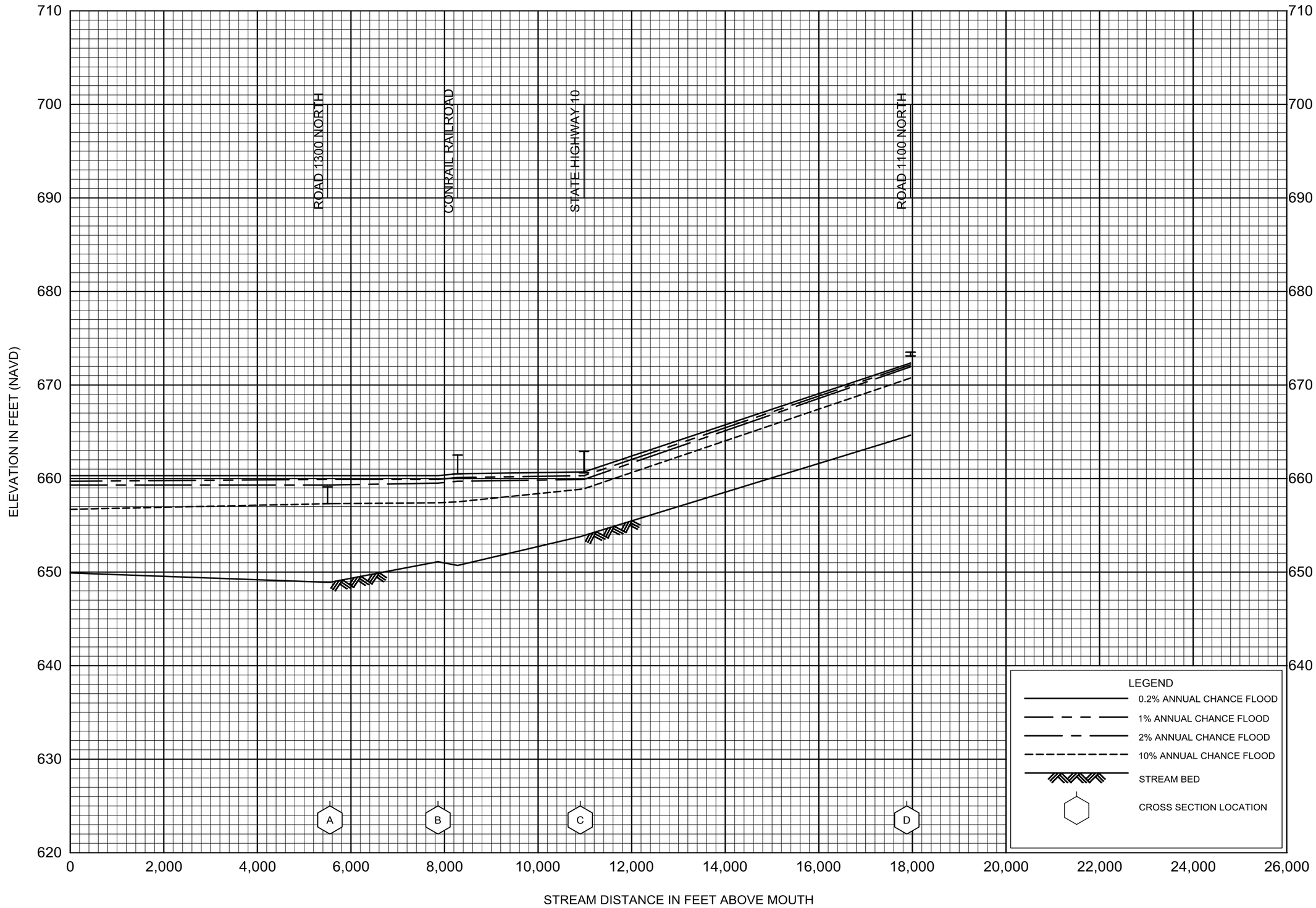
FLOOD PROFILES

CARPENTER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

JASPER COUNTY, IN

AND INCORPORATED AREAS



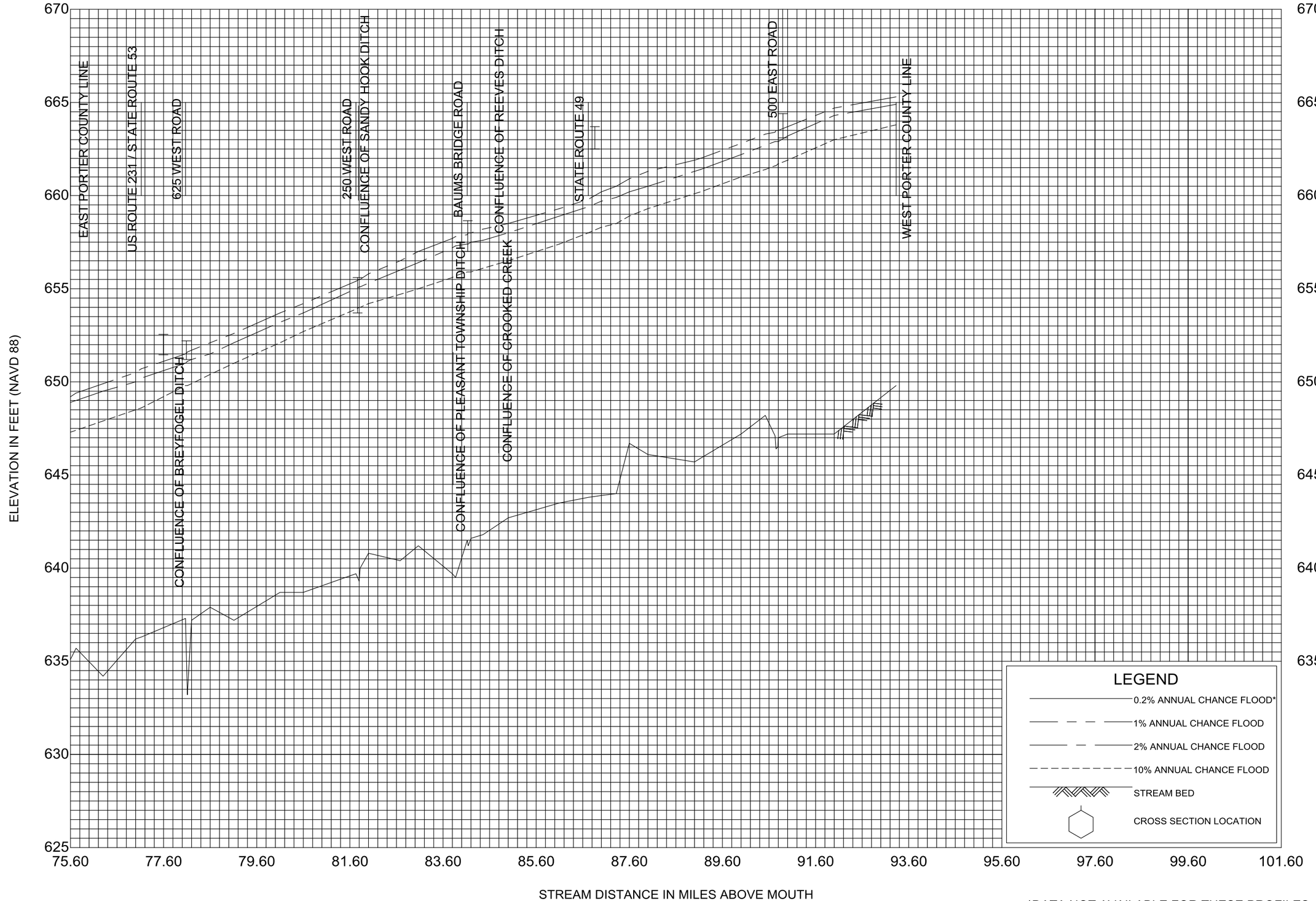
FLOOD PROFILES

HICKAM LATERAL

FEDERAL EMERGENCY MANAGEMENT AGENCY

JASPER COUNTY, IN

AND INCORPORATED AREAS



*DATA NOT AVAILABLE FOR THESE PROFILES

FLOOD PROFILES

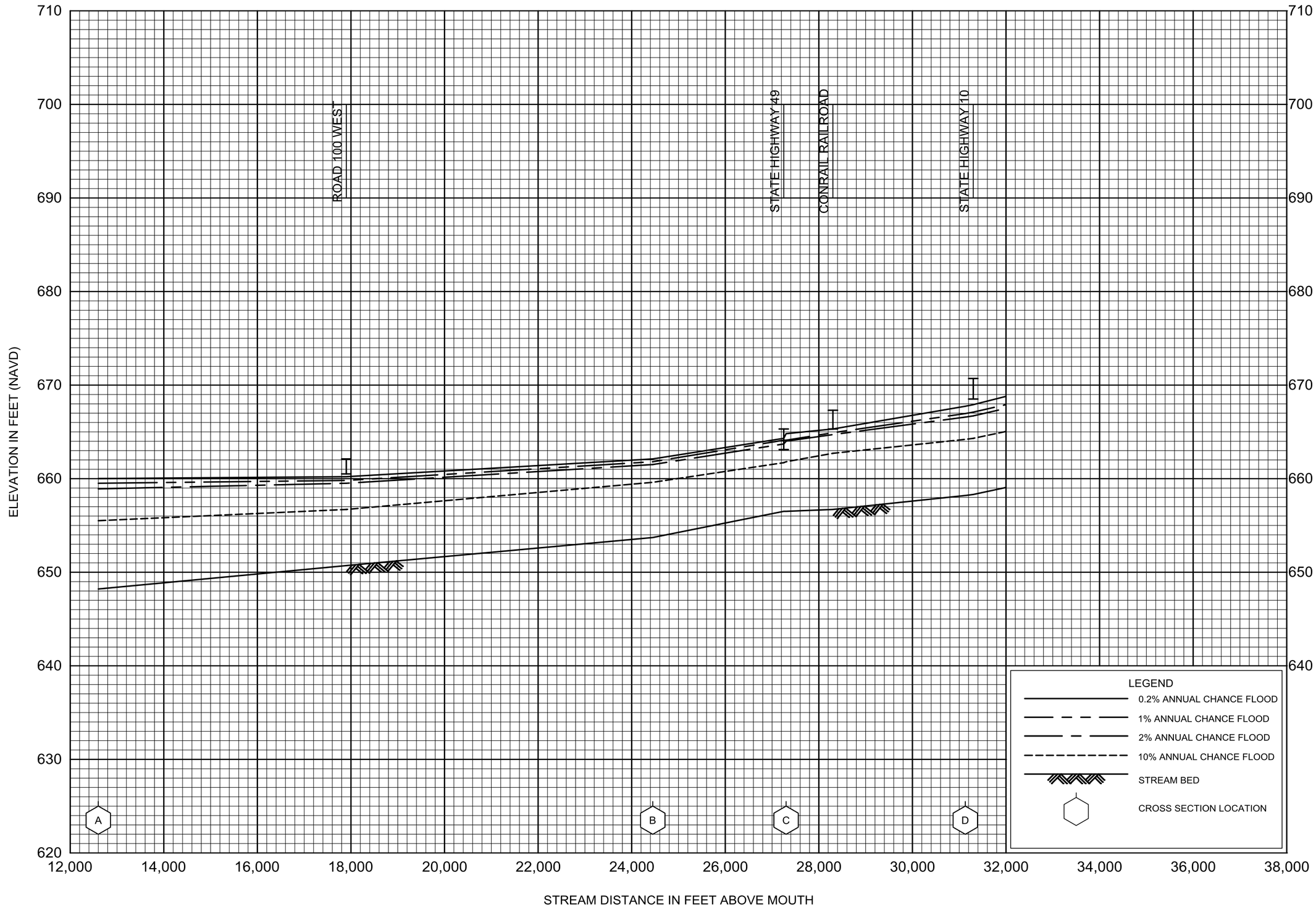
KANKAKEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

JASPER COUNTY, IN

AND INCORPORATED AREAS

06P



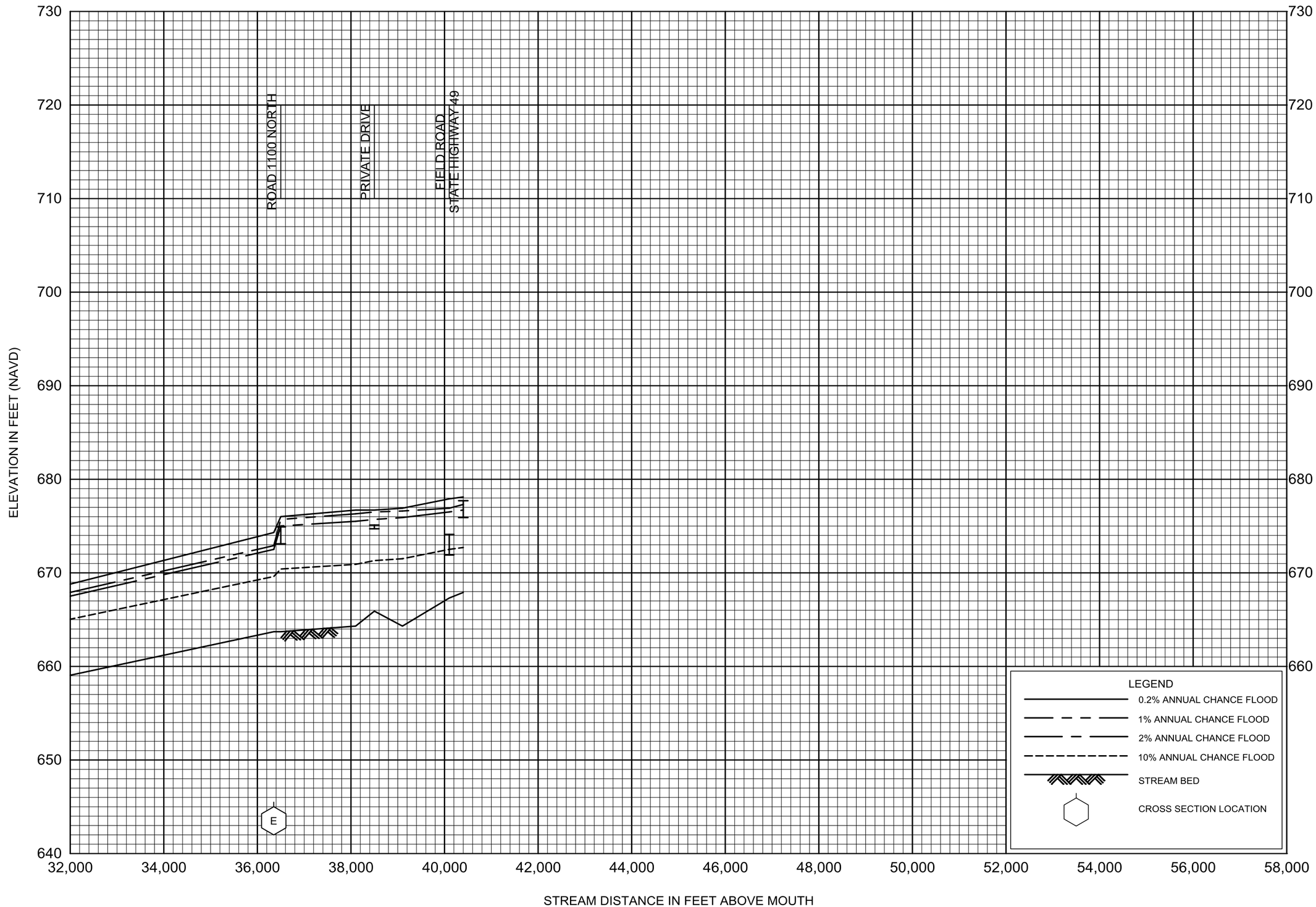
FLOOD PROFILES

WOLF CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

JASPER COUNTY, IN

AND INCORPORATED AREAS



FLOOD PROFILES

WOLF CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

JASPER COUNTY, IN

AND INCORPORATED AREAS